(12) STANDARD PATENT (11) Application No. **AU 2020379046 B2**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
CRISPR and AAV strategies for X-linked juvenile retinoschisis therapy

(51) International Patent Classification(s)
A61K 48/00 (2006.01)

(21) Application No: **2020379046** (22) Date of Filing: **2020.11.07**

(87) WIPO No: **WO21/092513**

(30) Priority Data

(31) Number	(32) Date	(33) Country
62/932,608	**2019.11.08**	**US**

(43) Publication Date: **2021.05.14**
(44) Accepted Journal Date: **2025.03.13**

(71) Applicant(s)
Regeneron Pharmaceuticals, Inc.

(72) Inventor(s)
HUNT, Charleen;LIU, Yang;GONG, Guochun;ROMANO, Carmelo;ZAMBROWICZ, Brian

(74) Agent / Attorney
Phillips Ormonde Fitzpatrick, PO Box 323, COLLINS STREET WEST, VIC, 8007, AU

(56) Related Art
WO 2012/145601 A2
US 10350306 B2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 May 2021 (14.05.2021)

WIPO | PCT

(10) International Publication Number
WO 2021/092513 A1

(51) International Patent Classification:
A61K 48/00 (2006.01)

(21) International Application Number:
PCT/US2020/059568

(22) International Filing Date:
07 November 2020 (07.11.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/932,608 08 November 2019 (08.11.2019) US

(71) Applicant: **REGENERON PHARMACEUTICALS, INC.** [US/US]; 777 Old Saw Mill River Road, Tarrytown, New York 10591 (US).

(72) Inventors: **HUNT, Charleen**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591 (US). **LIU, Yang**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591 (US). **GONG, Guochun**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591 (US). **ROMANO, Carmelo**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591 (US). **ZAMBROWICZ, Brian**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591 (US).

(74) Agent: **SCHILLING, Stephen H.** et al.; Alston & Bird LLP, Bank of America Plaza, 101 South Tryon Street, Suite 4000, Charlotte, North Carolina 28280-4000 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,

(54) Title: CRISPR AND AAV STRATEGIES FOR X-LINKED JUVENILE RETINOSCHISIS THERAPY

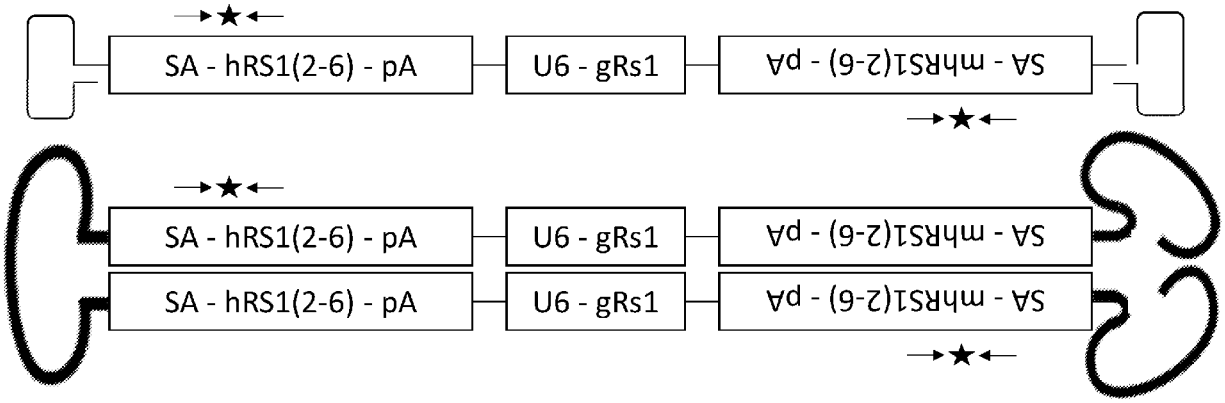


FIG. 3A

(57) **Abstract:** Nucleic acid constructs and compositions that allow insertion and/or expression of a retinoschisin coding sequence are provided. Nuclease agents targeting *RS1* loci are provided. Compositions and methods of using such constructs for integration into a target genomic locus and/or expression in a cell are also provided. Methods of treating X-linked juvenile retinoschisis using the nucleic acid constructs and compositions are also provided.

WO 2021/092513 A1

[Continued on next page]

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i))*
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*
— *with sequence listing part of description (Rule 5.2(a))*

2020379046 11 Feb 2025

CRISPR AND AAV STRATEGIES FOR X-LINKED JUVENILE RETINOSCHISIS THERAPY

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of US Application No. 62/932,608, filed November 8, 2019, which is herein incorporated by reference in its entirety for all purposes.

REFERENCE TO A SEQUENCE LISTING SUBMITTED AS A TEXT FILE VIA EFS WEB

[0002] The Sequence Listing written in file 694232SEQLIST.txt is 1.22 megabytes, was created on November 6, 2020, and is hereby incorporated by reference.

BACKGROUND

[0003] The *RS1* gene encodes a highly conserved extracellular protein involved in the cellular organization of the retina. It is assembled and secreted from photoreceptors and bipolar cells as a homo-oligomeric protein complex. Over 200 mutations have been detected in *RS1,* many leading to early onset of macular degeneration due to a non-functional protein or the absence of protein secretion. Lack of functional *Rs1* expression causes schisis within the retinal layers leading to the early and progressive vision loss associated with X-linked juvenile retinoschisis (XLRS). Although there have been gene therapy clinical trials for XLRS, the trials did not meet their endpoints. New strategies are needed for treating XLRS.

SUMMARY

[0004] Nucleic acid constructs and compositions that allow insertion of a retinoschisin coding sequence into a target genomic locus such as an endogenous *RS1* locus and/or expression of the retinoschisin coding sequence are provided. The nucleic acid constructs and compositions can be used in methods for integration into a target genomic locus and/or expression in a cell or in methods of treating X-linked juvenile retinoschisis.

[0005] In one aspect, provided is a composition or combination for use in expressing retinoschisin or integrating a coding sequence for a retinoschisin protein or functional fragment thereof into a target genomic locus in a retinal cell, comprising: (a) a nucleic acid construct

2020379046 11 Feb 2025

comprising the coding sequence for the retinoschisin protein or functional fragment thereof for integration into the target genomic locus, wherein the coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof, wherein the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or functional fragment thereof, wherein: (I) the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, and (II) the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, optionally wherein the splice acceptor site is from intron 1 of human *RS1*; and (b) a nuclease agent comprising a Cas protein or a nucleic acid encoding the Cas protein and a guide RNA or a DNA encoding the guide RNA, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus, wherein the target genomic locus is in an endogenous *RS1* locus comprising an endogenous *RS1* gene, wherein integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site, wherein the integration of the nucleic acid construct into the endogenous *RS1* locus in the retinal cell reduces or eliminates expression of endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or functional fragment thereof encoded by the nucleic acid construct, and wherein (a) and (b) are administered simultaneously or sequentially, in any order.

[0005a] In another aspect, provided is a method of expressing retinoschisin or integrating a coding sequence for a retinoschisin protein or functional fragment thereof into a target genomic locus in a retinal cell, comprising administering to the retinal cell a composition or combination comprising: (a) a nucleic acid construct comprising the coding sequence for the retinoschisin protein or functional fragment thereof for integration into the target genomic locus, wherein the coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof, wherein the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or functional fragment thereof, and wherein: (I) the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, and (II) the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, optionally wherein the splice acceptor site is from intron 1 of human *RS1*; and (b) a nuclease agent comprising a Cas protein or a nucleic acid encoding the Cas protein and a guide RNA or a DNA encoding the guide RNA, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus, wherein the target genomic locus is in an endogenous *RS1* locus comprising an

2020379046 11 Feb 2025

endogenous *RS1* gene, wherein integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site, wherein the integration of the nucleic acid construct into the endogenous *RS1* locus in the retinal cell reduces or eliminates expression of endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or functional fragment thereof encoded by the nucleic acid construct, and wherein (a) and (b) are administered simultaneously or sequentially, in any order.

[0005b] In another aspect, provided are bidirectional nucleic acid constructs for integration into a target genomic locus. Some such nucleic acid constructs comprise: (a) a first segment comprising a first coding sequence for a first retinoschisin protein or fragment thereof; and (b) a second

segment comprising a reverse complement of a second coding sequence for a second retinoschisin protein or fragment thereof. In some such constructs, the second segment is located 3' (i.e., downstream) of the first segment.

[0006] In some such constructs, the first retinoschisin protein or fragment thereof is a human retinoschisin protein or fragment thereof, the second retinoschisin protein or fragment thereof is a human retinoschisin protein or fragment thereof, or both the first retinoschisin protein or fragment thereof and the second retinoschisin protein or fragment thereof are a human retinoschisin protein or fragment thereof. In some such constructs, the first coding sequence comprises, consists essentially of, or consists of complementary DNA (cDNA), the second coding sequence comprises, consists essentially of, or consists of cDNA, or both the first coding sequence and the second coding sequence comprise, consist essentially of, or consist of cDNA. In some such constructs, the first coding sequence comprises, consists essentially of, or consists of exons 2-6 of human *RS1* or degenerate variants thereof, the second coding sequence comprises, consists essentially of, or consists of exons 2-6 of human *RS1* or degenerate variants thereof, or both the first coding sequence and the second coding sequence comprise, consist essentially of, or consist of exons 2-6 of human *RS1* or degenerate variants thereof.

[0007] In some such constructs, the first segment comprises a fragment or portion of the first intron of human *RS1* located 5' (i.e., upstream) of the first coding sequence, and/or the second segment comprises a reverse complement of a fragment or portion of the second intron of human *RS1* located 3' (i.e., downstream) of the reverse complement of the second coding sequence.

[0008] In some such constructs, the first retinoschisin protein or fragment thereof is identical to the second retinoschisin protein or fragment thereof. In some such constructs, the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence. In some such constructs, the second segment has at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 55%, at least about 60%, at least about 65%, at least about 70%, at least about 75%, at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 97%, or at least about 99% complementarity to the first segment. In some such constructs, the second segment has less than about 30%, less than about 35%, less than about 40%, less than about 45%, less than about 50%, less than about 55%, less than about 60%, less than about 65%, less than about 70%, less than about 75%, less than about 80%, less than about 85%, less than about 90%, less than about 95%,

less than about 97%, or less than about 99% complementarity to the first segment. In some such constructs, the reverse complement of the second coding sequence is: (a) not substantially complementary to the first coding sequence; (b) not substantially complementary to a fragment of the first coding sequence; (c) highly complementary to the first coding sequence; (d) highly complementary to the fragment of the first coding sequence; (e) at least about 60%, at least about 70%, at least about 80%, or at least about 90% identical to the reverse complement of the first coding sequence; (f) about 50% to about 80% identical to the reverse complement of the first coding sequence; or (g) about 60% to about 100% identical to the reverse complement of the first coding sequence.

[0009] In some such constructs, the first segment is linked to the second segment by a linker. Optionally, the linker is about 5 to about 2000 nucleotides in length.

[0010] In some such constructs, the first segment comprises a first polyadenylation signal sequence located 3' of the first coding sequence, and the second segment comprises a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence. Optionally, the first polyadenylation signal sequence is different from the second polyadenylation signal sequence.

[0011] In some such constructs, the nucleic acid construct does not comprise a promoter that drives expression of the first retinoschisin protein or fragment thereof or the second retinoschisin protein or fragment thereof. In some such constructs, the first segment comprises a first splice acceptor site located 5' of the first coding sequence, and the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence. Optionally, the first splice acceptor site is from an *RS1* gene, the second splice acceptor site is from an *RS1* gene, or both the first splice acceptor site and the second splice acceptor site are from an *RS1* gene. Optionally, the first splice acceptor site is from intron 1 of human *RS1*, the second splice acceptor site is from intron 1 of human *RS1*, or both the first acceptor site and the second splice acceptor site are from intron 1 of human *RS1*.

[0012] In some such constructs, the nucleic acid construct does not comprise a homology arm. In some such constructs, the nucleic acid construct comprises homology arms. In some such constructs, the nucleic acid construct is single-stranded. In some such constructs, the nucleic acid construct is double-stranded. In some such constructs, the nucleic acid construct comprises DNA.

[0013] In some such constructs, the first coding sequence is codon-optimized for expression in a host cell, the second coding sequence is codon-optimized for expression in the host cell, or both the first coding sequence and the second coding sequence are codon-optimized for expression in the host cell. In some such constructs, the nucleic acid construct comprises one or more of the following terminal structures: hairpin, loop, inverted terminal repeat (ITR), or toroid. Optionally, the nucleic acid construct comprises ITRs.

[0014] In some such constructs, the first retinoschisin protein or fragment thereof and/or the second retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 5. In some such constructs, the first coding sequence and/or the second coding sequence comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 8 or 9. In some such constructs, the first coding sequence comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 8, and the second coding sequence comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 9. In some such constructs, the nucleic acid construct comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 46 or 47.

[0015] In some such constructs, the second segment is located 3' of the first segment, both the first retinoschisin protein or fragment thereof and the second retinoschisin protein or fragment thereof are a human retinoschisin protein or fragment thereof, the first retinoschisin protein or fragment thereof is identical to the second retinoschisin protein or fragment thereof, both the first coding sequence and the second coding sequence comprise complementary DNA

(cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence, the first segment comprises a first polyadenylation signal sequence located 3' of the first coding sequence, and the second segment comprises a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence, the first segment comprises a first splice acceptor site located 5' of the first coding sequence, and the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence, the nucleic acid construct does not comprise a promoter that drives expression of the first retinoschisin protein or fragment thereof or the second retinoschisin protein or fragment thereof, and the nucleic acid construct does not comprise a homology arm.

[0016] In another aspect, provided are vectors comprising any of the above bidirectional nucleic acid constructs. Some such vectors are viral vectors. Optionally, the vector is an adeno-associated virus (AAV) vector. Optionally, the AAV comprises a single-stranded genome (ssAAV). Optionally, the AAV comprises a self-complementary genome (scAAV). Optionally, the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, or AAV7m8.

[0017] Some such vectors do not comprise a promoter that drives expression of the first retinoschisin protein or fragment thereof or the second retinoschisin protein or fragment thereof. Some such vectors do not comprise a homology arm. Some such vectors do comprise homology arms.

[0018] In another aspect, provided are lipid nanoparticles comprising any of the above bidirectional nucleic acid constructs.

[0019] In another aspect, provided are cells comprising any of the above bidirectional nucleic acid constructs. Some such cells are *in vitro*. Some such cells are *in vivo*. Some such cells are mammalian cells. Some such cells are human cells. Some such cells are retinal cells.

[0020] Some such cells express the first retinoschisin protein or fragment thereof or the second retinoschisin protein or fragment thereof. In some such cells, the nucleic acid construct is genomically integrated at the target genomic locus. In some such cells, the target genomic locus is an endogenous *RS1* locus. Optionally, the nucleic acid construct is genomically integrated in intron 1 of the endogenous *RS1* locus. Optionally, endogenous *RS1* exon 1 splices into the first coding sequence or the second coding sequence of the nucleic acid construct. Optionally, the

modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4.

[0021] In some such cells, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. Optionally, the integration of the nucleic acid construct into the endogenous *RS1* locus reduces or eliminates expression of the endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or fragment thereof encoded by the nucleic acid construct. Optionally, the endogenous *RS1* locus comprises a mutated *RS1* gene comprising a mutation that causes X-linked juvenile retinoschisis, and expression of the genomically integrated nucleic acid construct reduces or eliminates expression of the mutated *RS1* gene.

[0022] In another aspect, provided are nucleic acid constructs for homology-independent targeted integration into a target genomic locus. Some such nucleic acid constructs comprise a coding sequence for a retinoschisin protein or fragment thereof flanked on each side by a nuclease target sequence for a nuclease agent. Also provided are nucleic acid constructs for homologous recombination with a target locus. Some such nucleic acid constructs comprise a coding sequence for a retinoschisin protein or fragment thereof flanked by homology arms on each side, optionally wherein the coding sequence and homology arms are further flanked on each side by a target sequence for a nuclease agent. Optionally, each homology arm is between about 25 nucleotides and about 2.5 kb in length.

[0023] In some such constructs for homology-independent targeted integration, the nuclease target sequence in the nucleic acid construct is identical to a nuclease target sequence for integration into the target genomic locus, wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation.

[0024] In some such constructs, the retinoschisin protein or fragment thereof is a human retinoschisin protein or fragment thereof. In some such constructs, the coding sequence for the retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of

complementary DNA (cDNA). In some such constructs, the coding sequence for the retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of exons 2-6 of human *RS1* or degenerate variants thereof.

[0025] In some such constructs, the nucleic acid construct comprises a fragment or portion of the first intron of human *RS1* located 5' of the coding sequence. In some such constructs, the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or fragment thereof. In some such constructs, the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence. In some such constructs, the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence. Optionally, the splice acceptor site is from an *RS1* gene. Optionally, the splice acceptor site is from intron 1 of human *RS1*.

[0026] Some such constructs are single-stranded. Some such constructs are double-stranded. Some such constructs comprise DNA. In some such constructs, the coding sequence is codon-optimized for expression in a host cell.

[0027] In some such constructs, the construct comprises one or more of the following terminal structures: hairpin, loop, inverted terminal repeat (ITR), or toroid. Optionally, the nucleic acid construct comprising the coding sequence and the nuclease target sequences is flanked by ITRs.

[0028] In some such constructs, the nuclease agent is a Cas protein and a guide RNA, and the nuclease target sequence is a guide RNA target sequence. Optionally, the guide RNA target sequence is an inverted guide RNA target sequence. Optionally, the Cas protein is Cas9.

[0029] In some such constructs, the retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 5. In some such constructs, the coding sequence for the retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 8 or 9. In some such constructs, the nucleic acid construct comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least

about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 45.

[0030] In some such constructs, the nucleic acid construct is the nucleic acid construct for homology-independent targeted integration into the target genomic locus, the retinoschisin protein or fragment thereof is a human retinoschisin protein or fragment thereof, the coding sequence for the retinoschisin protein or fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or fragment thereof, the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, and the nuclease target sequence in the nucleic acid construct is identical to a nuclease target sequence for integration into the target genomic locus, wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation.

[0031] In some such constructs, the nucleic acid construct is the nucleic acid construct for homologous recombination with the target genomic locus, the retinoschisin protein or fragment thereof is a human retinoschisin protein or fragment thereof, the coding sequence for the retinoschisin protein or fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or fragment thereof, the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, and each homology arm is between about 25 nucleotides and about 2.5 kb in length.

[0032] In another aspect, provided are vectors comprising any of the above nucleic acid constructs for homology-independent targeted integration. Some such vectors are viral vectors. Some such vectors are adeno-associated virus (AAV) vectors. Optionally, the AAV comprises a single-stranded genome (ssAAV). Optionally, the AAV comprises a self-complementary genome (scAAV). Optionally, the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, or AAV7m8.

[0033] In some such vectors, the vector does not comprise a promoter that drives expression

of the retinoschisin protein or fragment thereof. In some such vectors, the vector does not comprise a homology arm.

[0034] In another aspect, provided are lipid nanoparticles comprising any of the above nucleic acid constructs for homology-independent targeted integration.

[0035] In another aspect, provided are cells comprising any of the above nucleic acid constructs for homology-independent targeted integration. Some such cells are *in vitro*. Some such cells are *in vivo*. Some such cells are mammalian cells. Some such cells are human cells. Some such cells are retinal cells.

[0036] In some such cells, the cell expresses the retinoschisin protein or fragment thereof. In some such cells, the nucleic acid construct is genomically integrated at the target genomic locus. Optionally, the target genomic locus is an endogenous *RS1* locus. Optionally, the nucleic acid construct is genomically integrated in intron 1 of the endogenous *RS1* locus. Optionally, endogenous *RS1* exon 1 splices into the coding sequence for the retinoschisin protein or fragment thereof in the nucleic acid construct. Optionally, the modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4.

[0037] In some such cells, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. Optionally, the integration of the nucleic acid construct into the endogenous *RS1* locus reduces or eliminates expression of the endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or fragment thereof encoded by the nucleic acid construct. Optionally, the endogenous *RS1* locus comprises a mutated *RS1* gene comprising a mutation that causes X-linked juvenile retinoschisis, and expression of the genomically integrated nucleic acid construct reduces or eliminates expression of the mutated *RS1* gene.

[0038] In another aspect, provided are compositions for use in expressing retinoschisin in a cell or for use in integrating a coding sequence for a retinoschisin protein or fragment thereof into a target genomic locus in a cell. Some such compositions comprise: (a) a nucleic acid construct comprising the coding sequence for the retinoschisin protein or fragment thereof for integration into the target genomic locus; and (b) a nuclease agent or a nucleic acid encoding the

nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus.

[0039] Some such compositions comprise: (a) any of the above nucleic acid constructs for homology-independent targeted integration; and (b) a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus. Optionally, the nuclease target sequence in the target genomic locus is identical to the nuclease target sequence in the nucleic acid construct. Optionally, the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation.

[0040] Some such compositions comprise: (a) any of the above bidirectional nucleic acid constructs; and (b) a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus.

[0041] In some such compositions, the target genomic locus is in an *RS1* gene. Optionally, the nuclease target sequence in the target genomic locus is in the first intron in the *RS1* gene. Optionally, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. Optionally, the integration of the nucleic acid construct into the endogenous *RS1* locus in the cell reduces or eliminates expression of the endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or fragment thereof encoded by the nucleic acid construct.

[0042] In some such compositions, the nuclease agent is a Cas protein and a guide RNA, and the nuclease target sequence is a guide RNA target sequence. Optionally, the Cas protein is Cas9. Optionally, the composition comprises the guide RNA and a messenger RNA encoding the Cas protein. Optionally, the guide RNA and the messenger RNA encoding the Cas protein are in a lipid nanoparticle. Optionally, the composition comprises a DNA encoding the Cas protein and a DNA encoding the guide RNA. Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in one or more viral vectors. Optionally, the one or more viral vectors are adeno-associated virus (AAV) viral vectors. Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in a single viral vector (e.g., a single AAV vector). Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in a separate viral vectors (e.g., a separate AAV vectors).

[0043] In some such compositions, the nucleic acid construct is in a viral vector. Optionally, the viral vector is an adeno-associated virus (AAV) viral vector. Optionally, the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, or AAV7m8.

[0044] Also provided are compositions comprising a guide RNA or a DNA encoding the guide RNA, wherein the guide RNA comprises a DNA-targeting segment that targets a guide RNA target sequence in an *RS1* gene, and wherein the guide RNA binds to a Cas protein and targets the Cas protein to the guide RNA target sequence in the *RS1* gene.

[0045] In some such compositions or compositions for use, the composition further comprises the Cas protein or a nucleic acid encoding the Cas protein. Optionally, the Cas protein is a Cas9 protein. Optionally, the Cas protein is derived from a *Streptococcus pyogenes* Cas9 protein. In some such compositions or compositions for use, the composition comprises the Cas protein in the form of a protein.

[0046] In some such compositions or compositions for use, the composition comprises the nucleic acid encoding the Cas protein, wherein the nucleic acid comprises a DNA encoding the Cas protein, optionally wherein the composition comprises the DNA encoding the guide RNA. Optionally, the composition comprises the nucleic acid encoding the Cas protein, wherein the nucleic acid comprises a DNA encoding the Cas protein, wherein the composition comprises the DNA encoding the guide RNA, and wherein the DNA encoding the Cas protein and the DNA encoding the guide RNA are in one or more viral vectors. Optionally, the one or more viral vectors are adeno-associated virus (AAV) viral vectors. Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in a single viral vector (e.g., a single AAV vector). Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in a separate viral vectors (e.g., a separate AAV vectors). Optionally, the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, or AAV7m8.

[0047] In some such compositions or compositions for use, the composition comprises the nucleic acid encoding the Cas protein, wherein the nucleic acid comprises a messenger RNA encoding the Cas protein, optionally wherein the composition comprises the guide RNA in the form of RNA. In some such compositions or compositions for use, the composition comprises the nucleic acid encoding the Cas protein, wherein the nucleic acid comprises a messenger RNA encoding the Cas protein, wherein the composition comprises the guide RNA in the form of RNA, and wherein the guide RNA and the messenger RNA encoding the Cas protein are in a

lipid nanoparticle.

[0048] In some such compositions or compositions for use, the messenger RNA encoding the Cas protein comprises at least one modification. Optionally, the messenger RNA encoding the Cas protein is modified to comprise a modified uridine at one or more or all uridine positions. Optionally, the modified uridine is pseudouridine. Optionally, the messenger RNA encoding the Cas protein is fully substituted with pseudouridine. In some such compositions or compositions for use, the messenger RNA encoding the Cas protein comprises a 5' cap. In some such compositions or compositions for use, the messenger RNA encoding the Cas protein comprises a poly(A) tail. In some such compositions or compositions for use, the messenger RNA encoding the Cas protein comprises the sequence set forth in SEQ ID NO: 6243 or 6245.

[0049] In some such compositions or compositions for use, the nucleic acid encoding the Cas protein is codon-optimized for expression in a mammalian cell or a human cell. In some such compositions or compositions for use, the Cas protein comprises the sequence set forth in SEQ ID NO: 27, 6242, or 6246.

[0050] In some such compositions or compositions for use, the guide RNA target sequence is in an intron of the *RS1* gene. Optionally, the intron is the first intron of the *RS1* gene.

[0051] In some such compositions or compositions for use, the *RS1* gene is a human *RS1* gene.

[0052] In some such compositions or compositions for use, the DNA-targeting segment comprises: (a) at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence set forth in any one of SEQ ID NOS: 3148-6241; (b) at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence set forth in any one of SEQ ID NOS: 3148-4989; (c) at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351; (d) at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304; or (e) at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence set forth in any one of SEQ ID NOS: 4990-6241.

[0053] In some such compositions or compositions for use, the DNA-targeting segment is: (a) at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence set forth in any one of SEQ

ID NOS: 3148-6241; (b) at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence set forth in any one of SEQ ID NOS: 3148-4989; (c) at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351; (d) at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304; or (e) at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence set forth in any one of SEQ ID NOS: 4990-6241.

[0054] In some such compositions or compositions for use, the DNA-targeting segment comprises, consists essentially of, or consists of the sequence set forth in: (a) any one of SEQ ID NOS: 3148-6241; (b) any one of SEQ ID NOS: 3148-4989; (c) any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351; (d) any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304; or (e) any one of SEQ ID NOS: 4990-6241.

[0055] In some such compositions or compositions for use, the DNA-targeting segment comprises at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304.

[0056] In some such compositions or compositions for use, the DNA-targeting segment is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304.

[0057] In some such compositions or compositions for use, the DNA-targeting segment comprises, consists essentially of, or consist of the sequence set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304.

[0058] In some such compositions or compositions for use, the composition comprises the guide RNA in the form of RNA. In some such compositions or compositions for use, the composition comprises the DNA encoding the guide RNA.

[0059] In some such compositions or compositions for use, the guide RNA comprises at least one modification. In some such compositions or compositions for use, the at least one modification comprises a 2'-O-methyl-modified nucleotide. In some such compositions or

compositions for use, the at least one modification comprise a phosphorothioate bond between nucleotides. In some such compositions or compositions for use, the at least one modification comprise a modification at one or more of the first five nucleotides at the 5' end of the guide RNA. In some such compositions or compositions for use, the at least one modification comprises a modification at one or more of the last five nucleotides at the 3' end of the guide RNA. In some such compositions or compositions for use, the at least one modification comprises phosphorothioate bonds between the first four nucleotides at the 5' end of the guide RNA. In some such compositions or compositions for use, the at least one modification comprises phosphorothioate bonds between the last four nucleotides at the 3' end of the guide RNA. In some such compositions or compositions for use, the at least one modification comprises 2'-O-methyl-modified nucleotides at the first three nucleotides at the 5' end of the guide RNA. In some such compositions or compositions for use, the at least one modification comprises 2'-O-methyl-modified nucleotides at the last three nucleotides at the 3' end of the guide RNA. In some such compositions or compositions for use, the at least one modification comprises: (i) phosphorothioate bonds between the first four nucleotides at the 5' end of the guide RNA; (ii) phosphorothioate bonds between the last four nucleotides at the 3' end of the guide RNA; (iii) 2'-O-methyl-modified nucleotides at the first three nucleotides at the 5' end of the guide RNA; and (iv) 2'-O-methyl-modified nucleotides at the last three nucleotides at the 3' end of the guide RNA. In some such compositions or compositions for use, the guide RNA comprises the modified nucleotides of SEQ ID NO: 44.

[0060] In some such compositions or compositions for use, the guide RNA is a single guide RNA (sgRNA). Optionally, the guide RNA comprises, consists essentially of, or consists of the sequence set forth in any one of SEQ ID NOS: 33-39 and 53. In some such compositions or compositions for use, the guide RNA is a dual guide RNA (dgRNA) comprising two separate RNA molecules comprising a CRISPR RNA (crRNA) and a trans-activating crRNA (tracrRNA). Optionally, the crRNA comprises the sequence set forth in any one of SEQ ID NOS: 29 and 52. Optionally, the tracrRNA comprises the sequence set forth in any one of SEQ ID NOS: 30-32.

[0061] In some such compositions or compositions for use, the composition is associated with a lipid nanoparticle, optionally wherein the composition comprises the guide RNA. In some such compositions or compositions for use, the DNA encoding the guide RNA is in a viral vector. In some such compositions or compositions for use, the viral vector is an adeno-

associated virus (AAV) viral vector. Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in a single viral vector (e.g., a single AAV vector). Optionally, the DNA encoding the Cas protein and the DNA encoding the guide RNA are in a separate viral vectors (e.g., a separate AAV vectors). Optionally, the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, or AAV7m8.

[0062] In some such compositions or compositions for use, the composition is a pharmaceutical composition comprising a pharmaceutically acceptable carrier.

[0063] In some such compositions or compositions for use, the composition further comprises a second guide RNA or a DNA encoding the second guide RNA, wherein the second guide RNA comprises a DNA-targeting segment that targets a second guide RNA target sequence in the *RS1* gene, and wherein the second guide RNA binds to the Cas protein and targets the Cas protein to the second guide RNA target sequence in the *RS1* gene.

[0064] Also provided are cells comprising any of the above compositions or compositions for use. Optionally, the cell is *in vitro*. Optionally, the cell is *in vivo*. Some such cells are mammalian cells. Optionally, the cell is a human cell. Optionally, the cell is a retinal cell.

[0065] In some such cells, the cell expresses the first retinoschisin protein or fragment thereof or the second retinoschisin protein or fragment thereof. In some such cells, the nucleic acid construct is genomically integrated at the target genomic locus. Optionally, the target genomic locus is an endogenous *RS1* locus. Optionally, the nucleic acid construct is genomically integrated in intron 1 of the endogenous *RS1* locus. Optionally, endogenous *RS1* exon 1 splices into the first coding sequence or the second coding sequence of the nucleic acid construct. Optionally, the modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4.

[0066] In some such cells, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. Optionally, the integration of the nucleic acid construct into the endogenous *RS1* locus reduces or eliminates expression of the endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or fragment thereof encoded by the nucleic acid construct.

Optionally, the endogenous *RS1* locus comprises a mutated *RS1* gene comprising a mutation that causes X-linked juvenile retinoschisis, and expression of the genomically integrated nucleic acid construct reduces or eliminates expression of the mutated *RS1* gene.

[0067] In another aspect, provided are methods of integrating a coding sequence for a retinoschisin protein or fragment thereof into a target genomic locus and expressing the retinoschisin protein or fragment thereof in a cell. Some such methods comprise administering any of the above nucleic acid constructs, vectors, lipid nanoparticles, or compositions to the cell, wherein the coding sequence is integrated into the target genomic locus and the retinoschisin protein or fragment thereof is expressed in the cell. Optionally, the cell is a mammalian cell. Optionally, the cell is a human cell. Optionally, the cell is a retinal cell. Optionally, the cell is *in vitro*. Optionally, the cell is *in vivo*. Optionally, the cell is a retinal cell *in vivo*, and the administering comprises subretinal injection or intravitreal injection.

[0068] In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered simultaneously. In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered sequentially in any order. Optionally, the nucleic acid construct is administered prior to the nuclease agent or the nucleic acid encoding the nuclease agent. Optionally, the nucleic acid construct is administered subsequent to the nuclease agent or the nucleic acid encoding the nuclease agent. Optionally, the time between the sequential administration is about 2 hours to about 48 hours. In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered in the same delivery vehicle. In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered in different delivery vehicles.

[0069] In some such methods, the target genomic locus is in an endogenous *RS1* gene. Optionally, the nuclease target sequence in the target genomic locus is in the first intron in the endogenous *RS1* gene. Optionally, the nucleic acid construct is genomically integrated in intron 1 of the endogenous *RS1* locus, and wherein endogenous *RS1* exon 1 splices into the coding sequence for the retinoschisin protein or fragment thereof in the nucleic acid construct. Optionally, the modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about

90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4. In some such methods, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. Optionally, the integration of the nucleic acid construct into the endogenous *RS1* locus reduces or eliminates expression of the endogenous retinoschisin protein from the endogenous *RS1* locus and replaces it with expression of the retinoschisin protein or fragment thereof encoded by the nucleic acid construct.

[0070] In another aspect, provided are methods of treating a subject with X-linked juvenile retinoschisis. Some such methods can comprise administering any of the above nucleic acid constructs, vectors, lipid nanoparticles, or compositions to the subject, wherein the nucleic acid construct is integrated into and expressed from the target genomic locus in one or more retinal cells of the subject, and wherein a therapeutically effective level of retinoschisin expression is achieved in the subject. In some such methods, the subject is a human. In some such methods, the subject has an endogenous *RS1* gene comprising at least one mutation associated with or that causes X-linked juvenile retinoschisis. Optionally, the mutation is a R141C mutation. In some such methods, the administering comprises subretinal injection or intravitreal injection. In some such methods, integration of the nucleic acid construct results in retinal structural restoration.

[0071] In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered simultaneously. In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered sequentially in any order. Optionally, the nucleic acid construct is administered prior to the nuclease agent or the nucleic acid encoding the nuclease agent. Optionally, the nucleic acid construct is administered subsequent to the nuclease agent or the nucleic acid encoding the nuclease agent. Optionally, the time between the sequential administration is about 2 hours to about 48 hours. In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered in the same delivery vehicle. In some such methods, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent are administered in different delivery vehicles.

[0072] In some such methods, the target genomic locus is in an endogenous *RS1* gene.

Optionally, the nuclease target sequence in the target genomic locus is in the first intron in the endogenous *RS1* gene. Optionally, the nucleic acid construct is genomically integrated in intron 1 of the endogenous *RS1* locus, and wherein endogenous *RS1* exon 1 splices into the coding sequence for the retinoschisin protein or fragment thereof in the nucleic acid construct. Optionally, the modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4. In some such methods, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. Optionally, the integration of the nucleic acid construct into the endogenous *RS1* locus reduces or eliminates expression of the endogenous retinoschisin protein from the endogenous *RS1* locus and replaces it with expression of the retinoschisin protein or fragment thereof encoded by the nucleic acid construct.

[0073] In another aspect, provided are methods of modifying an *RS1* gene in a cell. Some such methods comprise administering to the cell any of the above compositions comprising the guide RNA or the DNA encoding the guide RNA and the Cas protein or the nucleic acid encoding the Cas protein, wherein the guide RNA binds to the Cas protein and targets the Cas protein to the guide RNA target sequence in the *RS1* gene, and the Cas protein cleaves the guide RNA target sequence. In some such methods, the cell is a mammalian cell. Optionally, the cell is a human cell. Optionally, the cell is a retinal cell. Optionally, the cell is *in vitro*. Optionally, the cell is *in vivo*. In some such methods, the cell is a retinal cell, and the administering comprises subretinal injection or intravitreal injection. In some such methods, the guide RNA target sequence is in the first intron in the *RS1* gene.

BRIEF DESCRIPTION OF THE FIGURES

[0074] **Figure 1** (not to scale) shows a schematic of the murine *Rs1* locus, including the location of the R141C mutation associated with X-linked juvenile retinoschisis (XLRS) and the insertion site for a nucleic acid construct comprising exons 2-6 of human *RS1*.

[0075] **Figure 2** shows an alignment of mouse retinoschisin, human retinoschisin, human retinoschisin with an R141C mutation, mouse retinoschisin with an R141C mutation, and a

mouse/human retinoschisin hybrid expressed upon integration of a nucleic acid construct comprising exons 2-6 of human *RS1* into intron 1 of the mouse *Rs1* locus.

[0076] **Figure 3A** (not to scale) shows a schematic of a bidirectional nucleic acid construct comprising a first segment comprising a splice acceptor (A), exons 2-6 of human *RS1*, and bovine growth hormone (bGH) polyA and a second segment comprising the reverse complement of SV40 polyA, the reverse complement of exons 2-6 of human *RS1*, and the reverse complement of a splice acceptor (A). The bidirectional construct also comprises a U6 promoter operably linked to a sequence encoding a guide RNA targeting intron 1 of the murine *Rs1* locus in between the two human *RS1* segments. The horizontal arrows flanking the star represent the next generation targeted resequencing amplicons designed for NGS. A bidirectional ssAAV construct is shown at the top, and a bidirectional scAAV construct is shown at the bottom.

[0077] **Figure 3B** (not to scale) shows a schematic for a homology-independent targeted integration nucleic acid construct comprising a splice acceptor (A), exons 2-6 of human *RS1*, and a polyA sequence. The construct also comprises a U6 promoter operably linked to a sequence encoding a guide RNA targeting intron 1 of the murine *Rs1* locus downstream of the human *RS1* segment. The horizontal arrows flanking the star represent the next generation targeted resequencing amplicons designed for NGS.

[0078] **Figure 4** shows scoring of retinal cavities shown in optical coherence tomography (OCT) scans in eyes from $Rosa^{Cas9/+}$; $Rs1^{R141C/Y}$ mice injected with *RS1* viral vector version 1, *RS1* viral vector version 2, or *RS1* viral vector version 3. A score of 1 was assigned if there were 1-4 cavities on at least one individual image. A score of 2 was assigned if there were ≥ 4 cavities on at least one individual image, but the cavities were not fused. A score of 3 was assigned if there were fused cavities on at least one individual image. A score of 4 was assigned if there were fused cavities on at least one individual image and the retina was stretched. The average scores for each treatment group were compared with a control group containing the pooled non-treated eyes by nonparametric Kruskal–Wallis one-way analysis of variance and Post hoc test Dunn's multiple comparisons test.

[0079] **Figure 5** shows NGS results from mouse retina samples in eyes from $Rosa^{Cas9/+}$; $Rs1^{R141C/Y}$ mice injected with *RS1* viral vector version 1 (pssAAV mhRS1-sgu), *RS1* viral vector version 2 (pscAAV rs1_tandem), or *RS1* viral vector version 3 (pssAAV hRs1_HITI). Read counts for the four expected sequence variants are shown: (1) WT mouse, the mouse reference

sequence not containing the R141C mutant; (2) mutant mouse, the mouse reference sequence harboring the R141C mutant; (3) humanized transcript 1, the human reference sequence; and (4) humanized transcript 2, the mouse codon-optimized human reference sequence. Next generation targeted resequencing amplicons were designed for the regions depicted in Figure 3 (horizontal arrows). mRNA from the mouse retinas was used to generate cDNA to act as a template for next generation sequencing (NGS) amplification.

[0080] **Figures 6A** and **6B** show NGS results from mouse retina samples in eyes from *Rosa*$^{Cas9/+}$; *Rs1*$^{R141C/Y}$ mice injected with *RS1* viral vector version 1 (mhRS1-sgu), *RS1* viral vector version 2 (pscAAV_rs1_tandem), or *RS1* viral vector version 3 (hRs1_cDNA HITI). For these NGS results, a separate amplicon was used to amplify the *Rs1* intron 1 guide RNA target sequence. Reads that matched the mouse reference sequence or contained non-homologous end joining were quantified to assess how often the guide RNA cut without making an insertion.

[0081] **Figures 7A-7C** show NGS results from mouse retina samples in eyes from *Rosa*$^{Cas9/+}$; *Rs1*$^{R141C/Y}$ mice injected with *RS1* viral vector version 1 (pssAAV mhRS1-sgu; **Figure 7A**), *RS1* viral vector version 2 (pscAAV rs1_tandem; **Figure 7B**), or *RS1* viral vector version 3 (pssAAV hRs1_HITI; **Figure 7C**). Read counts for the four expected sequence variants are shown: (1) WT mouse, the mouse reference sequence not containing the R141C mutant; (2) mutant mouse, the mouse reference sequence harboring the R141C mutant; (3) humanized transcript 1, the human reference sequence; and (4) humanized transcript 2, the mouse codon-optimized human reference sequence. Next generation targeted resequencing amplicons were designed for the regions depicted in Figure 3 (horizontal arrows). mRNA from the mouse retinas was used to generate cDNA to act as a template for next generation sequencing (NGS) amplification. Reads that matched the mouse reference sequence or contained non-homologous end joining were quantified to assess how often the guide RNA cut without making an insertion.

[0082] **Figures 8A** and **8B** show RT-qPCR results from human retinoblastoma cells treated with *RS1* viral vector version 1 (pssAAV mhRS1-sgu; **Figure 8A**) or *RS1* viral vector version 2 (pscAAV rs1_tandem; **Figure 8B**) two hours before treatment with lipid nanoparticles formulated with Cas9 mRNA and one of six guide RNAs targeted to human *RS1* intron 1. Delta Ct values are shown (the lower the number, the higher the expression). "Ho" refers to human reference sequence, and "Mo" refers to human reference sequence codon-optimized for mouse expression.

[0083] **Figures 9A** and **9B** show RT-qPCR results from human retinoblastoma cells treated with *RS1* viral vector version 1 (pssAAV mhRS1-sgu; **Figure 9A**) or *RS1* viral vector version 2 (pscAAV rs1_tandem; **Figure 9B**) two hours after treatment with lipid nanoparticles formulated with Cas9 mRNA and one of six guide RNAs targeted to human *RS1* intron 1. Delta Ct values are shown (the lower the number, the higher the expression). "Ho" refers to human reference sequence, and "Mo" refers to human reference sequence codon-optimized for mouse expression.

[0084] **Figure 10** shows a schematic for a nucleic acid construct for homologous recombination comprising a splice acceptor (A), exons 2-6 of human *RS1*, and a polyA sequence. The construct also comprises a U6 promoter operably linked to a sequence encoding a guide RNA targeting intron 1 of the murine *Rs1* locus downstream of the human *RS1* segment. The construct also comprises upstream and downstream homology arms (HA). The horizontal arrows flanking the star represent the next generation targeted resequencing amplicons designed for NGS.

DEFINITIONS

[0085] The terms "protein," "polypeptide," and "peptide," used interchangeably herein, include polymeric forms of amino acids of any length, including coded and non-coded amino acids and chemically or biochemically modified or derivatized amino acids. The terms also include polymers that have been modified, such as polypeptides having modified peptide backbones. The term "domain" refers to any part of a protein or polypeptide having a particular function or structure.

[0086] The terms "nucleic acid" and "polynucleotide," used interchangeably herein, include polymeric forms of nucleotides of any length, including ribonucleotides, deoxyribonucleotides, or analogs or modified versions thereof. They include single-, double-, and multi-stranded DNA or RNA, genomic DNA, cDNA, DNA-RNA hybrids, and polymers comprising purine bases, pyrimidine bases, or other natural, chemically modified, biochemically modified, non-natural, or derivatized nucleotide bases.

[0087] The term "genomically integrated" refers to a nucleic acid that has been introduced into a cell such that the nucleotide sequence integrates into the genome of the cell. Any protocol may be used for the stable incorporation of a nucleic acid into the genome of a cell.

[0088] The term "expression vector" or "expression construct" or "expression cassette" refers to a recombinant nucleic acid containing a desired coding sequence operably linked to appropriate nucleic acid sequences necessary for the expression of the operably linked coding sequence in a particular host cell or organism. Nucleic acid sequences necessary for expression in prokaryotes usually include a promoter, an operator (optional), and a ribosome binding site, as well as other sequences. Eukaryotic cells are generally known to utilize promoters, enhancers, and termination and polyadenylation signals, although some elements may be deleted and other elements added without sacrificing the necessary expression.

[0089] The term "viral vector" refers to a recombinant nucleic acid that includes at least one element of viral origin and includes elements sufficient for or permissive of packaging into a viral vector particle. The vector and/or particle can be utilized for the purpose of transferring DNA, RNA, or other nucleic acids into cells either *ex vivo* or *in vivo*. Numerous forms of viral vectors are known.

[0090] The term "isolated" with respect to proteins, nucleic acids, and cells includes proteins, nucleic acids, and cells that are relatively purified with respect to other cellular or organism components that may normally be present *in situ*, up to and including a substantially pure preparation of the protein, nucleic acid, or cell. The term "isolated" may include proteins and nucleic acids that have no naturally occurring counterpart or proteins or nucleic acids that have been chemically synthesized and are thus substantially uncontaminated by other proteins or nucleic acids. The term "isolated" may include proteins, nucleic acids, or cells that have been separated or purified from most other cellular components or organism components with which they are naturally accompanied (e.g., but not limited to, other cellular proteins, nucleic acids, or cellular or extracellular components).

[0091] The term "wild type" includes entities having a structure and/or activity as found in a normal (as contrasted with mutant, diseased, altered, or so forth) state or context. Wild type genes and polypeptides often exist in multiple different forms (e.g., alleles).

[0092] The term "endogenous sequence" refers to a nucleic acid sequence that occurs naturally within a cell or animal. For example, an endogenous *RS1* sequence of an animal refers to a native *RS1* sequence that naturally occurs at the *RS1* locus in the animal.

[0093] "Exogenous" molecules or sequences include molecules or sequences that are not normally present in a cell in that form. Normal presence includes presence with respect to the

particular developmental stage and environmental conditions of the cell. An exogenous molecule or sequence, for example, can include a mutated version of a corresponding endogenous sequence within the cell, such as a humanized version of the endogenous sequence, or can include a sequence corresponding to an endogenous sequence within the cell but in a different form (i.e., not within a chromosome). In contrast, endogenous molecules or sequences include molecules or sequences that are normally present in that form in a particular cell at a particular developmental stage under particular environmental conditions.

[0094] The term "heterologous" when used in the context of a nucleic acid or a protein indicates that the nucleic acid or protein comprises at least two segments that do not naturally occur together in the same molecule. For example, the term "heterologous," when used with reference to segments of a nucleic acid or segments of a protein, indicates that the nucleic acid or protein comprises two or more sub-sequences that are not found in the same relationship to each other (e.g., joined together) in nature. As one example, a "heterologous" region of a nucleic acid vector is a segment of nucleic acid within or attached to another nucleic acid molecule that is not found in association with the other molecule in nature. For example, a heterologous region of a nucleic acid vector could include a coding sequence flanked by sequences not found in association with the coding sequence in nature. Likewise, a "heterologous" region of a protein is a segment of amino acids within or attached to another peptide molecule that is not found in association with the other peptide molecule in nature (e.g., a fusion protein, or a protein with a tag). Similarly, a nucleic acid or protein can comprise a heterologous label or a heterologous secretion or localization sequence.

[0095] "Codon optimization" takes advantage of the degeneracy of codons, as exhibited by the multiplicity of three-base pair codon combinations that specify an amino acid, and generally includes a process of modifying a nucleic acid sequence for enhanced expression in particular host cells by replacing at least one codon of the native sequence with a codon that is more frequently or most frequently used in the genes of the host cell while maintaining the native amino acid sequence. For example, a nucleic acid encoding a Cas9 protein can be modified to substitute codons having a higher frequency of usage in a given prokaryotic or eukaryotic cell, including a bacterial cell, a yeast cell, a human cell, a non-human cell, a mammalian cell, a rodent cell, a mouse cell, a rat cell, a hamster cell, or any other host cell, as compared to the naturally occurring nucleic acid sequence. Codon usage tables are readily available, for example,

at the "Codon Usage Database." These tables can be adapted in a number of ways. *See* Nakamura et al. (2000) *Nucleic Acids Research* 28:292, herein incorporated by reference in its entirety for all purposes. Computer algorithms for codon optimization of a particular sequence for expression in a particular host are also available (*see, e.g.*, Gene Forge).

[0096] The term "locus" refers to a specific location of a gene (or significant sequence), DNA sequence, polypeptide-encoding sequence, or position on a chromosome of the genome of an organism. For example, an "*RS1* locus" may refer to the specific location of an *RS1* gene, *RS1* DNA sequence, retinoschisin-encoding sequence, or *RS1* position on a chromosome of the genome of an organism that has been identified as to where such a sequence resides. An "*RS1* locus" may comprise a regulatory element of an *RS1* gene, including, for example, an enhancer, a promoter, 5' and/or 3' untranslated region (UTR), or a combination thereof.

[0097] The term "gene" refers to DNA sequences in a chromosome that may contain, if naturally present, at least one coding and at least one non-coding region. The DNA sequence in a chromosome that codes for a product (e.g., but not limited to, an RNA product and/or a polypeptide product) can include the coding region interrupted with non-coding introns and sequence located adjacent to the coding region on both the 5' and 3' ends such that the gene corresponds to the full-length mRNA (including the 5' and 3' untranslated sequences). Additionally, other non-coding sequences including regulatory sequences (e.g., but not limited to, promoters, enhancers, and transcription factor binding sites), polyadenylation signals, internal ribosome entry sites, silencers, insulating sequence, and matrix attachment regions may be present in a gene. These sequences may be close to the coding region of the gene (e.g., but not limited to, within 10 kb) or at distant sites, and they influence the level or rate of transcription and translation of the gene.

[0098] The term "allele" refers to a variant form of a gene. Some genes have a variety of different forms, which are located at the same position, or genetic locus, on a chromosome. A diploid organism has two alleles at each genetic locus. Each pair of alleles represents the genotype of a specific genetic locus. Genotypes are described as homozygous if there are two identical alleles at a particular locus and as heterozygous if the two alleles differ.

[0099] A "promoter" is a regulatory region of DNA usually comprising a TATA box capable of directing RNA polymerase II to initiate RNA synthesis at the appropriate transcription initiation site for a particular polynucleotide sequence. A promoter may additionally comprise

other regions which influence the transcription initiation rate. The promoter sequences disclosed herein modulate transcription of an operably linked polynucleotide. A promoter can be active in one or more of the cell types disclosed herein (e.g., a eukaryotic cell, a non-human mammalian cell, a human cell, a rodent cell, a pluripotent cell, a one-cell stage embryo, a differentiated cell, or a combination thereof). A promoter can be, for example, a constitutively active promoter, a conditional promoter, an inducible promoter, a temporally restricted promoter (e.g., a developmentally regulated promoter), or a spatially restricted promoter (e.g., a cell-specific or tissue-specific promoter). Examples of promoters can be found, for example, in WO 2013/176772, herein incorporated by reference in its entirety for all purposes.

[00100] A constitutive promoter is one that is active in all tissues or particular tissues at all developing stages. Examples of constitutive promoters include the human cytomegalovirus immediate early (hCMV), mouse cytomegalovirus immediate early (mCMV), human elongation factor 1 alpha (hEF1α), mouse elongation factor 1 alpha (mEF1α), mouse phosphoglycerate kinase (PGK), chicken beta actin hybrid (CAG or CBh), SV40 early, and beta 2 tubulin promoters.

[00101] Examples of inducible promoters include, for example, chemically regulated promoters and physically-regulated promoters. Chemically regulated promoters include, for example, alcohol-regulated promoters (e.g., an alcohol dehydrogenase (alcA) gene promoter), tetracycline-regulated promoters (e.g., a tetracycline-responsive promoter, a tetracycline operator sequence (tetO), a tet-On promoter, or a tet-Off promoter), steroid regulated promoters (e.g., a rat glucocorticoid receptor, a promoter of an estrogen receptor, or a promoter of an ecdysone receptor), or metal-regulated promoters (e.g., a metalloprotein promoter). Physically regulated promoters include, for example temperature-regulated promoters (e.g., a heat shock promoter) and light-regulated promoters (e.g., a light-inducible promoter or a light-repressible promoter).

[00102] Tissue-specific promoters can be, for example, neuron-specific promoters, glia-specific promoters, muscle cell-specific promoters, heart cell-specific promoters, kidney cell-specific promoters, bone cell-specific promoters, endothelial cell-specific promoters, or immune cell-specific promoters (e.g., a B cell promoter or a T cell promoter).

[00103] Developmentally regulated promoters include, for example, promoters active only during an embryonic stage of development, or only in an adult cell.

[00104] "Operable linkage" or being "operably linked" includes juxtaposition of two or more components (e.g., a promoter and another sequence element) such that both components function normally and allow the possibility that at least one of the components can mediate a function that is exerted upon at least one of the other components. For example, a promoter can be operably linked to a coding sequence if the promoter controls the level of transcription of the coding sequence in response to the presence or absence of one or more transcriptional regulatory factors. Operable linkage can include such sequences being contiguous with each other or acting *in trans* (e.g., a regulatory sequence can act at a distance to control transcription of the coding sequence).

[00105] "Complementarity" of nucleic acids means that a nucleotide sequence in one strand of nucleic acid, due to orientation of its nucleobase groups, forms hydrogen bonds with another sequence on an opposing nucleic acid strand. The complementary bases in DNA are typically A with T and C with G. In RNA, they are typically C with G and U with A. Complementarity can be perfect or substantial/sufficient. Perfect complementarity between two nucleic acids means that the two nucleic acids can form a duplex in which every base in the duplex is bonded to a complementary base by Watson-Crick pairing. "Substantial" or "sufficient" complementary means that a sequence in one strand is not completely and/or perfectly complementary to a sequence in an opposing strand, but that sufficient bonding occurs between bases on the two strands to form a stable hybrid complex in set of hybridization conditions (e.g., salt concentration and temperature). Such conditions can be predicted by using the sequences and standard mathematical calculations to predict the Tm (melting temperature) of hybridized strands, or by empirical determination of Tm by using routine methods. Tm includes the temperature at which a population of hybridization complexes formed between two nucleic acid strands are 50% denatured (i.e., a population of double-stranded nucleic acid molecules becomes half dissociated into single strands). At a temperature below the Tm, formation of a hybridization complex is favored, whereas at a temperature above the Tm, melting or separation of the strands in the hybridization complex is favored. Tm may be estimated for a nucleic acid having a known G+C content in an aqueous 1 M NaCl solution by using, e.g., Tm=81.5+0.41(% G+C), although other known Tm computations consider nucleic acid structural characteristics.

[00106] Hybridization requires that the two nucleic acids contain complementary sequences, although mismatches between bases are possible. The conditions appropriate for hybridization between two nucleic acids depend on the length of the nucleic acids and the degree of

complementation, variables which are well known. The greater the degree of complementation between two nucleotide sequences, the greater the value of the melting temperature (Tm) for hybrids of nucleic acids having those sequences. For hybridizations between nucleic acids with short stretches of complementarity (e.g. complementarity over 35 or fewer, 30 or fewer, 25 or fewer, 22 or fewer, 20 or fewer, or 18 or fewer nucleotides) the position of mismatches becomes important (*see* Sambrook et al., supra, 11.7-11.8). Typically, the length for a hybridizable nucleic acid is at least about 10 nucleotides. Illustrative minimum lengths for a hybridizable nucleic acid include at least about 15 nucleotides, at least about 20 nucleotides, at least about 22 nucleotides, at least about 25 nucleotides, and at least about 30 nucleotides. Furthermore, the temperature and wash solution salt concentration may be adjusted as necessary according to factors such as length of the region of complementation and the degree of complementation.

[00107] The sequence of polynucleotide need not be 100% complementary to that of its target nucleic acid to be specifically hybridizable. Moreover, a polynucleotide may hybridize over one or more segments such that intervening or adjacent segments are not involved in the hybridization event (e.g., a loop structure or hairpin structure). A polynucleotide (e.g., gRNA) can comprise at least 70%, at least 80%, at least 90%, at least 95%, at least 99%, or 100% sequence complementarity to a target region within the target nucleic acid sequence to which they are targeted. For example, a gRNA in which 18 of 20 nucleotides are complementary to a target region, and would therefore specifically hybridize, would represent 90% complementarity. In this example, the remaining noncomplementary nucleotides may be clustered or interspersed with complementary nucleotides and need not be contiguous to each other or to complementary nucleotides.

[00108] Percent complementarity between particular stretches of nucleic acid sequences within nucleic acids can be determined routinely using BLAST programs (basic local alignment search tools) and PowerBLAST programs (Altschul et al. (1990) *J. Mol. Biol.* 215:403-410; Zhang and Madden (1997) *Genome Res.* 7:649-656) or by using the Gap program (Wisconsin Sequence Analysis Package, Version 8 for Unix, Genetics Computer Group, University Research Park, Madison Wis.), using default settings, which uses the algorithm of Smith and Waterman (Adv. Appl. Math., 1981, 2, 482-489).

[00109] The methods and compositions provided herein employ a variety of different components. Some components throughout the description can have active variants and

fragments. Such components include, for example, Cas proteins, CRISPR RNAs, tracrRNAs, and guide RNAs. Biological activity for each of these components is described elsewhere herein. The term "functional" refers to the innate ability of a protein or nucleic acid (or a fragment or variant thereof) to exhibit a biological activity or function. Such biological activities or functions can include, for example, the ability of a Cas protein to bind to a guide RNA and to a target DNA sequence. The biological functions of functional fragments or variants may be the same or may in fact be changed (e.g., with respect to their specificity or selectivity or efficacy) in comparison to the original molecule, but with retention of the molecule's basic biological function.

[00110] The term "variant" refers to a nucleotide sequence differing from the sequence most prevalent in a population (e.g., by one nucleotide) or a protein sequence different from the sequence most prevalent in a population (e.g., by one amino acid).

[00111] The term "fragment," when referring to a protein, means a protein that is shorter or has fewer amino acids than the full-length protein. The term "fragment," when referring to a nucleic acid, means a nucleic acid that is shorter or has fewer nucleotides than the full-length nucleic acid. A fragment can be, for example, when referring to a protein fragment, an N-terminal fragment (i.e., removal of a portion of the C-terminal end of the protein), a C-terminal fragment (i.e., removal of a portion of the N-terminal end of the protein), or an internal fragment (i.e., removal of a portion of an internal portion of the protein).

[00112] "Sequence identity" or "identity" in the context of two polynucleotides or polypeptide sequences refers to the residues in the two sequences that are the same when aligned for maximum correspondence over a specified comparison window. When percentage of sequence identity is used in reference to proteins, residue positions which are not identical often differ by conservative amino acid substitutions, where amino acid residues are substituted for other amino acid residues with similar chemical properties (e.g., charge or hydrophobicity) and therefore do not change the functional properties of the molecule. When sequences differ in conservative substitutions, the percent sequence identity may be adjusted upwards to correct for the conservative nature of the substitution. Sequences that differ by such conservative substitutions are said to have "sequence similarity" or "similarity." Means for making this adjustment are well known. Typically, this involves scoring a conservative substitution as a partial rather than a full mismatch, thereby increasing the percentage sequence identity. Thus, for example, where an identical amino acid is given a score of 1 and a non-conservative substitution

is given a score of zero, a conservative substitution is given a score between zero and 1. The scoring of conservative substitutions is calculated, e.g., as implemented in the program PC/GENE (Intelligenetics, Mountain View, California).

[00113] "Percentage of sequence identity" includes the value determined by comparing two optimally aligned sequences (greatest number of perfectly matched residues) over a comparison window, wherein the portion of the polynucleotide sequence in the comparison window may comprise additions or deletions (i.e., gaps) as compared to the reference sequence (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid base or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the window of comparison, and multiplying the result by 100 to yield the percentage of sequence identity. Unless otherwise specified (e.g., the shorter sequence includes a linked heterologous sequence), the comparison window is the full length of the shorter of the two sequences being compared.

[00114] Unless otherwise stated, sequence identity/similarity values include the value obtained using GAP Version 10 using the following parameters: % identity and % similarity for a nucleotide sequence using GAP Weight of 50 and Length Weight of 3, and the nwsgapdna.cmp scoring matrix; % identity and % similarity for an amino acid sequence using GAP Weight of 8 and Length Weight of 2, and the BLOSUM62 scoring matrix; or any equivalent program thereof. "Equivalent program" includes any sequence comparison program that, for any two sequences in question, generates an alignment having identical nucleotide or amino acid residue matches and an identical percent sequence identity when compared to the corresponding alignment generated by GAP Version 10.

[00115] The term "conservative amino acid substitution" refers to the substitution of an amino acid that is normally present in the sequence with a different amino acid of similar size, charge, or polarity. Examples of conservative substitutions include the substitution of a non-polar (hydrophobic) residue such as isoleucine, valine, or leucine for another non-polar residue. Likewise, examples of conservative substitutions include the substitution of one polar (hydrophilic) residue for another such as between arginine and lysine, between glutamine and asparagine, or between glycine and serine. Additionally, the substitution of a basic residue such as lysine, arginine, or histidine for another, or the substitution of one acidic residue such as

aspartic acid or glutamic acid for another acidic residue are additional examples of conservative substitutions. Examples of non-conservative substitutions include the substitution of a non-polar (hydrophobic) amino acid residue such as isoleucine, valine, leucine, alanine, or methionine for a polar (hydrophilic) residue such as cysteine, glutamine, glutamic acid or lysine and/or a polar residue for a non-polar residue. Typical amino acid categorizations are summarized in **Table 1** below.

[00116] Table 1. Amino Acid Categorizations.

Alanine	Ala	A	Nonpolar	Neutral	1.8
Arginine	Arg	R	Polar	Positive	-4.5
Asparagine	Asn	N	Polar	Neutral	-3.5
Aspartic acid	Asp	D	Polar	Negative	-3.5
Cysteine	Cys	C	Nonpolar	Neutral	2.5
Glutamic acid	Glu	E	Polar	Negative	-3.5
Glutamine	Gln	Q	Polar	Neutral	-3.5
Glycine	Gly	G	Nonpolar	Neutral	-0.4
Histidine	His	H	Polar	Positive	-3.2
Isoleucine	Ile	I	Nonpolar	Neutral	4.5
Leucine	Leu	L	Nonpolar	Neutral	3.8
Lysine	Lys	K	Polar	Positive	-3.9
Methionine	Met	M	Nonpolar	Neutral	1.9
Phenylalanine	Phe	F	Nonpolar	Neutral	2.8
Proline	Pro	P	Nonpolar	Neutral	-1.6
Serine	Ser	S	Polar	Neutral	-0.8
Threonine	Thr	T	Polar	Neutral	-0.7
Tryptophan	Trp	W	Nonpolar	Neutral	-0.9
Tyrosine	Tyr	Y	Polar	Neutral	-1.3
Valine	Val	V	Nonpolar	Neutral	4.2

[00117] A "homologous" sequence (e.g., nucleic acid sequence) includes a sequence that is either identical or substantially similar to a known reference sequence, such that it is, for example, at least 50%, at least 55%, at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% identical to the known reference sequence. Homologous sequences can include, for example, orthologous sequence and paralogous sequences. Homologous genes, for example, typically descend from a common ancestral DNA sequence, either through a speciation event (orthologous genes) or a genetic duplication event (paralogous genes). "Orthologous" genes include genes in different species that evolved from a common ancestral gene by

speciation. Orthologs typically retain the same function in the course of evolution. "Paralogous" genes include genes related by duplication within a genome. Paralogs can evolve new functions in the course of evolution.

[00118] The term "*in vitro*" includes artificial environments and to processes or reactions that occur within an artificial environment (e.g., a test tube or an isolated cell or cell line). The term "*in vivo*" includes natural environments (e.g., a cell or organism or body) and to processes or reactions that occur within a natural environment. The term "*ex vivo*" includes cells that have been removed from the body of an individual and processes or reactions that occur within such cells.

[00119] Repair in response to double-strand breaks (DSBs) occurs principally through two conserved DNA repair pathways: homologous recombination (HR) and non-homologous end joining (NHEJ). *See* Kasparek & Humphrey (2011) *Seminars in Cell & Dev. Biol.* 22:886-897, herein incorporated by reference in its entirety for all purposes. Likewise, repair of a target nucleic acid mediated by an exogenous donor nucleic acid can include any process of exchange of genetic information between the two polynucleotides.

[00120] The term "recombination" includes any process of exchange of genetic information between two polynucleotides and can occur by any mechanism. Recombination can occur via homology directed repair (HDR) or homologous recombination (HR). HDR or HR includes a form of nucleic acid repair that can require nucleotide sequence homology, uses a "donor" molecule as a template for repair of a "target" molecule (i.e., the one that experienced the double-strand break), and leads to transfer of genetic information from the donor to target. Without wishing to be bound by any particular theory, such transfer can involve mismatch correction of heteroduplex DNA that forms between the broken target and the donor, and/or synthesis-dependent strand annealing, in which the donor is used to resynthesize genetic information that will become part of the target, and/or related processes. In some cases, the donor polynucleotide, a portion of the donor polynucleotide, a copy of the donor polynucleotide, or a portion of a copy of the donor polynucleotide integrates into the target DNA. *See* Wang et al. (2013) *Cell* 153:910-918; Mandalos et al. (2012) *PLOS ONE* 7:e45768:1-9; and Wang et al. (2013) *Nat Biotechnol.* 31:530-532, each of which is herein incorporated by reference in its entirety for all purposes.

[00121] Non-homologous end joining (NHEJ) includes the repair of double-strand breaks in a nucleic acid by direct ligation of the break ends to one another or to an exogenous sequence without the need for a homologous template. Ligation of non-contiguous sequences by NHEJ can often result in deletions, insertions, or translocations near the site of the double-strand break. For example, NHEJ can also result in the targeted integration of an exogenous donor nucleic acid through direct ligation of the break ends with the ends of the exogenous donor nucleic acid (i.e., NHEJ-based capture). Such NHEJ-mediated targeted integration can be preferred for insertion of an exogenous donor nucleic acid when homology directed repair (HDR) pathways are not readily usable (e.g., in non-dividing cells, primary cells, and cells which perform homology-based DNA repair poorly). In addition, in contrast to homology-directed repair, knowledge concerning large regions of sequence identity flanking the cleavage site is not needed, which can be beneficial when attempting targeted insertion into organisms that have genomes for which there is limited knowledge of the genomic sequence. The integration can proceed via ligation of blunt ends between the exogenous donor nucleic acid and the cleaved genomic sequence, or via ligation of sticky ends (i.e., having 5' or 3' overhangs) using an exogenous donor nucleic acid that is flanked by overhangs that are compatible with those generated by a nuclease agent in the cleaved genomic sequence. *See, e.g.*, US 2011/020722, WO 2014/033644, WO 2014/089290, and Maresca et al. (2013) *Genome Res.* 23(3):539-546, each of which is herein incorporated by reference in its entirety for all purposes. If blunt ends are ligated, target and/or donor resection may be needed to generation regions of microhomology needed for fragment joining, which may create unwanted alterations in the target sequence.

[00122] Compositions or methods "comprising" or "including" one or more recited elements may include other elements not specifically recited. For example, a composition that "comprises" or "includes" a protein may contain the protein alone or in combination with other ingredients. The transitional phrase "consisting essentially of" means that the scope of a claim is to be interpreted to encompass the specified elements recited in the claim and those that do not materially affect the basic and novel characteristic(s) of the claimed invention. Thus, the term "consisting essentially of" when used in a claim of this invention is not intended to be interpreted to be equivalent to "comprising."

2020379046 11 Feb 2025

[00123] "Optional" or "optionally" means that the subsequently described event or circumstance may or may not occur and that the description includes instances in which the event or circumstance occurs and instances in which the event or circumstance does not.

[00124] Designation of a range of values includes all integers within or defining the range, and all subranges defined by integers within the range.

[00125] Unless otherwise apparent from the context, the term "about" encompasses values ± 5 of a stated value.

[00126] The term "and/or" refers to and encompasses any and all possible combinations of one or more of the associated listed items, as well as the lack of combinations when interpreted in the alternative ("or").

[00127] The term "or" refers to any one member of a particular list and also includes any combination of members of that list.

[00128] The singular forms of the articles "a," "an," and "the" include plural references unless the context clearly dictates otherwise. For example, the term "a protein" or "at least one protein" can include a plurality of proteins, including mixtures thereof.

[00129] Statistically significant means $p \leq 0.05$.

[00129a] A reference herein to a patent document or other matter which is given as prior art is not to be taken as admission that the document or matter was known or that the information it contains was part of the common general knowledge as at the priority date of any of the claims.

[00129b] Unless the context requires otherwise, where the terms "comprise", "comprises", "comprised" or "comprising" are used in this specification (including the claims) they are to be interpreted as specifying the presence of the stated features, integers, steps or components, but not precluding the presence of one or more other features, integers, steps or components, or group thereof.

2020379046 11 Feb 2025

DETAILED DESCRIPTION

I. Overview

[00130] X-linked juvenile retinoschisis (XLRS) is juvenile-onset macular degeneration caused by mutations in retinoschisin (*RS1*). The *RS1* gene encodes a 24 kDa discoidin-domain-containing protein that is secreted as a homo-oligomeric complex. Gene mutations of *RS1* lead to either a non-functional protein or the absence of protein secretion, which causes schisis or splitting within the retinal layers leading to early and progressive vision loss. More than 200 different mutations in the *RS1* gene are known to cause XLRS. Forty percent of the disease-causing mutations are nonsense or frameshift mutations that are predicted to result in the absence of a full-length retinoschisin protein. Fifty percent of the disease-causing mutations are missense mutations that allow for production of full-length mutant protein. Most of these are in the discoidin domain and result in misfolded protein retained in ER.

[00131] Because XLRS is a recessive disease caused by the loss in retinoschisin function, gene replacement therapy is as a potential treatment for this disease. Furthermore, because

retinoschisin functions as an extracellular protein, beneficial treatment is not necessarily restricted to the transfected cell expressing the replacement gene but can encompass a wider area due to the spread of the secreted protein from the site of expression.

[00132] Provided herein are nucleic acid constructs and compositions that allow insertion of a retinoschisin coding sequence into a target genomic locus such as an endogenous *RS1* locus and/or expression of the retinoschisin coding sequence. The nucleic acid constructs and compositions can be used in methods for integration into a target genomic locus and/or expression in a cell or in methods of treating X-linked juvenile retinoschisis. Also provided are nuclease agents (e.g., targeting an endogenous *RS1* locus) or nucleic acids encoding nuclease agents to facilitate integration of the nucleic acid constructs into a target genomic locus such as an endogenous *RS1* locus.

[00133] Integration of the nucleic acid construct into an endogenous *RS1* locus, such as intron 1 of *RS1*, can prevent transcription of the endogenous *RS1* gene downstream of the integration site. The integration of the nucleic acid construct into the endogenous *RS1* locus can reduce or eliminate expression of the endogenous retinoschisin protein (e.g., an endogenous retinoschisin protein with an XLRS-causing mutation) and replace it with expression of the retinoschisin protein or fragment or variant thereof encoded by the nucleic acid construct (e.g., retinoschisin without an XLRS-causing mutation). In one example, integration of the nucleic acid construct into the endogenous *RS1* locus reduces expression of the endogenous retinoschisin protein. In another example, integration of the nucleic acid construct into the endogenous *RS1* locus eliminates expression of the endogenous retinoschisin protein. In this way, integration of the nucleic acid construct can simultaneously knock out the endogenous *RS1* gene (e.g., an endogenous *RS1* gene comprising one or more mutations associated with or that cause XLRS, such as R141C) and knock in a replacement retinoschisin coding sequence (e.g., a replacement retinoschisin coding sequence that does not comprise mutations associated with or that cause XLRS).

II. Nucleic Acid Constructs Comprising a Retinoschisin Coding Sequence for Integration into and Expression from a Target Genomic Locus

[00134] Provided herein are nucleic acid constructs (i.e., exogenous donor nucleic acids) comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or

variant thereof) for integration into and expression from a target genomic locus. The nucleic acid constructs can be isolated nucleic acid constructs.

[00135] Retinoschisin (X-linked juvenile retinoschisis protein) is a protein required for normal structure and function of the retina. An exemplary human retinoschisin protein is assigned UniProt Accession No. O15537 and has the sequence set forth in SEQ ID NO: 2. Orthologs in other species are also known. For example, an exemplary mouse retinoschisin protein is assigned UniProt Accession No. Q9Z1L4 and has the sequence set forth in SEQ ID NO: 1. Retinoschisin is encoded by the *RS1* gene (also known as XLRS1). The human *RS1* gene contains six separate exons interspaced by five introns. The human *RS1* gene is assigned NCBI GeneID 6247. The mouse *Rs1* gene is assigned NCBI GeneID 20147. An exemplary coding sequence for human *RS1* is assigned CCDS ID CCDS14187.1 and is set forth in SEQ ID NO: 6. Mutations in retinoschisin cause X-linked juvenile retinoschisis (XLRS), a vitreo-retinal dystrophy characterized by macular pathology and by splitting of the superficial layer of the retina. The nucleic acid constructs disclosed herein can be used in methods to treat XLRS as described in more detail elsewhere herein.

[00136] The functional domains of RS1 are a signal peptide (SP), RS1, and the discoidin domains. The signal sequence guides the translocation of nascent RS1 from the endoplasmic reticulum (the site of synthesis) to external leaflet of the plasma membrane, during which signal sequence is cleaved by signal peptidase to generate mature protein with characteristic RS1 and a highly conserved discoidin domain. The different subdomains of RS1 signal sequence are the positively charged N region at the amino terminal end which mediates translocation, the hydrophobic core (H) required for targeting and membrane insertion and a polar "C" region that determines the site of recognition and cleavage by signal peptidase. RS1 is prominently expressed by the retinal photoreceptor and bipolar cells and is also in the pineal gland.

[00137] The retinoschisin coding sequence included in the nucleic acid constructs disclosed herein can be a coding sequence for a full-length retinoschisin protein or a fragment or variant thereof. In one example, the retinoschisin coding sequence included in the nucleic acid construct does not include the first exon of *RS1*. For example, the retinoschisin coding sequence included in the nucleic acid construct can include exons 2-6 of an *RS1* gene or variants or degenerate variants thereof. As one example, a cDNA fragment comprising exons 2-6 of an *RS1* gene can comprise the sequence set forth in SEQ ID NO: 8. Although each of the 64 codons is specific for

only one amino acid or stop signal, the genetic code is degenerate (i.e., redundant) because a single amino acid may be coded for by more than one codon. A degenerate variant of a gene encodes the same protein but uses at least one different codon. The retinoschisin coding sequence in the nucleic acid construct can comprise complementary DNA (cDNA) without intervening introns, or the nucleic acid construct can comprise one or more introns separating exons in the retinoschisin coding sequence. For example, the nucleic acid construct can comprise a sequence corresponding to the *RS1* genomic locus having both exons and introns.

[00138] The retinoschisin coding sequence can be from any organism. For example, the retinoschisin coding sequence can be mammalian, non-human mammalian, rodent, mouse, rat, or human or variants thereof. Alternatively, the retinoschisin coding sequence can be chimeric (e.g., part mouse and part human). In a specific example, the retinoschisin coding sequence is a human retinoschisin coding sequence.

[00139] The retinoschisin coding sequence can be codon-optimized for efficient translation into retinoschisin in a particular cell or organism. As one example, a codon-optimized version of exons 2-6 of human *RS1* is set forth in SEQ ID NO: 9. For example, the nucleic acid can be modified to substitute codons having a higher frequency of usage in a human cell, a non-human cell, a mammalian cell, a rodent cell, a mouse cell, a rat cell, or any other host cell of interest.

[00140] The retinoschisin coding sequence can encode a wild type retinoschisin protein or a fragment or variant thereof. Likewise, the retinoschisin coding sequence can be a wild type coding sequence or variant thereof. In one example, the retinoschisin coding sequence does not comprise any mutations associated with or that cause X-linked juvenile retinoschisis. Alternatively, the retinoschisin coding sequence can comprise one or more mutations associated with or that cause X-linked juvenile retinoschisis (e.g., R141C).

[00141] The nucleic acid construct can further comprise one or more *RS1* introns or fragments or variants thereof (e.g., one or more human *RS1* introns or fragments or variants thereof). For example, the nucleic acid construct can comprise *RS1* intron 1 or a fragment or variant thereof. The *RS1* intron or the fragment or variant thereof can comprise a splice acceptor site or a fragment thereof. Examples of fragments of *RS1* intron 1 are set forth in SEQ ID NOS: 15 and 16. In one specific example, the nucleic acid construct can comprise *RS1* intron 1 or a fragment or variant thereof located 5' of exons 2-6 of *RS1* (e.g., upstream of a cDNA sequence comprising, consisting essentially of, or consisting of exons 2-6 of *RS1*).

[00142] The nucleic acid constructs can further comprise one or more splice acceptor sites. Examples of sequences (e.g., intronic sequences) and reverse complements thereof comprising splice acceptor sites are set forth in SEQ ID NOS: 15-21. For example, the nucleic acid construct can comprise a splice acceptor site located 5' of the retinoschisin coding sequence. In a specific example, the retinoschisin coding sequence comprises, consists essentially of, or consists of exons 2-6 of *RS1* (e.g., exons 2-6 of human *RS1*), and the splice acceptor site is the splice acceptor site from intron 1 of *RS1* (e.g., human *RS1*) used in splicing *RS1* exon 1 to *RS1* exon 2. The term splice acceptor site refers to a nucleic acid sequence at a 3' intron/exon boundary that can be recognized and bound by splicing machinery.

[00143] The nucleic acid constructs disclosed herein can also comprise post-transcriptional regulatory elements, such as the woodchuck hepatitis virus post-transcriptional regulatory element.

[00144] The nucleic acid constructs can further comprise one or more polyadenylation signal sequences. Examples of polyadenylation signal sequences, or sequences comprising polyadenylation signal sequences, or reverse complements thereof are set forth in SEQ ID NOS: 22-25. For example, the nucleic acid construct can comprise a polyadenylation signal sequence located 3' of the retinoschisin coding sequence. Any suitable polyadenylation signal sequence can be used. The term polyadenylation signal sequence refers to any sequence that directs termination of transcription and addition of a poly-A tail to the mRNA transcript. In eukaryotes, transcription terminators are recognized by protein factors, and termination is followed by polyadenylation, a process of adding a poly(A) tail to the mRNA transcripts in presence of the poly(A) polymerase. The mammalian poly(A) signal typically consists of a core sequence, about 45 nucleotides long, that may be flanked by diverse auxiliary sequences that serve to enhance cleavage and polyadenylation efficiency. The core sequence consists of a highly conserved upstream element (AATAAA or AAUAAA) in the mRNA, referred to as a poly A recognition motif or poly A recognition sequence), recognized by cleavage and polyadenylation-specificity factor (CPSF), and a poorly defined downstream region (rich in Us or Gs and Us), bound by cleavage stimulation factor (CstF). Examples of transcription terminators that can be used include, for example, the human growth hormone (HGH) polyadenylation signal, the simian virus 40 (SV40) late polyadenylation signal, the rabbit beta-globin polyadenylation signal, the bovine growth hormone (BGH) polyadenylation signal, the phosphoglycerate kinase (PGK)

polyadenylation signal, an AOX1 transcription termination sequence, a CYC1 transcription termination sequence, or any transcription termination sequence known to be suitable for regulating gene expression in eukaryotic cells.

[00145] The nucleic acid constructs can also comprise a polyadenylation signal sequence upstream of the retinoschisin coding sequence. The polyadenylation signal sequence upstream of the retinoschisin coding sequence can be flanked by recombinase recognition sites recognized by a site-specific recombinase. In some constructs, the recombinase recognition sites also flank a selection cassette comprising, for example, the coding sequence for a drug resistance protein. In other constructs, the recombinase recognition sites do not flank a selection cassette. The polyadenylation signal sequence prevents transcription and expression of the protein or RNA encoded by the coding sequence. However, upon exposure to the site-specific recombinase, the polyadenylation signal sequence will be excised, and the protein or RNA can be expressed.

[00146] Such a configuration can enable tissue-specific expression or developmental-stage-specific expression in animals comprising the retinoschisin coding sequence if the polyadenylation signal sequence is excised in a tissue-specific or developmental-stage-specific manner. Excision of the polyadenylation signal sequence in a tissue-specific or developmental-stage-specific manner can be achieved if an animal comprising the nucleic acid construct further comprises a coding sequence for the site-specific recombinase operably linked to a tissue-specific or developmental-stage-specific promoter. The polyadenylation signal sequence will then be excised only in those tissues or at those developmental stages, enabling tissue-specific expression or developmental-stage-specific expression. In one example, the retinoschisin or fragment or variant thereof encoded by the nucleic acid constructs can be expressed in an eye-specific or retinal-cell-specific manner.

[00147] Site-specific recombinases include enzymes that can facilitate recombination between recombinase recognition sites, where the two recombination sites are physically separated within a single nucleic acid or on separate nucleic acids. Examples of recombinases include Cre, Flp, and Dre recombinases. One example of a Cre recombinase gene is Crei, in which two exons encoding the Cre recombinase are separated by an intron to prevent its expression in a prokaryotic cell. Such recombinases can further comprise a nuclear localization signal to facilitate localization to the nucleus (e.g., NLS-Crei). Recombinase recognition sites include nucleotide sequences that are recognized by a site-specific recombinase and can serve as a

substrate for a recombination event. Examples of recombinase recognition sites include FRT, FRT11, FRT71, attp, att, rox, and lox sites such as loxP, lox511, lox2272, lox66, lox71, loxM2, and lox5171.

[00148] The nucleic acid constructs can further comprise a promoter operably linked to the retinoschisin coding sequence. The retinoschisin coding sequence in the nucleic acid construct can be operably linked to any suitable promoter for expression *in vivo* within an animal or *in vitro* within an isolated cell. The promoter can be a constitutively active promoter (e.g., a CAG promoter or a U6 promoter), a conditional promoter, an inducible promoter, a temporally restricted promoter (e.g., a developmentally regulated promoter), or a spatially restricted promoter (e.g., a cell-specific or tissue-specific promoter). Such promoters are well-known and are discussed elsewhere herein. Promoters that can be used in an expression construct include promoters active, for example, in one or more of a eukaryotic cell, a human cell, a non-human cell, a mammalian cell, a non-human mammalian cell, a rodent cell, a mouse cell, a rat cell, a hamster cell, a rabbit cell, a pluripotent cell, an eye cell, a retinal cell, an embryonic stem (ES) cell, or a zygote. In a specific example, the promoter is active in an eye cell or a retinal cell.

[00149] Alternatively, some nucleic acid constructs do not comprise a promoter operably linked to the retinoschisin coding sequence (e.g., some nucleic acid constructs are promoterless constructs). Such nucleic acid constructs can be designed, for example, to be operably linked to an endogenous promoter at a target genomic locus (e.g., an endogenous *RS1* promoter at an endogenous *RS1* locus) upon integration into the target genomic locus.

[00150] Any target genomic locus capable of expressing a gene can be used, such as a safe harbor locus (safe harbor gene) or an endogenous *RS1* locus. Interactions between integrated exogenous DNA and a host genome can limit the reliability and safety of integration and can lead to overt phenotypic effects that are not due to the targeted genetic modification but are instead due to unintended effects of the integration on surrounding endogenous genes. For example, randomly inserted transgenes can be subject to position effects and silencing, making their expression unreliable and unpredictable. Likewise, integration of exogenous DNA into a chromosomal locus can affect surrounding endogenous genes and chromatin, thereby altering cell behavior and phenotypes. Safe harbor loci include chromosomal loci where transgenes or other exogenous nucleic acid inserts can be stably and reliably expressed in all tissues of interest without overtly altering cell behavior or phenotype (i.e., without any deleterious effects on the

host cell). *See, e.g.*, Sadelain et al. (2012) *Nat. Rev. Cancer* 12:51-58, herein incorporated by reference in its entirety for all purposes. For example, the safe harbor locus can be one in which expression of the inserted gene sequence is not perturbed by any read-through expression from neighboring genes. For example, safe harbor loci can include chromosomal loci where exogenous DNA can integrate and function in a predictable manner without adversely affecting endogenous gene structure or expression. Safe harbor loci can include extragenic regions or intragenic regions such as, for example, loci within genes that are non-essential, dispensable, or able to be disrupted without overt phenotypic consequences.

[00151] Such safe harbor loci can offer an open chromatin configuration in all tissues and can be ubiquitously expressed during embryonic development and in adults. *See, e.g.*, Zambrowicz et al. (1997) *Proc. Natl. Acad. Sci. U.S.A.* 94:3789-3794, herein incorporated by reference in its entirety for all purposes. In addition, the safe harbor loci can be targeted with high efficiency, and safe harbor loci can be disrupted with no overt phenotype. Examples of safe harbor loci include albumin, CCR5, HPRT, AAVS1, and Rosa26. *See, e.g.*, US Patent Nos. 7,888,121; 7,972,854; 7,914,796; 7,951,925; 8,110,379; 8,409,861; 8,586,526; and US Patent Publication Nos. 2003/0232410; 2005/0208489; 2005/0026157; 2006/0063231; 2008/0159996; 2010/00218264; 2012/0017290; 2011/0265198; 2013/0137104; 2013/0122591; 2013/0177983; 2013/0177960; and 2013/0122591, each of which is herein incorporated by reference in its entirety for all purposes.

[00152] The target genomic locus can also be an endogenous *RS1* locus, such as an endogenous *RS1* locus comprising one or more mutations associated with or that cause XLRS (e.g., an R141C mutation in the encoded retinoschisin protein). Integration of the nucleic acid construct into the endogenous *RS1* locus can, in some cases, prevent transcription of the endogenous *RS1* gene downstream of the integration site. The integration of the nucleic acid construct into the endogenous *RS1* locus can reduce or eliminate expression of the endogenous retinoschisin protein and replace it with expression of the retinoschisin protein or fragment or variant thereof encoded by the nucleic acid construct. In one example, integration of the nucleic acid construct into the endogenous *RS1* locus reduces expression of the endogenous retinoschisin protein. In another example, integration of the nucleic acid construct into the endogenous *RS1* locus eliminates expression of the endogenous retinoschisin protein. In this way, integration of the nucleic acid construct can simultaneously knock out the endogenous *RS1* gene (e.g., an

endogenous *RS1* gene comprising one or more mutations associated with or that cause XLRS) and knock in a replacement retinoschisin coding sequence (e.g., a replacement retinoschisin coding sequence that does not comprise mutations associated with or that cause XLRS).

[00153] The nucleic acid construct can be integrated into any part of the target genomic locus. For example, the nucleic acid construct can be inserted into an intron or an exon of a target genomic locus or can replace one or more introns and/or exons of a target genomic locus. In a specific example, the nucleic acid construct can be integrated into an intron of the target genomic locus, such as the first intron of the target genomic locus (e.g., *RS1* intron 1). Expression cassettes integrated into a target genomic locus can be operably linked to an endogenous promoter at the target genomic locus (e.g., the endogenous *RS1* promoter) or can be operably linked to an exogenous promoter that is heterologous to the target genomic locus (e.g., a CMV promoter).

[00154] The nucleic acid constructs can comprise deoxyribonucleic acid (DNA) or ribonucleic acid (RNA), they can be single-stranded or double-stranded, and they can be in linear or circular form. For example, the nucleic acid construct can be a single-stranded oligodeoxynucleotide (ssODN). *See, e.g.*, Yoshimi et al. (2016) *Nat. Commun.* 7:10431, herein incorporated by reference in its entirety for all purposes. The nucleic acid constructs can be naked nucleic acids or can be delivered by vectors, such as AAV vectors. In a specific example, the nucleic acid construct can be delivered via AAV and can be capable of insertion into an endogenous *RS1* locus by non-homologous end joining (e.g., the nucleic acid construct can be one that does not comprise homology arms). If introduced in linear form, the ends of the nucleic acid construct (e.g., donor sequence) can be protected (e.g., from exonucleolytic degradation) by well-known methods. For example, one or more dideoxynucleotide residues can be added to the 3' terminus of a linear molecule and/or self-complementary oligonucleotides can be ligated to one or both ends. *See, e.g.*, Chang et al. (1987) *Proc. Natl. Acad. Sci. U.S.A.* 84:4959-4963 and Nehls et al. (1996) *Science* 272:886-889, each of which is herein incorporated by reference in its entirety for all purposes. Additional methods for protecting exogenous polynucleotides from degradation include, but are not limited to, addition of terminal amino group(s) and the use of modified internucleotide linkages such as, for example, phosphorothioates, phosphoramidates, and O-methyl ribose or deoxyribose residues.

[00155] An exemplary nucleic acid construct is between about 50 nucleotides to about 5 kb in length or between about 50 nucleotides to about 3 kb in length. Alternatively, a nucleic acid construct can be between about 1 kb to about 1.5 kb, about 1.5 kb to about 2 kb, about 2 kb to about 2.5 kb, about 2.5 kb to about 3 kb, about 3 kb to about 3.5 kb, about 3.5 kb to about 4 kb, about 4 kb to about 4.5 kb, or about 4.5 kb to about 5 kb in length. Alternatively, a nucleic acid construct can be, for example, no more than 5 kb, 4.5 kb, 4 kb, 3.5 kb, 3 kb, or 2.5 kb in length.

[00156] Integration of a nucleic acid construct at a target genomic locus can result in addition of a nucleic acid sequence of interest to the target genomic locus or replacement of a nucleic acid sequence of interest at the target genomic locus (i.e., deletion and insertion). Some nucleic acid constructs are designed for insertion of a nucleic acid construct at a target genomic locus without any corresponding deletion at the target genomic locus. Other nucleic acid constructs are designed to delete a nucleic acid sequence of interest at a target genomic locus and replace it with a nucleic acid construct.

[00157] The nucleic acid construct or the corresponding nucleic acid at the target genomic locus being deleted and/or replaced can be various lengths. An exemplary nucleic acid construct or corresponding nucleic acid at the target genomic locus being deleted and/or replaced is between about 1 nucleotide to about 5 kb in length or is between about 1 nucleotide to about 3 kb nucleotides in length. For example, a nucleic acid construct or a corresponding nucleic acid at the target genomic locus being deleted and/or replaced can be between about 1 to about 100, about 100 to about 200, about 200 to about 300, about 300 to about 400, about 400 to about 500, about 500 to about 600, about 600 to about 700, about 700 to about 800, about 800 to about 900, or about 900 to about 1,000 nucleotides in length. Likewise, a nucleic acid construct or a corresponding nucleic acid at the target genomic locus being deleted and/or replaced can be between about 1 kb to about 1.5 kb, about 1.5 kb to about 2 kb, about 2 kb to about 2.5 kb, about 2.5 kb to about 3 kb, about 3 kb to about 3.5 kb, about 3.5 kb to about 4 kb, about 4 kb to about 4.5 kb, about 4.5 kb to about 5 kb in length, or longer.

[00158] The nucleic acid construct or the corresponding nucleic acid at the target genomic locus being deleted and/or replaced can be a coding region such as an exon; a non-coding region such as an intron, an untranslated region, or a regulatory region (e.g., a promoter, an enhancer, or a transcriptional repressor-binding element), or any combination thereof.

[00159] The nucleic acid constructs can, in some cases, comprise one or more of the following terminal structures: hairpin, loop, inverted terminal repeat (ITR), or toroid. For example, the nucleic acid construct can comprise ITRs.

[00160] Some such nucleic acid constructs can modify the target genomic locus (e.g., but not limited to, an endogenous *RS1* locus) following cleavage or nicking of the target genomic locus with a nuclease agent such as a Cas protein. The nucleic acid construct can be designed to repair the cleaved or nicked locus via non-homologous end joining (NHEJ)-mediated ligation or homology-directed repair. Optionally, repair with the nucleic acid construct removes or disrupts the nuclease target sequence so that alleles that have been targeted cannot be re-targeted by the nuclease agent.

[00161] Some nucleic acid constructs comprise homology arms. The homology arms can be symmetrical (e.g., each 40 nucleotides or each 60 nucleotides in length), or they can be asymmetrical (e.g., one homology arm or complementary region that is 36 nucleotides in length, and one homology arm or complementary region that is 91 nucleotides in length). Other nucleic acid constructs do not comprise homology arms.

[00162] Some nucleic acid constructs disclosed herein comprise homology arms. The homology arms can flank the retinoschisin coding sequence. For ease of reference, the homology arms are referred to herein as 5' and 3' (i.e., upstream and downstream) homology arms. This terminology relates to the relative position of the homology arms to a nucleic acid insert (e.g., the retinoschisin coding sequence) within a nucleic acid construct. The 5' and 3' homology arms correspond to regions within the target genomic locus, which are referred to herein as "5' target sequence" and "3' target sequence," respectively.

[00163] A homology arm and a target sequence "correspond" or are "corresponding" to one another when the two regions share a sufficient level of sequence identity to one another to act as substrates for a homologous recombination reaction. The term "homology" includes DNA sequences that are either identical or share sequence identity to a corresponding sequence. The sequence identity between a given target sequence and the corresponding homology arm found in the nucleic acid construct can be any degree of sequence identity that allows for homologous recombination to occur. For example, the amount of sequence identity shared by the homology arm of the nucleic acid construct (or a fragment thereof) and the target sequence (or a fragment thereof) can be at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 81%, 82%, 83%, 84%, 85%,

86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or 100% sequence identity, such that the sequences undergo homologous recombination. Moreover, a corresponding region of homology between the homology arm and the corresponding target sequence can be of any length that is sufficient to promote homologous recombination. Exemplary homology arms are between about 25 nucleotides to about 2.5 kb in length, are between about 25 nucleotides to about 1.5 kb in length, or are between about 25 to about 500 nucleotides in length. For example, a given homology arm (or each of the homology arms) and/or corresponding target sequence can comprise corresponding regions of homology that are between about 25 to about 30, about 30 to about 40, about 40 to about 50, about 50 to about 60, about 60 to about 70, about 70 to about 80, about 80 to about 90, about 90 to about 100, about 100 to about 150, about 150 to about 200, about 200 to about 250, about 250 to about 300, about 300 to about 350, about 350 to about 400, about 400 to about 450, or about 450 to about 500 nucleotides in length, such that the homology arms have sufficient homology to undergo homologous recombination with the corresponding target sequences within the target nucleic acid. Alternatively, a given homology arm (or each homology arm) and/or corresponding target sequence can comprise corresponding regions of homology that are between about 0.5 kb to about 1 kb, about 1 kb to about 1.5 kb, about 1.5 kb to about 2 kb, or about 2 kb to about 2.5 kb in length. For example, the homology arms can each be about 750 nucleotides in length. In another example, the homology arms can each be about 150 to about 750, about 200 to about 700, about 250 to about 650, about 300 to about 600, about 350 to about 550, about 400 to about 500, about 150 to about 450, about 200 to about 450, about 250 to about 450, about 300 to about 450, about 350 to about 450, about 400 to about 450, about 450 to about 500, about 450 to about 550, about 450 to about 600, about 450 to about 650, about 450 to about 700, about 450 to about 750, or about 450 nucleotides in length. In another example, the homology arms can each be about 500 to about 1300, about 550 to about 1250, about 600 to about 1200, about 650 to about 1150, about 700 to about 1100, about 750 to about 1050, about 800 to about 1000, about 850 to about 950, about 500 to about 900, about 550 to about 900, about 600 to about 900, about 650 to about 900, about 700 to about 900, about 750 to about 900, about 800 to about 900, about 850 to about 900, about 900 to about 950, about 900 to about 1000, about 900 to about 1050, about 900 to about 1100, about 900 to about 1150, about 900 to about 1200, about 900 to about 1250, about 900 to about 1300, or about 900 nucleotides in length. In another example, the homology arms

can each be about 1500 to about 2100, about 1550 to about 2050, about 1600 to about 2000, about 1650 to about 1950, about 1700 to about 1900, about 1750 to about 1850, about 1500 to about 1800, about 1550 to about 1800, about 1600 to about 1800, about 1650 to about 1800, about 1700 to about 1800, about 1750 to about 1800, about 1800 to about 1850, about 1800 to about 1900, about 1800 to about 1950, about 1800 to about 2000, about 1800 to about 2050, about 1800 to about 2100, or about 1800 nucleotides. In another example, each homology arm is no more than about 450 nucleotides, no more than about 900 nucleotides, or no more than about 1800 nucleotides. In another example, each homology arm is at least about 450 nucleotides, at least about 900 nucleotides, or at least about 1800 nucleotides. The homology arms can be symmetrical (each about the same size in length), or they can be asymmetrical (one longer than the other).

[00164] When a CRISPR/Cas system or other nuclease agent is used in combination with an nucleic acid construct disclosed herein, the 5' and 3' target sequences can be located in sufficient proximity to the nuclease cleavage site (e.g., within sufficient proximity to a guide RNA target sequence) so as to promote the occurrence of a homologous recombination event between the target sequences and the homology arms upon a single-strand break (nick) or double-strand break at the nuclease cleavage site or nuclease cleavage site. The term "nuclease cleavage site" includes a DNA sequence at which a nick or double-strand break is created by a nuclease agent (e.g., a Cas9 protein complexed with a guide RNA). The target sequences within the targeted locus that correspond to the 5' and 3' homology arms of the nucleic acid construct are "located in sufficient proximity" to a nuclease cleavage site if the distance is such as to promote the occurrence of a homologous recombination event between the 5' and 3' target sequences and the homology arms upon a single-strand break or double-strand break at the nuclease cleavage site. Thus, the target sequences corresponding to the 5' and/or 3' homology arms of the nucleic acid construct can be, for example, within at least 1 nucleotide of a given nuclease cleavage site or within at least 10 nucleotides to about 1,000 nucleotides of a given nuclease cleavage site. As an example, the nuclease cleavage site can be immediately adjacent to at least one or both of the target sequences.

[00165] The spatial relationship of the target sequences that correspond to the homology arms of the nucleic acid construct and the nuclease cleavage site can vary. For example, target

sequences can be located 5' to the nuclease cleavage site, target sequences can be located 3' to the nuclease cleavage site, or the target sequences can flank the nuclease cleavage site.

[00166] Other nucleic acid constructs do not comprise any homology arms. Such nucleic acid constructs can be capable of insertion by non-homologous end joining. For example, such nucleic acid constructs can be inserted into a blunt end double-strand break following cleavage with a nuclease agent. In a specific example, the nucleic acid construct acid can be delivered via AAV and can be capable of insertion into a target genomic locus by non-homologous end joining (e.g., the nucleic acid construct can be one that does not comprise homology arms).

[00167] In a specific example, the nucleic acid construct can be inserted via homology-independent targeted integration. For example, the retinoschisin coding sequence in the nucleic acid construct can be flanked on each side by a target site for a nuclease agent (e.g., the same target site as in the target genomic locus, and the same nuclease agent being used to cleave the target site in the target genomic locus). The nuclease agent can then cleave the target sites flanking the retinoschisin coding sequence. In a specific example, the nucleic acid construct is delivered AAV-mediated delivery, and cleavage of the target sites flanking the retinoschisin coding sequence can remove the inverted terminal repeats (ITRs) of the AAV. In some methods, the target site in the target genomic locus (e.g., a gRNA target sequence including the flanking protospacer adjacent motif) is no longer present if the retinoschisin coding sequence is inserted into the target genomic locus in the correct orientation but it is reformed if the retinoschisin coding sequence is inserted into the target genomic locus in the opposite orientation. This can help ensure that the retinoschisin coding sequence is inserted in the correct orientation for expression.

[00168] In one exemplary nucleic acid construct for homology-independent targeted integration into a target genomic locus, the retinoschisin protein or fragment thereof is a human retinoschisin protein or fragment thereof, the coding sequence for the retinoschisin protein or fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or fragment thereof, the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, and the nuclease target sequence in the nucleic acid construct is identical to a nuclease target sequence for

integration into the target genomic locus, wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation.

[00169] In one exemplary nucleic acid construct for homology-independent targeted integration into a target genomic locus, the retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 5. In one exemplary nucleic acid construct for homology-independent targeted integration into a target genomic locus, the coding sequence for the retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 6, 8, or 9 or degenerate variants thereof. In one exemplary nucleic acid construct for homology-independent targeted integration into a target genomic locus, the nucleic acid construct comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 45.

[00170] Other nucleic acid constructs can have short single-stranded regions at the 5' end and/or the 3' end that are complementary to one or more overhangs created by nuclease-agent-mediated cleavage at the target genomic locus. For example, some nucleic acid constructs have short single-stranded regions at the 5' end and/or the 3' end that are complementary to one or more overhangs created by nuclease-mediated cleavage at 5' and/or 3' target sequences at the target genomic locus. Some such nucleic acid constructs have a complementary region only at the 5' end or only at the 3' end. For example, some such nucleic acid constructs have a complementary region only at the 5' end complementary to an overhang created at a 5' target sequence at the target genomic locus or only at the 3' end complementary to an overhang created at a 3' target sequence at the target genomic locus. Other such nucleic acid constructs have complementary regions at both the 5' and 3' ends. For example, other such nucleic acid

constructs have complementary regions at both the 5' and 3' ends (e.g., complementary to first and second overhangs, respectively) generated by nuclease-mediated cleavage at the target genomic locus. For example, if the nucleic acid construct is double-stranded, the single-stranded complementary regions can extend from the 5' end of the top strand of the nucleic acid construct and the 5' end of the bottom strand of the donor nucleic acid, creating 5' overhangs on each end. Alternatively, the single-stranded complementary region can extend from the 3' end of the top strand of the nucleic acid construct and from the 3' end of the bottom strand of the template, creating 3' overhangs.

[00171] The complementary regions can be of any length sufficient to promote ligation between the nucleic acid construct and the target nucleic acid. Exemplary complementary regions are between about 1 to about 5 nucleotides in length, between about 1 to about 25 nucleotides in length, or between about 5 to about 150 nucleotides in length. For example, a complementary region can be at least about 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, or 25 nucleotides in length. Alternatively, the complementary region can be about 5 to about 10, about 10 to about 20, about 20 to about 30, about 30 to about 40, about 40 to about 50, about 50 to about 60, about 60 to about 70, about 70 to about 80, about 80 to about 90, about 90 to about 100, about 100 to about 110, about 110 to about 120, about 120 to about 130, about 130 to about 140, about 140 to about 150 nucleotides in length, or longer.

[00172] Such complementary regions can be complementary to overhangs created by two pairs of nickases. Two double-strand breaks with staggered ends can be created by using first and second nickases that cleave opposite strands of DNA to create a first double-strand break, and third and fourth nickases that cleave opposite strands of DNA to create a second double-strand break. For example, a Cas protein can be used to nick first, second, third, and fourth guide RNA target sequences corresponding with first, second, third, and fourth guide RNAs. The first and second guide RNA target sequences can be positioned to create a first cleavage site such that the nicks created by the first and second nickases on the first and second strands of DNA create a double-strand break (i.e., the first cleavage site comprises the nicks within the first and second guide RNA target sequences). Likewise, the third and fourth guide RNA target sequences can be positioned to create a second cleavage site such that the nicks created by the third and fourth nickases on the first and second strands of DNA create a double-strand break (i.e., the second cleavage site comprises the nicks within the third and fourth guide RNA target sequences). The

nicks within the first and second guide RNA target sequences and/or the third and fourth guide RNA target sequences can be off-set nicks that create overhangs. The offset window can be, for example, at least about 5 bp, 10 bp, 20 bp, 30 bp, 40 bp, 50 bp, 60 bp, 70 bp, 80 bp, 90 bp, 100 bp or more. *See* Ran et al. (2013) *Cell* 154:1380-1389; Mali et al. (2013) *Nat. Biotechnol.* 31:833-838; and Shen et al. (2014) *Nat. Methods* 11:399-404, each of which is herein incorporated by reference in its entirety for all purposes. In such cases, a double-stranded nucleic acid construct can be designed with single-stranded complementary regions that are complementary to the overhangs created by the nicks within the first and second guide RNA target sequences and by the nicks within the third and fourth guide RNA target sequences. Such nucleic acid construct can then be inserted by non-homologous-end-joining-mediated ligation.

[00173] Some of the nucleic acid constructs disclosed herein are bidirectional constructs that can be inserted into and expressed from the target genomic locus in either orientation. Such nucleic acid constructs can comprise a first segment comprising a first coding sequence for a first retinoschisin protein or fragment or variant thereof and a second segment comprising a reverse complement of a second coding sequence for a second retinoschisin protein or fragment or variant thereof. The second segment can be, for example, located 3' of the first segment in the nucleic acid construct.

[00174] The first segment and the second segment can be linked directly together or can be linked by a linker such as a peptide linker. The peptide linker can be any suitable length. For example, the linker can be between about 5 to about 2000 nucleotides in length. As an example, the linker sequence can be about 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 150, 200, 250, 300, 500, 1000, 1500, 2000, or more nucleotides in length.

[00175] In some bidirectional constructs, the first retinoschisin protein or fragment or variant thereof is identical to the second retinoschisin protein or fragment or variant thereof. In other bidirectional constructs, the first retinoschisin protein or fragment or variant thereof is different from the second retinoschisin protein or fragment or variant thereof.

[00176] In some bidirectional constructs, the codon usage in the first coding sequence is the same as the codon usage in the second coding sequence. In other bidirectional constructs, the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence in order to reduce hairpin formation. Such a reverse complement forms base pairs with

fewer than all nucleotides of the coding sequence in the first segment, but it can optionally encode the same polypeptide.

[00177] The second segment can have any percentage of complementarity to the first segment. For example, the second segment sequence can have at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 55%, at least about 60%, at least about 65%, at least about 70%, at least about 75%, at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 97%, or at least about 99% complementarity to the first segment. As another example, the second segment sequence can have less than about 30%, less than about 35%, less than about 40%, less than about 45%, less than about 50%, less than about 55%, less than about 60%, less than about 65%, less than about 70%, less than about 75%, less than about 80%, less than about 85%, less than about 90%, less than about 95%, less than about 97%, or less than about 99% complementarity to the first segment. The reverse complement of the second coding sequence can be, in some nucleic acid constructs, not substantially complementary (e.g., not more than 70% complementary) to the first coding sequence, not substantially complementary to a fragment of the first coding sequence, highly complementary (e.g., at least 90% complementary) to the first coding sequence, highly complementary to a fragment of the first coding sequence, about 50% to about 80% identical to the reverse complement of the first coding sequence, or about 60% to about 100% identical to the reverse complement of the first coding sequence.

[00178] The bidirectional constructs can, in some cases, comprise one or more (e.g., two) polyadenylation signal sequences. In some bidirectional constructs, the first segment can comprise a first polyadenylation signal sequence. In some bidirectional constructs, the first segment can comprise a second polyadenylation signal sequence. In some bidirectional constructs, the first segment can comprise a first polyadenylation signal sequence, and the second segment can comprise a second polyadenylation signal sequence (e.g., a reverse complement of a polyadenylation signal sequence). In some bidirectional constructs, the first segment can comprise a first polyadenylation signal sequence located 3' of the first coding sequence. In some bidirectional constructs, the second segment can comprise a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence. In some bidirectional constructs, the first segment can comprise a first polyadenylation signal sequence located 3' of the first coding sequence, and the second

segment can comprise a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence. The first and second polyadenylation signal sequences can be the same or different. In one example, the first and second polyadenylation signals are different.

[00179] The bidirectional constructs can, in some cases, can comprise one or more (e.g., two) splice acceptor sites. In some bidirectional constructs, the first segment can comprise a first splice acceptor site. In some bidirectional constructs, the first segment can comprise a second splice acceptor site. In some bidirectional constructs, the first segment can comprise a first splice acceptor site, and the second segment can comprise a second splice acceptor site (e.g., a reverse complement of a splice acceptor site). In some bidirectional constructs, the first segment comprises a first splice acceptor site located 5' of the first coding sequence. In some bidirectional constructs, the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence. In some bidirectional constructs, the first segment comprises a first splice acceptor site located 5' of the first coding sequence, and the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence. The first and second splice acceptor sites can be the same or different. In one example, the first and second splice acceptor sites are different. The first and/or the second splice acceptor site can be from an *RS1* gene (e.g., from intron 1 of an *RS1* gene) such as a human *RS1* gene.

[00180] Some bidirectional constructs can comprise a promoter that drives expression of the first retinoschisin protein or fragment or variant thereof and/or the reverse complement of a promoter that drives expression of the second retinoschisin protein or fragment or variant thereof. Alternatively, a bidirectional construct can be a construct that does not comprise a promoter that drives expression of the first retinoschisin protein or fragment or variant thereof or the second retinoschisin protein or fragment or variant thereof (i.e., a promoterless construct).

[00181] One or both of the coding sequences can be codon-optimized for expression in a host cell. In some bidirectional constructs, only one of the coding sequences is codon-optimized. In some bidirectional constructs, the first coding sequence is codon-optimized. In some bidirectional constructs, the second coding sequence is codon-optimized. In some bidirectional constructs, both coding sequences are codon-optimized.

[00182] In an exemplary bidirectional construct, the second segment is located 3' of the first segment, both the first retinoschisin protein or fragment thereof and the second retinoschisin protein or fragment thereof are a human retinoschisin protein or fragment thereof, the first retinoschisin protein or fragment thereof is identical to the second retinoschisin protein or fragment thereof, both the first coding sequence and the second coding sequence comprise complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence, the first segment comprises a first polyadenylation signal sequence located 3' of the first coding sequence, and the second segment comprises a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence, the first segment comprises a first splice acceptor site located 5' of the first coding sequence, and the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence, the nucleic acid construct does not comprise a promoter that drives expression of the first retinoschisin protein or fragment thereof or the second retinoschisin protein or fragment thereof, and optionally the nucleic acid construct does not comprise a homology arm.

[00183] In an exemplary bidirectional construct, the first retinoschisin protein or fragment thereof and/or the second retinoschisin protein or fragment thereof comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 5. In an exemplary bidirectional construct, the first coding sequence and/or the second coding sequence comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 6, 8, or 9 or degenerate variants thereof. In an exemplary bidirectional construct, the first coding sequence comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 8, and the second coding sequence comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about

92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 9. In an exemplary bidirectional construct, the nucleic acid construct comprises, consists essentially of, or consists of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 46 or 47.

[00184] The nucleic acid constructs can include modifications or sequences that provide for additional desirable features (e.g., modified or regulated stability; tracking or detecting with a fluorescent label; a binding site for a protein or protein complex; and so forth). Nucleic acid constructs can comprise one or more fluorescent labels, purification tags, epitope tags, or a combination thereof. For example, a nucleic acid construct can comprise one or more fluorescent labels (e.g., fluorescent proteins or other fluorophores or dyes), such as at least 1, at least 2, at least 3, at least 4, or at least 5 fluorescent labels. Exemplary fluorescent labels include fluorophores such as fluorescein (e.g., 6-carboxyfluorescein (6-FAM)), Texas Red, HEX, Cy3, Cy5, Cy5.5, Pacific Blue, 5-(and-6)-carboxytetramethylrhodamine (TAMRA), and Cy7. A wide range of fluorescent dyes are available commercially for labeling oligonucleotides (e.g., from Integrated DNA Technologies). Such fluorescent labels (e.g., internal fluorescent labels) can be used, for example, to detect a nucleic acid construct that has been directly integrated into a cleaved target nucleic acid having protruding ends compatible with the ends of the nucleic acid construct. The label or tag can be at the 5' end, the 3' end, or internally within the nucleic acid construct. For example, a nucleic acid construct can be conjugated at 5' end with the IR700 fluorophore from Integrated DNA Technologies (5'IRDYE®700).

[00185] The nucleic acid construct can also comprise a conditional allele. The conditional allele can be a multifunctional allele, as described in US 2011/0104799, herein incorporated by reference in its entirety for all purposes. For example, the conditional allele can comprise: (a) an actuating sequence in sense orientation with respect to transcription of a target gene; (b) a drug selection cassette (DSC) in sense or antisense orientation; (c) a nucleotide sequence of interest (NSI) in antisense orientation; and (d) a conditional by inversion module (COIN, which utilizes an exon-splitting intron and an invertible gene-trap-like module) in reverse orientation. *See, e.g.*, US 2011/0104799. The conditional allele can further comprise recombinable units that recombine upon exposure to a first recombinase to form a conditional allele that (i) lacks the

actuating sequence and the DSC; and (ii) contains the NSI in sense orientation and the COIN in antisense orientation. *See, e.g.*, US 2011/0104799.

[00186] Nucleic acid constructs can also comprise a polynucleotide encoding a selection marker. Alternatively, the nucleic acid constructs can lack a polynucleotide encoding a selection marker. The selection marker can be contained in a selection cassette. Optionally, the selection cassette can be a self-deleting cassette. *See, e.g.,* US 8,697,851 and US 2013/0312129, each of which is herein incorporated by reference in its entirety for all purposes. As an example, the self-deleting cassette can comprise a Crei gene (comprises two exons encoding a Cre recombinase, which are separated by an intron) operably linked to a mouse *Prm1* promoter and a neomycin resistance gene operably linked to a human ubiquitin promoter. By employing the *Prm1* promoter, the self-deleting cassette can be deleted specifically in male germ cells of F0 animals. Exemplary selection markers include neomycin phosphotransferase (neo^r), hygromycin B phosphotransferase (hyg^r), puromycin-N-acetyltransferase ($puro^r$), blasticidin S deaminase (bsr^r), xanthine/guanine phosphoribosyl transferase (gpt), or herpes simplex virus thymidine kinase (HSV-k), or a combination thereof. The polynucleotide encoding the selection marker can be operably linked to a promoter active in a cell being targeted. Examples of promoters are described elsewhere herein.

[00187] The nucleic acid construct can also comprise a reporter gene. Exemplary reporter genes include those encoding luciferase, β-galactosidase, green fluorescent protein (GFP), enhanced green fluorescent protein (eGFP), cyan fluorescent protein (CFP), yellow fluorescent protein (YFP), enhanced yellow fluorescent protein (eYFP), blue fluorescent protein (BFP), enhanced blue fluorescent protein (eBFP), DsRed, ZsGreen, MmGFP, mPlum, mCherry, tdTomato, mStrawberry, J-Red, mOrange, mKO, mCitrine, Venus, YPet, Emerald, CyPet, Cerulean, T-Sapphire, and alkaline phosphatase. Such reporter genes can be operably linked to a promoter active in a cell being targeted. Examples of promoters are described elsewhere herein.

[00188] The nucleic acid construct can also comprise one or more expression cassettes or deletion cassettes. A given cassette can comprise one or more of a nucleotide sequence of interest, a polynucleotide encoding a selection marker, and a reporter gene, along with various regulatory components that influence expression. Examples of selectable markers and reporter genes that can be included are discussed in detail elsewhere herein.

[00189] The nucleic acid construct can comprise a nucleic acid flanked with site-specific recombination target sequences. Alternatively, the nucleic acid construct can comprise one or more site-specific recombination target sequences. Although the entire nucleic acid construct can be flanked by such site-specific recombination target sequences, any region or individual polynucleotide of interest within the nucleic acid construct can also be flanked by such sites. Site-specific recombination target sequences, which can flank the nucleic acid construct or any polynucleotide of interest in the nucleic acid construct can include, for example, loxP, lox511, lox2272, lox66, lox71, loxM2, lox5171, FRT, FRT11, FRT71, attp, att, FRT, rox, or a combination thereof. In one example, the site-specific recombination sites flank a polynucleotide encoding a selection marker and/or a reporter gene contained within the nucleic acid construct. Following integration of the nucleic acid construct at a targeted locus, the sequences between the site-specific recombination sites can be removed.

[00190] Nucleic acid constructs can also comprise one or more restriction sites for restriction endonucleases (i.e., restriction enzymes), which include Type I, Type II, Type III, and Type IV endonucleases. Type I and Type III restriction endonucleases recognize specific recognition sites, but typically cleave at a variable position from the nuclease binding site, which can be hundreds of base pairs away from the cleavage site (recognition site). In Type II systems the restriction activity is independent of any methylase activity, and cleavage typically occurs at specific sites within or near to the binding site. Most Type II enzymes cut palindromic sequences, however Type IIa enzymes recognize non-palindromic recognition sites and cleave outside of the recognition site, Type IIb enzymes cut sequences twice with both sites outside of the recognition site, and Type IIs enzymes recognize an asymmetric recognition site and cleave on one side and at a defined distance of about 1-20 nucleotides from the recognition site. Type IV restriction enzymes target methylated DNA. Restriction enzymes are further described and classified, for example in the REBASE database (webpage at rebase.neb.com; Roberts et al., (2003) *Nucleic Acids Res.* 31:418-420; Roberts et al., (2003) *Nucleic Acids Res.* 31:1805-1812; and Belfort et al. (2002) in Mobile DNA II, pp. 761-783, Eds. Craigie et al., (ASM Press, Washington, DC)).

[00191] The nucleic acid constructs disclosed herein can also comprise additional coding sequences. For example, some nucleic acid constructs disclosed herein can comprise a sequence encoding a guide RNA that targets the target genomic locus (e.g., that targets *RS1*, such as intron

1 of *RS1*). The sequence encoding the guide RNA can be operably linked to a promoter, such as a U6 promoter. In some nucleic acid constructs, the guide RNA expression cassette is located 3' (downstream) of the retinoschisin coding sequence(s). In some bidirectional nucleic acid constructs, the guide RNA expression cassette is located between the first segment and the second segment.

III. Vectors Comprising Nucleic Acid Constructs

[00192] Also provided herein are vectors comprising the nucleic acid constructs (i.e., exogenous donor nucleic acids) comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus. Also provided herein are vectors comprising the nucleic acids encoding nuclease agents (e.g., targeting an endogenous *RS1* locus) disclosed elsewhere herein. Also provided herein are vectors comprising the nucleic acid constructs and/or nucleic acids encoding nuclease agents (e.g., targeting an endogenous *RS1* locus) disclosed elsewhere herein (e.g., vectors comprising the nucleic acid construct and a DNA encoding a guide RNA). A vector can comprise additional sequences such as, for example, replication origins, promoters, and genes encoding antibiotic resistance. Some such vectors comprise homology arms corresponding to target sites in the target genomic locus. Other such vectors do not comprise any homology arms.

[00193] Some vectors may be circular. Alternatively, the vector may be linear. The vector can be in the packaged for delivered via a lipid nanoparticle, liposome, non-lipid nanoparticle, or viral capsid. Non-limiting exemplary vectors include plasmids, phagemids, cosmids, artificial chromosomes, minichromosomes, transposons, viral vectors, and expression vectors.

[00194] The vectors can be, for example, viral vectors such as adeno-associated virus (AAV) vectors. The AAV may be any suitable serotype and may be a single-stranded AAV (ssAAV) or a self-complementary AAV (scAAV). Other exemplary viruses/viral vectors include retroviruses, adenoviruses, vaccinia viruses, poxviruses, and herpes simplex viruses. The viruses can infect dividing cells, non-dividing cells, or both dividing and non-dividing cells. The viruses can integrate into the host genome or alternatively do not integrate into the host genome. Such viruses can also be engineered to have reduced immunity. The viruses can be replication-competent or can be replication-defective (e.g., defective in one or more genes necessary for additional rounds of virion replication and/or packaging). Viruses can cause transient expression,

long-lasting expression (e.g., at least 1 week, 2 weeks, 1 month, 2 months, or 3 months), or permanent expression (e.g., of Cas9 and/or gRNA). Exemplary viral titers (e.g., AAV titers) include 10^{12}, 10^{13}, 10^{14}, 10^{15}, and 10^{16} vector genomes/mL. Exemplary viral titers (e.g., AAV titers) include about 10^{12}, about 10^{13}, about 10^{14}, about 10^{15}, and about 10^{16} vector genomes (vg)/mL, or between about 10^{12} to about 10^{16}, between about 10^{12} to about 10^{15}, between about 10^{12} to about 10^{14}, between about 10^{12} to about 10^{13}, between about 10^{13} to about 10^{16}, between about 10^{14} to about 10^{16}, between about 10^{15} to about 10^{16}, or between about 10^{13} to about 10^{15} vg/mL. Other exemplary viral titers (e.g., AAV titers) include about 10^{12}, about 10^{13}, about 10^{14}, about 10^{15}, and about 10^{16} vector genomes (vg)/kg of body weight, or between about 10^{12} to about 10^{16}, between about 10^{12} to about 10^{15}, between about 10^{12} to about 10^{14}, between about 10^{12} to about 10^{13}, between about 10^{13} to about 10^{16}, between about 10^{14} to about 10^{16}, between about 10^{15} to about 10^{16}, or between about 10^{13} to about 10^{15} vg/kg of body weight.

[00195] The ssDNA AAV genome consists of two open reading frames, Rep and Cap, flanked by two inverted terminal repeats that allow for synthesis of the complementary DNA strand. When constructing an AAV transfer plasmid, the transgene is placed between the two ITRs, and Rep and Cap can be supplied *in trans*. In addition to Rep and Cap, AAV can require a helper plasmid containing genes from adenovirus. These genes (E4, E2a, and VA) mediate AAV replication. For example, the transfer plasmid, Rep/Cap, and the helper plasmid can be transfected into HEK293 cells containing the adenovirus gene E1+ to produce infectious AAV particles. Alternatively, the Rep, Cap, and adenovirus helper genes may be combined into a single plasmid. Similar packaging cells and methods can be used for other viruses, such as retroviruses.

[00196] Multiple serotypes of AAV have been identified. These serotypes differ in the types of cells they infect (i.e., their tropism), allowing preferential transduction of specific cell types. Serotypes for photoreceptor cells include AAV2, AAV5, and AAV8. Serotypes for retinal pigment epithelium tissue include AAV1, AAV2, AAV4, AAV5, and AAV8. In a specific example, the AAV vector comprising the nucleic acid construct can be AAV2, AAV5, or AAV8.

[00197] Tropism can be further refined through pseudotyping, which is the mixing of a capsid and a genome from different viral serotypes. For example AAV2/5 indicates a virus containing the genome of serotype 2 packaged in the capsid from serotype 5. Use of pseudotyped viruses can improve transduction efficiency, as well as alter tropism. Hybrid capsids derived from

different serotypes can also be used to alter viral tropism. For example, AAV-DJ contains a hybrid capsid from eight serotypes and displays high infectivity across a broad range of cell types *in vivo*. AAV-DJ8 is another example that displays the properties of AAV-DJ but with enhanced brain uptake. AAV serotypes can also be modified through mutations. Examples of mutational modifications of AAV2 include Y444F, Y500F, Y730F, and S662V. Examples of mutational modifications of AAV3 include Y705F, Y731F, and T492V. Examples of mutational modifications of AAV6 include S663V and T492V. Other pseudotyped/modified AAV variants include AAV2/1, AAV2/6, AAV2/7, AAV2/8, AAV2/9, AAV2.5, AAV8.2, and AAV/SASTG. In a specific example, the AAV is AAV7m8, an AAV variant that mediates highly efficient delivery to all retinal layers and to photoreceptors. *See, e.g.*, Dalkara et al. (2013) *Sci. Transl. Med.* 5:189ra76, herein incorporated by reference in its entirety for all purposes.

[00198] To accelerate transgene expression, self-complementary AAV (scAAV) variants can be used. Because AAV depends on the cell's DNA replication machinery to synthesize the complementary strand of the AAV's single-stranded DNA genome, transgene expression may be delayed. To address this delay, scAAV containing complementary sequences that are capable of spontaneously annealing upon infection can be used, eliminating the requirement for host cell DNA synthesis. However, single-stranded AAV (ssAAV) vectors can also be used.

[00199] To increase packaging capacity, longer transgenes may be split between two AAV transfer plasmids, the first with a 3' splice donor and the second with a 5' splice acceptor. Upon co-infection of a cell, these viruses form concatemers, are spliced together, and the full-length transgene can be expressed. Although this allows for longer transgene expression, expression is less efficient. Similar methods for increasing capacity utilize homologous recombination. For example, a transgene can be divided between two transfer plasmids but with substantial sequence overlap such that co-expression induces homologous recombination and expression of the full-length transgene.

IV. Lipid Nanoparticles Comprising Nucleic Acid Constructs

[00200] Also provided herein are lipid nanoparticles comprising the nucleic acid constructs (i.e., exogenous donor nucleic acids) comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus. Also provided herein are lipid nanoparticles comprising the nucleic acids

encoding nuclease agents (e.g., targeting an endogenous *RS1* locus) disclosed elsewhere herein. Also provided herein are lipid nanoparticles comprising the nucleic acid constructs and the nucleic acids encoding nuclease agents (e.g., targeting an endogenous *RS1* locus) disclosed elsewhere herein.

[00201] Lipid formulations can protect biological molecules from degradation while improving their cellular uptake. Lipid nanoparticles are particles comprising a plurality of lipid molecules physically associated with each other by intermolecular forces. These include microspheres (including unilamellar and multilamellar vesicles, e.g., liposomes), a dispersed phase in an emulsion, micelles, or an internal phase in a suspension. Such lipid nanoparticles can be used to encapsulate one or more nucleic acids or proteins for delivery. Formulations which contain cationic lipids are useful for delivering polyanions such as nucleic acids. Other lipids that can be included are neutral lipids (i.e., uncharged or zwitterionic lipids), anionic lipids, helper lipids that enhance transfection, and stealth lipids that increase the length of time for which nanoparticles can exist *in vivo*. Examples of suitable cationic lipids, neutral lipids, anionic lipids, helper lipids, and stealth lipids can be found in WO 2016/010840 A1 and WO 2017/173054 A1, each of which is herein incorporated by reference in its entirety for all purposes. An exemplary lipid nanoparticle can comprise a cationic lipid and one or more other components. In one example, the other component can comprise a helper lipid such as cholesterol. In another example, the other components can comprise a helper lipid such as cholesterol and a neutral lipid such as DSPC. In another example, the other components can comprise a helper lipid such as cholesterol, an optional neutral lipid such as DSPC, and a stealth lipid such as S010, S024, S027, S031, or S033.

[00202] The LNP may contain one or more or all of the following: (i) a lipid for encapsulation and for endosomal escape; (ii) a neutral lipid for stabilization; (iii) a helper lipid for stabilization; and (iv) a stealth lipid. *See, e.g.*, Finn et al. (2018) *Cell Rep.* 22(9):2227-2235 and WO 2017/173054 A1, each of which is herein incorporated by reference in its entirety for all purposes. In certain LNPs, the cargo can further comprise a nuclease agent. In certain LNPs, the cargo can further comprise a guide RNA or a nucleic acid encoding a guide RNA. In certain LNPs, the cargo can further comprise an mRNA encoding a Cas nuclease, such as Cas9, and a guide RNA or a nucleic acid encoding a guide RNA. In certain LNPs, the cargo can include an mRNA encoding a Cas nuclease, such as Cas9, a guide RNA or a nucleic acid encoding a guide

RNA, and the nucleic acid construct.

[00203] The lipid for encapsulation and endosomal escape can be a cationic lipid. The lipid can also be a biodegradable lipid, such as a biodegradable ionizable lipid. One example of a suitable lipid is Lipid A or LP01, which is (9Z,12Z)-3-((4,4-bis(octyloxy)butanoyl)oxy)-2-((((3-(diethylamino)propoxy)carbonyl)oxy)methyl)propyl octadeca-9,12-dienoate, also called 3-((4,4-bis(octyloxy)butanoyl)oxy)-2-((((3-(diethylamino)propoxy)carbonyl)oxy)methyl)propyl (9Z,12Z)-octadeca-9,12-dienoate. *See, e.g.*, Finn et al. (2018) *Cell Rep.* 22(9):2227-2235 and WO 2017/173054 A1, each of which is herein incorporated by reference in its entirety for all purposes. Another example of a suitable lipid is Lipid B, which is ((5-((dimethylamino)methyl)-1,3-phenylene)bis(oxy))bis(octane-8,1-diyl)bis(decanoate), also called ((5-((dimethylamino)methyl)-1,3-phenylene)bis(oxy))bis(octane-8,1-diyl)bis(decanoate). Another example of a suitable lipid is Lipid C, which is 2-((4-(((3-(dimethylamino)propoxy)carbonyl)oxy)hexadecanoyl)oxy)propane-1,3-diyl(9Z,9'Z,12Z,12'Z)-bis(octadeca-9,12-dienoate). Another example of a suitable lipid is Lipid D, which is 3-(((3-(dimethylamino)propoxy)carbonyl)oxy)-13-(octanoyloxy)tridecyl 3-octylundecanoate. Other suitable lipids include heptatriaconta-6,9,28,31-tetraen-19-yl 4-(dimethylamino)butanoate (also known as Dlin-MC3-DMA (MC3))).

[00204] Some such lipids suitable for use in the LNPs described herein are biodegradable *in vivo*. For example, LNPs comprising such a lipid include those where at least 75% of the lipid is cleared from the plasma within 8, 10, 12, 24, or 48 hours, or 3, 4, 5, 6, 7, or 10 days. As another example, at least 50% of the LNP is cleared from the plasma within 8, 10, 12, 24, or 48 hours, or 3, 4, 5, 6, 7, or 10 days.

[00205] Such lipids may be ionizable depending upon the pH of the medium they are in. For example, in a slightly acidic medium, the lipids may be protonated and thus bear a positive charge. Conversely, in a slightly basic medium, such as, for example, blood where pH is approximately 7.35, the lipids may not be protonated and thus bear no charge. In some embodiments, the lipids may be protonated at a pH of at least about 9, 9.5, or 10. The ability of such a lipid to bear a charge is related to its intrinsic pKa. For example, the lipid may, independently, have a pKa in the range of from about 5.8 to about 6.2.

[00206] Neutral lipids function to stabilize and improve processing of the LNPs. Examples of suitable neutral lipids include a variety of neutral, uncharged or zwitterionic lipids. Examples of

neutral phospholipids suitable for use in the present disclosure include, but are not limited to, 5-heptadecylbenzene-1,3-diol (resorcinol), dipalmitoylphosphatidylcholine (DPPC), distearoylphosphatidylcholine (DSPC), phosphocholine (DOPC), dimyristoylphosphatidylcholine (DMPC), phosphatidylcholine (PLPC), 1,2-distearoyl-sn-glycero-3-phosphocholine (DAPC), phosphatidylethanolamine (PE), egg phosphatidylcholine (EPC), dilauryloylphosphatidylcholine (DLPC), dimyristoylphosphatidylcholine (DMPC), 1-myristoyl-2-palmitoyl phosphatidylcholine (MPPC), 1-palmitoyl-2-myristoyl phosphatidylcholine (PMPC), 1-palmitoyl-2-stearoyl phosphatidylcholine (PSPC), 1,2-diarachidoyl-sn-glycero-3-phosphocholine (DBPC), 1-stearoyl-2-palmitoyl phosphatidylcholine (SPPC), 1,2-dieicosenoyl-sn-glycero-3-phosphocholine (DEPC), palmitoyloleoyl phosphatidylcholine (POPC), lysophosphatidyl choline, dioleoyl phosphatidylethanolamine (DOPE), dilinoleoylphosphatidylcholine distearoylphosphatidylethanolamine (DSPE), dimyristoyl phosphatidylethanolamine (DMPE), dipalmitoyl phosphatidylethanolamine (DPPE), palmitoyloleoyl phosphatidylethanolamine (POPE), lysophosphatidylethanolamine, and combinations thereof. For example, the neutral phospholipid may be selected from the group consisting of distearoylphosphatidylcholine (DSPC) and dimyristoyl phosphatidyl ethanolamine (DMPE).

[00207] Helper lipids include lipids that enhance transfection. The mechanism by which the helper lipid enhances transfection can include enhancing particle stability. In certain cases, the helper lipid can enhance membrane fusogenicity. Helper lipids include steroids, sterols, and alkyl resorcinols. Examples of suitable helper lipids suitable include cholesterol, 5-heptadecylresorcinol, and cholesterol hemisuccinate. In one example, the helper lipid may be cholesterol or cholesterol hemisuccinate.

[00208] Stealth lipids include lipids that alter the length of time the nanoparticles can exist in vivo. Stealth lipids may assist in the formulation process by, for example, reducing particle aggregation and controlling particle size. Stealth lipids may modulate pharmacokinetic properties of the LNP. Suitable stealth lipids include lipids having a hydrophilic head group linked to a lipid moiety.

[00209] The hydrophilic head group of stealth lipid can comprise, for example, a polymer moiety selected from polymers based on PEG (sometimes referred to as poly(ethylene oxide)), poly(oxazoline), poly(vinyl alcohol), poly(glycerol), poly(N- vinylpyrrolidone), polyaminoacids,

and poly N-(2-hydroxypropyl)methacrylamide. The term PEG means any polyethylene glycol or other polyalkylene ether polymer. In certain LNP formulations, the PEG, is a PEG-2K, also termed PEG 2000, which has an average molecular weight of about 2,000 daltons. *See, e.g.,* WO 2017/173054 A1, herein incorporated by reference in its entirety for all purposes.

[00210] The lipid moiety of the stealth lipid may be derived, for example, from diacylglycerol or diacylglycamide, including those comprising a dialkylglycerol or dialkylglycamide group having alkyl chain length independently comprising from about C4 to about C40 saturated or unsaturated carbon atoms, wherein the chain may comprise one or more functional groups such as, for example, an amide or ester. The dialkylglycerol or dialkylglycamide group can further comprise one or more substituted alkyl groups.

[00211] As one example, the stealth lipid may be selected from PEG-dilauroylglycerol, PEG-dimyristoylglycerol (PEG-DMG), PEG-dipalmitoylglycerol, PEG-distearoylglycerol (PEG-DSPE), PEG-dilaurylglycamide, PEG- dimyristylglycamide, PEG-dipalmitoylglycamide, and PEG-distearoylglycamide, PEG- cholesterol (l-[8'-(Cholest-5-en-3[beta]-oxy)carboxamido-3',6'-dioxaoctanyl]carbamoyl-[omega]-methyl-poly(ethylene glycol), PEG-DMB (3,4-ditetradecoxylbenzyl-[omega]-methyl-poly(ethylene glycol)ether), 1,2-dimyristoyl-sn- glycero-3-phosphoethanolamine-N-[methoxy(polyethylene glycol)-2000] (PEG2k- DMG), 1,2-distearoyl-sn-glycero-3-phosphoethanolamine-N-[methoxy(polyethylene glycol)-2000] (PEG2k-DSPE), 1,2-distearoyl-sn-glycerol, methoxypoly ethylene glycol (PEG2k-DSG), poly(ethylene glycol)-2000-dimethacrylate (PEG2k-DMA), and 1,2- distearyloxypropyl-3-amine-N-[methoxy(polyethylene glycol)-2000] (PEG2k-DSA). In one particular example, the stealth lipid may be PEG2k-DMG.

[00212] The LNPs can comprise different respective molar ratios of the component lipids in the formulation. The mol-% of the CCD lipid may be, for example, from about 30 mol-% to about 60 mol-%, from about 35 mol-% to about 55 mol-%, from about 40 mol-% to about 50 mol-%, from about 42 mol-% to about 47 mol-%, or about 45%. The mol-% of the helper lipid may be, for example, from about 30 mol-% to about 60 mol-%, from about 35 mol-% to about 55 mol-%, from about 40 mol-% to about 50 mol-%, from about 41 mol-% to about 46 mol-%, or about 44 mol-%. The mol-% of the neutral lipid may be, for example, from about 1 mol-% to about 20 mol-%, from about 5 mol-% to about 15 mol-%, from about 7 mol-% to about 12 mol-%, or about 9 mol-%. The mol-% of the stealth lipid may be, for example, from about 1 mol-%

to about 10 mol-%, from about 1 mol-% to about 5 mol-%, from about 1 mol-% to about 3 mol-%, about 2 mol-%, or about 1 mol-%.

[00213] The LNPs can have different ratios between the positively charged amine groups of the biodegradable lipid (N) and the negatively charged phosphate groups (P) of the nucleic acid to be encapsulated. This may be mathematically represented by the equation N/P. For example, the N/P ratio may be from about 0.5 to about 100, from about 1 to about 50, from about 1 to about 25, from about 1 to about 10, from about 1 to about 7, from about 3 to about 5, from about 4 to about 5, about 4, about 4.5, or about 5.

[00214] In some LNPs, the cargo can comprise Cas mRNA and gRNA. The Cas mRNA and gRNAs can be in different ratios. For example, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid ranging from about 25:1 to about 1:25, ranging from about 10:1 to about 1:10, ranging from about 5:1 to about 1:5, or about 1:1. Alternatively, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid from about 1:1 to about 1:5, or about 10:1. Alternatively, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid of about 1:10, 25:1, 10:1, 5:1, 3:1, 1:1, 1:3, 1:5, 1:10, or 1:25. Alternatively, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid of from about 1:1 to about 1:2. In specific examples, the ratio of Cas mRNA to gRNA can be about 1:1 or about 1:2.

[00215] Exemplary dosing of LNPs includes about 0.1, about 0.25, about 0.3, about 0.5, about 1, about 2, about 3, about 4, about 5, about 6, about 8, or about 10 mg/kg body weight (mpk) or about 0.1 to about 10, about 0.25 to about 10, about 0.3 to about 10, about 0.5 to about 10, about 1 to about 10, about 2 to about 10, about 3 to about 10, about 4 to about 10, about 5 to about 10, about 6 to about 10, about 8 to about 10, about 0.1 to about 8, about 0.1 to about 6, about 0.1 to about 5, about 0.1 to about 4, about 0.1 to about 3, about 0.1 to about 2, about 0.1 to about 1, about 0.1 to about 0.5, about 0.1 to about 0.3, about 0.1 to about 0.25, about 0.25 to about 8, about 0.3 to about 6, about 0.5 to about 5, about 1 to about 5, or about 2 to about 3 mg/kg body weight with respect to total RNA (Cas9 mRNA and gRNA) cargo content. Such LNPs can be administered, for example, intravenously. In one example, LNP doses between about 0.01 mg/kg and about 10 mg/kg, between about 0.1 and about 10 mg/kg, or between about 0.01 and about 0.3 mg/kg can be used. For example, LNP doses of about 0.01, about 0.03, about 0.1, about 0.3, about 1, about 3, or about 10 mg/kg can be used. Additional exemplary dosing of LNPs includes about 0.1, about 0.25, about 0.3, about 0.5, about 1, about 2, about 3, about 4, about 5, about 6,

about 8, or about 10 mg/kg (mpk) body weight or about 0.1 to about 10, about 0.25 to about 10, about 0.3 to about 10, about 0.5 to about 10, about 1 to about 10, about 2 to about 10, about 3 to about 10, about 4 to about 10, about 5 to about 10, about 6 to about 10, about 8 to about 10, about 0.1 to about 8, about 0.1 to about 6, about 0.1 to about 5, about 0.1 to about 4, about 0.1 to about 3, about 0.1 to about 2, about 0.1 to about 1, about 0.1 to about 0.5, about 0.1 to about 0.3, about 0.1 to about 0.25, about 0.25 to about 8, about 0.3 to about 6, about 0.5 to about 5, about 1 to about 5, or about 2 to about 3 mg/kg body weight with respect to total RNA (Cas9 mRNA and gRNA) cargo content. Such LNPs can be administered, for example, intravenously. In one example, LNP doses between about 0.01 mg/kg and about 10 mg/kg, between about 0.1 and about 10 mg/kg, or between about 0.01 and about 0.3 mg/kg can be used. For example, LNP doses of about 0.01, about 0.03, about 0.1, about 0.3, about 0.5, about 1, about 2, about 3, or about 10 mg/kg can be used. In another example, LNP doses between about 0.5 and about 10, between about 0.5 and about 5, between about 0.5 and about 3, between about 1 and about 10, between about 1 and about 5, between about 1 and about 3, or between about 1 and about 2 mg/kg can be used.

V. Compositions Comprising Nucleic Acid Constructs and/or a Nuclease Agent or a Nucleic Acid Encoding a Nuclease Agent

[00216] Also provided herein are compositions comprising the nucleic acid constructs comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus, vectors, or lipid nanoparticles disclosed herein and a nuclease agent or a nucleic acid encoding the nuclease agent. Also provided herein are compositions comprising the nucleic acid constructs comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus, vectors, or lipid nanoparticles disclosed herein. Also provided herein are compositions comprising a nuclease agent or a nucleic acid encoding the nuclease agent (e.g., wherein the nuclease agent targets a *RS1* gene or locus) or vectors or lipid nanoparticles comprising the nuclease agent or the nucleic acid encoding the nuclease agent. Such compositions can be, for example, for use in expressing retinoschisin in a cell or for use in integrating a coding sequence for a retinoschisin protein or fragment or variant thereof into a target genomic locus in a cell. Such compositions can also be,

for example, for use in treating a subject with X-linked juvenile retinoschisis (XLRS). Such compositions can comprise a nucleic acid construct comprising the coding sequence for the retinoschisin protein or fragment thereof for integration into the target genomic locus (or a vector or lipid nanoparticle comprising the nucleic acid construct) and a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus. The nuclease agent can be a CRISPR/Cas system (e.g., a Cas protein and a guide RNA) or any other suitable nuclease agent. Examples of suitable nuclease agents are provided below.

A. CRISPR/Cas Systems

[00217] The methods and compositions disclosed herein can utilize Clustered Regularly Interspersed Short Palindromic Repeats (CRISPR)/CRISPR-associated (Cas) systems or components of such systems to modify a genome within a cell (e.g., an *RS1* locus). CRISPR/Cas systems include transcripts and other elements involved in the expression of, or directing the activity of, Cas genes. A CRISPR/Cas system can be, for example, a type I, a type II, a type III system, or a type V system (e.g., subtype V-A or subtype V-B). The methods and compositions disclosed herein can employ CRISPR/Cas systems by utilizing CRISPR complexes (comprising a guide RNA (gRNA) complexed with a Cas protein) for site-directed binding or cleavage of nucleic acids.

[00218] CRISPR/Cas systems used in the compositions and methods disclosed herein can be non-naturally occurring. A "non-naturally occurring" system includes anything indicating the involvement of the hand of man, such as one or more components of the system being altered or mutated from their naturally occurring state, being at least substantially free from at least one other component with which they are naturally associated in nature or being associated with at least one other component with which they are not naturally associated. For example, some CRISPR/Cas systems employ non-naturally occurring CRISPR complexes comprising a gRNA and a Cas protein that do not naturally occur together, employ a Cas protein that does not occur naturally, or employ a gRNA that does not occur naturally.

1. Cas Proteins

[00219] Cas proteins generally comprise at least one RNA recognition or binding domain that can interact with guide RNAs. Cas proteins can also comprise nuclease domains (e.g., DNase domains or RNase domains), DNA-binding domains, helicase domains, protein-protein interaction domains, dimerization domains, and other domains. Some such domains (e.g., DNase domains) can be from a native Cas protein. Other such domains can be added to make a modified Cas protein. A nuclease domain possesses catalytic activity for nucleic acid cleavage, which includes the breakage of the covalent bonds of a nucleic acid molecule. Cleavage can produce blunt ends or staggered ends, and it can be single-stranded or double-stranded. For example, a wild type Cas9 protein will typically create a blunt cleavage product. Alternatively, a wild type Cpf1 protein (e.g., FnCpf1) can result in a cleavage product with a 5-nucleotide 5' overhang, with the cleavage occurring after the 18th base pair from the PAM sequence on the non-targeted strand and after the 23rd base on the targeted strand. A Cas protein can have full cleavage activity to create a double-strand break at a target genomic locus (e.g., a double-strand break with blunt ends), or it can be a nickase that creates a single-strand break at a target genomic locus.

[00220] Examples of Cas proteins include Cas1, Cas1B, Cas2, Cas3, Cas4, Cas5, Cas5e (CasD), Cas6, Cas6e, Cas6f, Cas7, Cas8a1, Cas8a2, Cas8b, Cas8c, Cas9 (Csn1 or Csx12), Cas10, Cas10d, CasF, CasG, CasH, Csy1, Csy2, Csy3, Cse1 (CasA), Cse2 (CasB), Cse3 (CasE), Cse4 (CasC), Csc1, Csc2, Csa5, Csn2, Csm2, Csm3, Csm4, Csm5, Csm6, Cmr1, Cmr3, Cmr4, Cmr5, Cmr6, Csb1, Csb2, Csb3, Csx17, Csx14, Csx10, Csx16, CsaX, Csx3, Csx1, Csx15, Csf1, Csf2, Csf3, Csf4, and Cu1966, and homologs or modified versions thereof.

[00221] An exemplary Cas protein is a Cas9 protein or a protein derived from a Cas9 protein. Cas9 proteins are from a type II CRISPR/Cas system and typically share four key motifs with a conserved architecture. Motifs 1, 2, and 4 are RuvC-like motifs, and motif 3 is an HNH motif. Exemplary Cas9 proteins are from *Streptococcus pyogenes*, *Streptococcus thermophilus*, *Streptococcus sp.*, *Staphylococcus aureus*, *Nocardiopsis dassonvillei*, *Streptomyces pristinaespiralis*, *Streptomyces viridochromogenes*, *Streptomyces viridochromogenes*, *Streptosporangium roseum*, *Streptosporangium roseum*, *Alicyclobacillus acidocaldarius*, *Bacillus pseudomycoides*, *Bacillus selenitireducens*, *Exiguobacterium sibiricum*, *Lactobacillus delbrueckii*, *Lactobacillus salivarius*, *Microscilla marina*, *Burkholderiales bacterium*,

Polaromonas naphthalenivorans, *Polaromonas sp.*, *Crocosphaera watsonii*, *Cyanothece sp.*, *Microcystis aeruginosa*, *Synechococcus sp.*, *Acetohalobium arabaticum*, *Ammonifex degensii*, *Caldicelulosiruptor becscii*, *Candidatus Desulforudis*, *Clostridium botulinum*, *Clostridium difficile*, *Finegoldia magna*, *Natranaerobius thermophilus*, *Pelotomaculum thermopropionicum*, *Acidithiobacillus caldus*, *Acidithiobacillus ferrooxidans*, *Allochromatium vinosum*, *Marinobacter sp.*, *Nitrosococcus halophilus*, *Nitrosococcus watsoni*, *Pseudoalteromonas haloplanktis*, *Ktedonobacter racemifer*, *Methanohalobium evestigatum*, *Anabaena variabilis*, *Nodularia spumigena*, *Nostoc sp.*, *Arthrospira maxima*, *Arthrospira platensis*, *Arthrospira sp.*, *Lyngbya sp.*, *Microcoleus chthonoplastes*, *Oscillatoria sp.*, *Petrotoga mobilis*, *Thermosipho africanus*, *Acaryochloris marina*, *Neisseria meningitidis*, or *Campylobacter jejuni*. Additional examples of the Cas9 family members are described in WO 2014/131833, herein incorporated by reference in its entirety for all purposes. Cas9 from *S. pyogenes* (SpCas9) (e.g., assigned UniProt accession number Q99ZW2) is an exemplary Cas9 protein. An exemplary SpCas9 protein sequence is set forth in SEQ ID NO: 27 (encoded by the DNA sequence set forth in SEQ ID NO: 26). An exemplary SpCas9 cDNA sequence is set forth in SEQ ID NO: 28. Smaller Cas9 proteins (e.g., Cas9 proteins whose coding sequences are compatible with the maximum AAV packaging capacity when combined with a guide RNA coding sequence and regulatory elements for the Cas9 and guide RNA, such as SaCas9 and CjCas9 and Nme2Cas9) are other exemplary Cas9 proteins. For example, Cas9 from *S. aureus* (SaCas9) (e.g., assigned UniProt accession number J7RUA5) is another exemplary Cas9 protein. Likewise, Cas9 from *Campylobacter jejuni* (CjCas9) e.g., (assigned UniProt accession number Q0P897) is another exemplary Cas9 protein. *See, e.g.*, Kim et al. (2017) *Nat. Commun.* 8:14500, herein incorporated by reference in its entirety for all purposes. SaCas9 is smaller than SpCas9, and CjCas9 is smaller than both SaCas9 and SpCas9. Cas9 from *Neisseria meningitidis* (Nme2Cas9) is another exemplary Cas9 protein. *See, e.g.*, Edraki et al. (2019) *Mol. Cell* 73(4):714-726, herein incorporated by reference in its entirety for all purposes. Cas9 proteins from *Streptococcus thermophilus* (e.g., *Streptococcus thermophilus* LMD-9 Cas9 encoded by the CRISPR1 locus (St1Cas9) or *Streptococcus thermophilus* Cas9 from the CRISPR3 locus (St3Cas9)) are other exemplary Cas9 proteins. Cas9 from *Francisella novicida* (FnCas9) or the RHA *Francisella novicida* Cas9 variant that recognizes an alternative PAM (E1369R/E1449H/R1556A substitutions) are other exemplary Cas9 proteins. These and other exemplary Cas9 proteins are reviewed, e.g., in Cebrian-Serrano

and Davies (2017) *Mamm. Genome* 28(7):247-261, herein incorporated by reference in its entirety for all purposes. Examples of Cas9 coding sequences, Cas9 mRNAs, and Cas9 protein sequences are provided in WO 2013/176772, WO 2014/065596, WO 2016/106121, and WO 2019/067910, each of which is herein incorporated by reference in its entirety for all purposes. Specific examples of ORFs and Cas9 amino acid sequences are provided in Table 30 at paragraph [0449] WO 2019/067910, and specific examples of Cas9 mRNAs and ORFs are provided in paragraphs [0214]-[0234] of WO 2019/067910. As one example, a Cas9 protein can comprise, consist essentially of, or consist of the sequence set forth in SEQ ID NO: 6242. Such a Cas9 protein can be encoded by a mRNA comprising, consisting essentially of, or consisting of SEQ ID NO: 6243. As another example, a Cas9 protein can comprise, consist essentially of, or consist of the sequence set forth in SEQ ID NO: 6246. Such a Cas9 protein can be encoded by a mRNA comprising, consisting essentially of, or consisting of SEQ ID NO: 6245.

[00222] Another example of a Cas protein is a Cpf1 (CRISPR from *Prevotella* and *Francisella* 1) protein. Cpf1 is a large protein (about 1300 amino acids) that contains a RuvC-like nuclease domain homologous to the corresponding domain of Cas9 along with a counterpart to the characteristic arginine-rich cluster of Cas9. However, Cpf1 lacks the HNH nuclease domain that is present in Cas9 proteins, and the RuvC-like domain is contiguous in the Cpf1 sequence, in contrast to Cas9 where it contains long inserts including the HNH domain. *See, e.g.*, Zetsche et al. (2015) *Cell* 163(3):759-771, herein incorporated by reference in its entirety for all purposes. Exemplary Cpf1 proteins are from *Francisella tularensis 1*, *Francisella tularensis subsp. novicida*, *Prevotella albensis*, *Lachnospiraceae bacterium MC2017 1*, *Butyrivibrio proteoclasticus*, *Peregrinibacteria bacterium GW2011_GWA2_33_10*, *Parcubacteria bacterium GW2011_GWC2_44_17*, *Smithella sp. SCADC*, *Acidaminococcus sp. BV3L6*, *Lachnospiraceae bacterium MA2020*, *Candidatus Methanoplasma termitum*, *Eubacterium eligens*, *Moraxella bovoculi 237*, *Leptospira inadai*, *Lachnospiraceae bacterium ND2006*, *Porphyromonas crevioricanis 3*, *Prevotella disiens*, and *Porphyromonas macacae*. Cpf1 from *Francisella novicida* U112 (FnCpf1; assigned UniProt accession number A0Q7Q2) is an exemplary Cpf1 protein.

[00223] Cas proteins can be wild type proteins (i.e., those that occur in nature), modified Cas proteins (i.e., Cas protein variants), or fragments of wild type or modified Cas proteins. Cas proteins can also be active variants or fragments with respect to catalytic activity of wild type or

modified Cas proteins. Active variants or fragments with respect to catalytic activity can comprise at least 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or more sequence identity to the wild type or modified Cas protein or a portion thereof, wherein the active variants retain the ability to cut at a desired cleavage site and hence retain nick-inducing or double-strand-break-inducing activity. Assays for nick-inducing or double-strand-break-inducing activity are known and generally measure the overall activity and specificity of the Cas protein on DNA substrates containing the cleavage site.

[00224] Cas proteins can be modified to increase or decrease one or more of nucleic acid binding affinity, nucleic acid binding specificity, and enzymatic activity. Cas proteins can also be modified to change any other activity or property of the protein, such as stability. For example, one or more nuclease domains of the Cas protein can be modified, deleted, or inactivated, or a Cas protein can be truncated to remove domains that are not essential for the function of the protein or to optimize (e.g., enhance or reduce) the activity of or a property of the Cas protein.

[00225] One example of a modified Cas protein is the modified SpCas9-HF1 protein, which is a high-fidelity variant of *Streptococcus pyogenes* Cas9 harboring alterations (N497A/R661A/Q695A/Q926A) designed to reduce non-specific DNA contacts. *See, e.g.*, Kleinstiver et al. (2016) *Nature* 529(7587):490-495, herein incorporated by reference in its entirety for all purposes. Another example of a modified Cas protein is the modified eSpCas9 variant (K848A/K1003A/R1060A) designed to reduce off-target effects. *See, e.g.*, Slaymaker et al. (2016) *Science* 351(6268):84-88, herein incorporated by reference in its entirety for all purposes. Other SpCas9 variants include K855A and K810A/K1003A/R1060A. These and other modified Cas proteins are reviewed, e.g., in Cebrian-Serrano and Davies (2017) *Mamm. Genome* 28(7):247-261, herein incorporated by reference in its entirety for all purposes. Another example of a modified Cas9 protein is xCas9, which is a SpCas9 variant that can recognize an expanded range of PAM sequences. *See, e.g.*, Hu et al. (2018) *Nature* 556:57-63, herein incorporated by reference in its entirety for all purposes.

[00226] Cas proteins can comprise at least one nuclease domain, such as a DNase domain. For example, a wild type Cpf1 protein generally comprises a RuvC-like domain that cleaves both strands of target DNA, perhaps in a dimeric configuration. Cas proteins can also comprise at least two nuclease domains, such as DNase domains. For example, a wild type Cas9 protein generally comprises a RuvC-like nuclease domain and an HNH-like nuclease domain. The RuvC

and HNH domains can each cut a different strand of double-stranded DNA to make a double-stranded break in the DNA. *See, e.g.*, Jinek et al. (2012) *Science* 337:816-821, herein incorporated by reference in its entirety for all purposes.

[00227] One or more or all of the nuclease domains can be deleted or mutated so that they are no longer functional or have reduced nuclease activity. For example, if one of the nuclease domains is deleted or mutated in a Cas9 protein, the resulting Cas9 protein can be referred to as a nickase and can generate a single-strand break within a double-stranded target DNA but not a double-strand break (i.e., it can cleave the complementary strand or the non-complementary strand, but not both). If both of the nuclease domains are deleted or mutated, the resulting Cas protein (e.g., Cas9) will have a reduced ability to cleave both strands of a double-stranded DNA (e.g., a nuclease-null or nuclease-inactive Cas protein, or a catalytically dead Cas protein (dCas)). If none of the nuclease domains is deleted or mutated in a Cas9 protein, the Cas9 protein will retain double-strand-break-inducing activity. An example of a mutation that converts Cas9 into a nickase is a D10A (aspartate to alanine at position 10 of Cas9) mutation in the RuvC domain of Cas9 from *S. pyogenes*. Likewise, H939A (histidine to alanine at amino acid position 839), H840A (histidine to alanine at amino acid position 840), or N863A (asparagine to alanine at amino acid position N863) in the HNH domain of Cas9 from *S. pyogenes* can convert the Cas9 into a nickase. Other examples of mutations that convert Cas9 into a nickase include the corresponding mutations to Cas9 from *S. thermophilus*. *See, e.g.*, Sapranauskas et al. (2011) *Nucleic Acids Res.* 39(21):9275-9282 and WO 2013/141680, each of which is herein incorporated by reference in its entirety for all purposes. Such mutations can be generated using methods such as site-directed mutagenesis, PCR-mediated mutagenesis, or total gene synthesis. Examples of other mutations creating nickases can be found, for example, in WO 2013/176772 and WO 2013/142578, each of which is herein incorporated by reference in its entirety for all purposes. If all of the nuclease domains are deleted or mutated in a Cas protein (e.g., both of the nuclease domains are deleted or mutated in a Cas9 protein), the resulting Cas protein (e.g., Cas9) will have a reduced ability to cleave both strands of a double-stranded DNA (e.g., a nuclease-null or nuclease-inactive Cas protein). One specific example is a D10A/H840A *S. pyogenes* Cas9 double mutant or a corresponding double mutant in a Cas9 from another species when optimally aligned with *S. pyogenes* Cas9. Another specific example is a D10A/N863A *S. pyogenes* Cas9

double mutant or a corresponding double mutant in a Cas9 from another species when optimally aligned with *S. pyogenes* Cas9.

[00228] Examples of inactivating mutations in the catalytic domains of xCas9 are the same as those described above for SpCas9. Examples of inactivating mutations in the catalytic domains of *Staphylococcus aureus* Cas9 proteins are also known. For example, the *Staphylococcus aureus* Cas9 enzyme (SaCas9) may comprise a substitution at position N580 (e.g., N580A substitution) and a substitution at position D10 (e.g., D10A substitution) to generate a nuclease-inactive Cas protein. *See, e.g.*, WO 2016/106236, herein incorporated by reference in its entirety for all purposes. Examples of inactivating mutations in the catalytic domains of Nme2Cas9 are also known (e.g., combination of D16A and H588A). Examples of inactivating mutations in the catalytic domains of St1Cas9 are also known (e.g., combination of D9A, D598A, H599A, and N622A). Examples of inactivating mutations in the catalytic domains of St3Cas9 are also known (e.g., combination of D10A and N870A). Examples of inactivating mutations in the catalytic domains of CjCas9 are also known (e.g., combination of D8A and H559A). Examples of inactivating mutations in the catalytic domains of FnCas9 and RHA FnCas9 are also known (e.g., N995A).

[00229] Examples of inactivating mutations in the catalytic domains of Cpf1 proteins are also known. With reference to Cpf1 proteins from *Francisella novicida* U112 (FnCpf1), *Acidaminococcus* sp. BV3L6 (AsCpf1), *Lachnospiraceae bacterium* ND2006 (LbCpf1), and *Moraxella bovoculi* 237 (MbCpf1 Cpf1), such mutations can include mutations at positions 908, 993, or 1263 of AsCpf1 or corresponding positions in Cpf1 orthologs, or positions 832, 925, 947, or 1180 of LbCpf1 or corresponding positions in Cpf1 orthologs. Such mutations can include, for example one or more of mutations D908A, E993A, and D1263A of AsCpf1 or corresponding mutations in Cpf1 orthologs, or D832A, E925A, D947A, and D1180A of LbCpf1 or corresponding mutations in Cpf1 orthologs. *See, e.g.*, US 2016/0208243, herein incorporated by reference in its entirety for all purposes.

[00230] Cas proteins can also be operably linked to heterologous polypeptides as fusion proteins. For example, a Cas protein can be fused to a cleavage domain or an epigenetic modification domain. *See* WO 2014/089290, herein incorporated by reference in its entirety for all purposes. Cas proteins can also be fused to a heterologous polypeptide providing increased or

decreased stability. The fused domain or heterologous polypeptide can be located at the N-terminus, the C-terminus, or internally within the Cas protein.

[00231] As one example, a Cas protein can be fused to one or more heterologous polypeptides that provide for subcellular localization. Such heterologous polypeptides can include, for example, one or more nuclear localization signals (NLS) such as the monopartite SV40 NLS and/or a bipartite alpha-importin NLS for targeting to the nucleus, a mitochondrial localization signal for targeting to the mitochondria, an ER retention signal, and the like. *See, e.g.*, Lange et al. (2007) *J. Biol. Chem.* 282(8):5101-5105, herein incorporated by reference in its entirety for all purposes. Such subcellular localization signals can be located at the N-terminus, the C-terminus, or anywhere within the Cas protein. An NLS can comprise a stretch of basic amino acids and can be a monopartite sequence or a bipartite sequence. Optionally, a Cas protein can comprise two or more NLSs, including an NLS (e.g., an alpha-importin NLS or a monopartite NLS) at the N-terminus and an NLS (e.g., an SV40 NLS or a bipartite NLS) at the C-terminus. A Cas protein can also comprise two or more NLSs at the N-terminus and/or two or more NLSs at the C-terminus.

[00232] A Cas protein may, for example, be fused with 1-10 NLSs (e.g., fused with 1-5 NLSs or fused with one NLS. Where one NLS is used, the NLS may be linked at the N-terminus or the C-terminus of the Cas protein sequence. It may also be inserted within the Cas protein sequence. Alternatively, the Cas protein may be fused with more than one NLS. For example, the Cas protein may be fused with 2, 3, 4, or 5 NLSs. In a specific example, the Cas protein may be fused with two NLSs. In certain circumstances, the two NLSs may be the same (e.g., two SV40 NLSs) or different. For example, the Cas protein can be fused to two SV40 NLS sequences linked at the carboxy terminus. Alternatively, the Cas protein may be fused with two NLSs, one linked at the N-terminus and one at the C-terminus. In other examples, the Cas protein may be fused with 3 NLSs or with no NLS. The NLS may be a monopartite sequence, such as, e.g., the SV40 NLS, PKKKRKV (SEQ ID NO: 49) or PKKKRRV (SEQ ID NO: 50). The NLS may be a bipartite sequence, such as the NLS of nucleoplasmin, KRPAATKKAGQAKKKK (SEQ ID NO: 51). In a specific example, a single PKKKRKV (SEQ ID NO: 49) NLS may be linked at the C-terminus of the Cas protein. One or more linkers are optionally included at the fusion site.

[00233] Cas proteins can also be operably linked to a cell-penetrating domain or protein transduction domain. For example, the cell-penetrating domain can be derived from the HIV-1

TAT protein, the TLM cell-penetrating motif from human hepatitis B virus, MPG, Pep-1, VP22, a cell penetrating peptide from Herpes simplex virus, or a polyarginine peptide sequence. *See, e.g.*, WO 2014/089290 and WO 2013/176772, each of which is herein incorporated by reference in its entirety for all purposes. The cell-penetrating domain can be located at the N-terminus, the C-terminus, or anywhere within the Cas protein.

[00234] Cas proteins can also be operably linked to a heterologous polypeptide for ease of tracking or purification, such as a fluorescent protein, a purification tag, or an epitope tag. Examples of fluorescent proteins include green fluorescent proteins (e.g., GFP, GFP-2, tagGFP, turboGFP, eGFP, Emerald, Azami Green, Monomeric Azami Green, CopGFP, AceGFP, ZsGreenl), yellow fluorescent proteins (e.g., YFP, eYFP, Citrine, Venus, YPet, PhiYFP, ZsYellowl), blue fluorescent proteins (e.g., eBFP, eBFP2, Azurite, mKalamal, GFPuv, Sapphire, T-sapphire), cyan fluorescent proteins (e.g., eCFP, Cerulean, CyPet, AmCyanl, Midoriishi-Cyan), red fluorescent proteins (e.g., mKate, mKate2, mPlum, DsRed monomer, mCherry, mRFP1, DsRed-Express, DsRed2, DsRed-Monomer, HcRed-Tandem, HcRedl, AsRed2, eqFP611, mRaspberry, mStrawberry, Jred), orange fluorescent proteins (e.g., mOrange, mKO, Kusabira-Orange, Monomeric Kusabira-Orange, mTangerine, tdTomato), and any other suitable fluorescent protein. Examples of tags include glutathione-S-transferase (GST), chitin binding protein (CBP), maltose binding protein, thioredoxin (TRX), poly(NANP), tandem affinity purification (TAP) tag, myc, AcV5, AU1, AU5, E, ECS, E2, FLAG, hemagglutinin (HA), nus, Softag 1, Softag 3, Strep, SBP, Glu-Glu, HSV, KT3, S, S1, T7, V5, VSV-G, histidine (His), biotin carboxyl carrier protein (BCCP), and calmodulin.

[00235] Cas proteins can also be tethered to labeled nucleic acids or donor sequences. Such tethering (i.e., physical linking) can be achieved through covalent interactions or noncovalent interactions, and the tethering can be direct (e.g., through direct fusion or chemical conjugation, which can be achieved by modification of cysteine or lysine residues on the protein or intein modification) or can be achieved through one or more intervening linkers or adapter molecules such as streptavidin or aptamers. *See, e.g.*, Pierce et al. (2005) *Mini Rev. Med. Chem.* 5(1):41-55; Duckworth et al. (2007) *Angew. Chem. Int. Ed. Engl.* 46(46):8819-8822; Schaeffer and Dixon (2009) *Australian J. Chem.* 62(10):1328-1332; Goodman et al. (2009) *Chembiochem.* 10(9):1551-1557; and Khatwani et al. (2012) *Bioorg. Med. Chem.* 20(14):4532-4539, each of which is herein incorporated by reference in its entirety for all purposes. Noncovalent strategies

for synthesizing protein-nucleic acid conjugates include biotin-streptavidin and nickel-histidine methods. Covalent protein-nucleic acid conjugates can be synthesized by connecting appropriately functionalized nucleic acids and proteins using a wide variety of chemistries. Some of these chemistries involve direct attachment of the oligonucleotide to an amino acid residue on the protein surface (e.g., a lysine amine or a cysteine thiol), while other more complex schemes require post-translational modification of the protein or the involvement of a catalytic or reactive protein domain. Methods for covalent attachment of proteins to nucleic acids can include, for example, chemical cross-linking of oligonucleotides to protein lysine or cysteine residues, expressed protein-ligation, chemoenzymatic methods, and the use of photoaptamers. The labeled nucleic acid or donor sequence can be tethered to the C-terminus, the N-terminus, or to an internal region within the Cas protein. In one example, the labeled nucleic acid or donor sequence is tethered to the C-terminus or the N-terminus of the Cas protein. Likewise, the Cas protein can be tethered to the 5' end, the 3' end, or to an internal region within the labeled nucleic acid or donor sequence. That is, the labeled nucleic acid or donor sequence can be tethered in any orientation and polarity. For example, the Cas protein can be tethered to the 5' end or the 3' end of the labeled nucleic acid or donor sequence.

[00236] Cas proteins can be provided in any form. For example, a Cas protein can be provided in the form of a protein, such as a Cas protein complexed with a gRNA. Alternatively, a Cas protein can be provided in the form of a nucleic acid encoding the Cas protein, such as an RNA (e.g., messenger RNA (mRNA)) or DNA. Optionally, the nucleic acid encoding the Cas protein can be codon optimized for efficient translation into protein in a particular cell or organism. For example, the nucleic acid encoding the Cas protein can be modified to substitute codons having a higher frequency of usage in a bacterial cell, a yeast cell, a human cell, a non-human cell, a mammalian cell, a rodent cell, a mouse cell, a rat cell, or any other host cell of interest, as compared to the naturally occurring polynucleotide sequence. When a nucleic acid encoding the Cas protein is introduced into the cell, the Cas protein can be transiently, conditionally, or constitutively expressed in the cell.

[00237] Cas proteins provided as mRNAs can be modified for improved stability and/or immunogenicity properties. The modifications may be made to one or more nucleosides within the mRNA. Examples of chemical modifications to mRNA nucleobases include pseudouridine, 1-methyl-pseudouridine, and 5-methyl-cytidine. For example, capped and polyadenylated Cas

mRNA containing N1-methyl pseudouridine can be used. Likewise, Cas mRNAs can be modified by depletion of uridine using synonymous codons.

[00238] Nucleic acids encoding Cas proteins can be stably integrated in the genome of a cell and operably linked to a promoter active in the cell. Alternatively, nucleic acids encoding Cas proteins can be operably linked to a promoter in an expression construct. Expression constructs include any nucleic acid constructs capable of directing expression of a gene or other nucleic acid sequence of interest (e.g., a Cas gene) and which can transfer such a nucleic acid sequence of interest to a target cell. For example, the nucleic acid encoding the Cas protein can be in a vector comprising a DNA encoding a gRNA. Alternatively, it can be in a vector or plasmid that is separate from the vector comprising the DNA encoding the gRNA. Promoters that can be used in an expression construct include promoters active, for example, in one or more of a eukaryotic cell, a human cell, a non-human cell, a mammalian cell, a non-human mammalian cell, a rodent cell, a mouse cell, a rat cell, a pluripotent cell, an embryonic stem (ES) cell, an adult stem cell, a developmentally restricted progenitor cell, an induced pluripotent stem (iPS) cell, or a one-cell stage embryo. Such promoters can be, for example, conditional promoters, inducible promoters, constitutive promoters, or tissue-specific promoters. Optionally, the promoter can be a bidirectional promoter driving expression of both a Cas protein in one direction and a guide RNA in the other direction. Such bidirectional promoters can consist of (1) a complete, conventional, unidirectional Pol III promoter that contains 3 external control elements: a distal sequence element (DSE), a proximal sequence element (PSE), and a TATA box; and (2) a second basic Pol III promoter that includes a PSE and a TATA box fused to the 5′ terminus of the DSE in reverse orientation. For example, in the H1 promoter, the DSE is adjacent to the PSE and the TATA box, and the promoter can be rendered bidirectional by creating a hybrid promoter in which transcription in the reverse direction is controlled by appending a PSE and TATA box derived from the U6 promoter. *See, e.g.*, US 2016/0074535, herein incorporated by references in its entirety for all purposes. Use of a bidirectional promoter to express genes encoding a Cas protein and a guide RNA simultaneously allow for the generation of compact expression cassettes to facilitate delivery.

[00239] Different promoters can be used to drive Cas expression or Cas9 expression. In some methods, small promoters are used so that the Cas or Cas9 coding sequence can fit into an AAV construct. For example, Cas or Cas9 and one or more gRNAs (e.g., 1 gRNA or 2 gRNAs or 3

gRNAs or 4 gRNAs) can be delivered via LNP-mediated delivery (e.g., in the form of RNA) or adeno-associated virus (AAV)-mediated delivery (e.g., AAV2-mediated delivery, AAV5-mediated delivery, AAV8-mediated delivery, or AAV7m8-mediated delivery). For example, the nuclease agent can be CRISPR/Cas9, and a Cas9 mRNA and a gRNA targeting an endogenous *RS1* locus (e.g., intron 1 of *RS1*) can be delivered via LNP-mediated delivery, or a DNA encoding Cas9 and a DNA encoding a gRNA targeting an endogenous *RS1* locus (e.g., intron 1 of *RS1*) can be delivered via AAV-mediated delivery. The Cas or Cas9 and the gRNA(s) can be delivered in a single AAV or via two separate AAVs. For example, a first AAV can carry a Cas or Cas9 expression cassette, and a second AAV can carry a gRNA expression cassette. Similarly, a first AAV can carry a Cas or Cas9 expression cassette, and a second AAV can carry two or more gRNA expression cassettes. Alternatively, a single AAV can carry a Cas or Cas9 expression cassette (e.g., Cas or Cas9 coding sequence operably linked to a promoter) and a gRNA expression cassette (e.g., gRNA coding sequence operably linked to a promoter). Similarly, a single AAV can carry a Cas or Cas9 expression cassette (e.g., Cas or Cas9 coding sequence operably linked to a promoter) and two or more gRNA expression cassettes (e.g., gRNA coding sequences operably linked to promoters). Different promoters can be used to drive expression of the gRNA, such as a U6 promoter or the small tRNA Gln. Likewise, different promoters can be used to drive Cas9 expression. For example, small promoters are used so that the Cas9 coding sequence can fit into an AAV construct. Similarly, small Cas9 proteins (e.g., SaCas9 or CjCas9 are used to maximize the AAV packaging capacity).

[00240] Cas proteins provided as mRNAs can be modified for improved stability and/or immunogenicity properties. The modifications may be made to one or more nucleosides within the mRNA. Examples of chemical modifications to mRNA nucleobases include pseudouridine, 1-methyl-pseudouridine, and 5-methyl-cytidine. mRNA encoding Cas proteins can also be capped. The cap can be, for example, a cap 1 structure in which the +1 ribonucleotide is methylated at the 2'O position of the ribose. The capping can, for example, give superior activity *in vivo* (e.g., by mimicking a natural cap), can result in a natural structure that reduce stimulation of the innate immune system of the host (e.g., can reduce activation of pattern recognition receptors in the innate immune system). mRNA encoding Cas proteins can also be polyadenylated (to comprise a poly(A) tail). mRNA encoding Cas proteins can also be modified to include pseudouridine (e.g., can be fully substituted with pseudouridine). As another example,

capped and polyadenylated Cas mRNA containing N1-methyl pseudouridine can be used. As another example, Cas mRNA fully substituted with pseudouridine can be used (i.e., all standard uracil residues are replaced with pseudouridine, a uridine isomer in which the uracil is attached with a carbon-carbon bond rather than nitrogen-carbon). Likewise, Cas mRNAs can be modified by depletion of uridine using synonymous codons. For example, capped and polyadenylated Cas mRNA fully substituted with pseudouridine can be used.

[00241] Cas mRNAs can comprise a modified uridine at least at one, a plurality of, or all uridine positions. The modified uridine can be a uridine modified at the 5 position (e.g., with a halogen, methyl, or ethyl). The modified uridine can be a pseudouridine modified at the 1 position (e.g., with a halogen, methyl, or ethyl). The modified uridine can be, for example, pseudouridine, N1-methyl-pseudouridine, 5-methoxyuridine, 5-iodouridine, or a combination thereof. In some examples, the modified uridine is 5-methoxyuridine. In some examples, the modified uridine is 5-iodouridine. In some examples, the modified uridine is pseudouridine. In some examples, the modified uridine is N1-methyl-pseudouridine. In some examples, the modified uridine is a combination of pseudouridine and N1-methyl-pseudouridine. In some examples, the modified uridine is a combination of pseudouridine and 5-methoxyuridine. In some examples, the modified uridine is a combination of N1-methyl pseudouridine and 5-methoxyuridine. In some examples, the modified uridine is a combination of 5-iodouridine and N1-methyl-pseudouridine. In some examples, the modified uridine is a combination of pseudouridine and 5-iodouridine. In some examples, the modified uridine is a combination of 5-iodouridine and 5-methoxyuridine.

[00242] Cas mRNAs disclosed herein can also comprise a 5' cap, such as a Cap0, Cap1, or Cap2. A 5' cap is generally a 7-methylguanine ribonucleotide (which may be further modified, e.g., with respect to ARCA) linked through a 5'-triphosphate to the 5' position of the first nucleotide of the 5'-to-3' chain of the mRNA (i.e., the first cap-proximal nucleotide). In Cap0, the riboses of the first and second cap-proximal nucleotides of the mRNA both comprise a 2'-hydroxyl. In Cap1, the riboses of the first and second transcribed nucleotides of the mRNA comprise a 2'-methoxy and a 2'-hydroxyl, respectively. In Cap2, the riboses of the first and second cap-proximal nucleotides of the mRNA both comprise a 2'-methoxy. *See, e.g.,* Katibah et al. (2014) *Proc. Natl. Acad. Sci. U.S.A.* 111(33):12025-30 and Abbas et al. (2017) *Proc. Natl. Acad. Sci. U.S.A.* 114(11):E2106-E2115, each of which is herein incorporated by reference in its

entirety for all purposes. Most endogenous higher eukaryotic mRNAs, including mammalian mRNAs such as human mRNAs, comprise Cap1 or Cap2. Cap0 and other cap structures differing from Cap1 and Cap2 may be immunogenic in mammals, such as humans, due to recognition as non-self by components of the innate immune system such as IFIT-1 and IFIT-5, which can result in elevated cytokine levels including type I interferon. Components of the innate immune system such as IFIT-1 and IFIT-5 may also compete with eIF4E for binding of an mRNA with a cap other than Cap1 or Cap2, potentially inhibiting translation of the mRNA.

[00243] A cap can be included co-transcriptionally. For example, ARCA (anti-reverse cap analog; Thermo Fisher Scientific Cat. No. AM8045) is a cap analog comprising a 7-methylguanine 3'-methoxy-5'-triphosphate linked to the 5' position of a guanine ribonucleotide which can be incorporated in vitro into a transcript at initiation. ARCA results in a Cap0 cap in which the 2' position of the first cap-proximal nucleotide is hydroxyl. *See, e.g.,* Stepinski et al. (2001) *RNA* 7:1486-1495, herein incorporated by reference in its entirety for all purposes.

[00244] CleanCap™ AG (m7G(5')ppp(5')(2'OMeA)pG; TriLink Biotechnologies Cat. No. N-7113) or CleanCap™ GG (m7G(5')ppp(5')(2'OMeG)pG; TriLink Biotechnologies Cat. No. N-7133) can be used to provide a Cap1 structure co-transcriptionally. 3'-O-methylated versions of CleanCap™ AG and CleanCap™ GG are also available from TriLink Biotechnologies as Cat. Nos. N-7413 and N-7433, respectively.

[00245] Alternatively, a cap can be added to an RNA post-transcriptionally. For example, Vaccinia capping enzyme is commercially available (New England Biolabs Cat. No. M2080S) and has RNA triphosphatase and guanylyltransferase activities, provided by its D1 subunit, and guanine methyltransferase, provided by its D12 subunit. As such, it can add a 7-methylguanine to an RNA, so as to give Cap0, in the presence of S-adenosyl methionine and GTP. *See, e.g.,* Guo and Moss (1990) *Proc. Natl. Acad. Sci. U.S.A.* 87:4023-4027 and Mao and Shuman (1994) *J. Biol. Chem.* 269:24472-24479, each of which is herein incorporated by reference in its entirety for all purposes.

[00246] Cas mRNAs can further comprise a poly-adenylated (poly-A or poly(A) or poly-adenine) tail. The poly-A tail can, for example, comprise at least 20, at least 30, at least 40, at least 50, at least 60, at least 70, at least 80, at least 90, or at least 100 adenines, and optionally up to 300 adenines. For example, the poly-A tail can comprise 95, 96, 97, 98, 99, or 100 adenine nucleotides.

2. Guide RNAs

[00247] A "guide RNA" or "gRNA" is an RNA molecule that binds to a Cas protein (e.g., Cas9 protein) and targets the Cas protein to a specific location within a target DNA. Guide RNAs can comprise two segments: a "DNA-targeting segment" (also called "guide sequence") and a "protein-binding segment." "Segment" includes a section or region of a molecule, such as a contiguous stretch of nucleotides in an RNA. Some gRNAs, such as those for Cas9, can comprise two separate RNA molecules: an "activator-RNA" (e.g., tracrRNA) and a "targeter-RNA" (e.g., CRISPR RNA or crRNA). Other gRNAs are a single RNA molecule (single RNA polynucleotide), which can also be called a "single-molecule gRNA," a "single-guide RNA," or an "sgRNA." *See, e.g.*, WO 2013/176772, WO 2014/065596, WO 2014/089290, WO 2014/093622, WO 2014/099750, WO 2013/142578, and WO 2014/131833, each of which is herein incorporated by reference in its entirety for all purposes. A guide RNA can refer to either a CRISPR RNA (crRNA) or the combination of a crRNA and a trans-activating CRISPR RNA (tracrRNA). The crRNA and tracrRNA can be associated as a single RNA molecule (single guide RNA or sgRNA) or in two separate RNA molecules (dual guide RNA or dgRNA). For Cas9, for example, a single-guide RNA can comprise a crRNA fused to a tracrRNA (e.g., via a linker). For Cpf1, for example, only a crRNA is needed to achieve binding to and/or cleavage of a target sequence. The terms "guide RNA" and "gRNA" include both double-molecule (i.e., modular) gRNAs and single-molecule gRNAs. In some of the methods and compositions disclosed herein, a gRNA is a *S. pyogenes* Cas9 gRNA or an equivalent thereof. In some of the methods and compositions disclosed herein, a gRNA is a *S. aureus* Cas9 gRNA or an equivalent thereof.

[00248] An exemplary two-molecule gRNA comprises a crRNA-like ("CRISPR RNA" or "targeter-RNA" or "crRNA" or "crRNA repeat") molecule and a corresponding tracrRNA-like ("trans-activating CRISPR RNA" or "activator-RNA" or "tracrRNA") molecule. A crRNA comprises both the DNA-targeting segment (single-stranded) of the gRNA and a stretch of nucleotides (i.e., the crRNA tail) that forms one half of the dsRNA duplex of the protein-binding segment of the gRNA. An example of a crRNA tail, located downstream (3') of the DNA-targeting segment, comprises, consists essentially of, or consists of GUUUUAGAGCUAUGCU (SEQ ID NO: 29) or GUUUUAGAGCUAUGCUGUUUUG (SEQ ID NO: 52). Any of the

DNA-targeting segments disclosed herein can be joined to the 5' end of SEQ ID NO: 29 or 52 to form a crRNA.

[00249] A corresponding tracrRNA (activator-RNA) comprises a stretch of nucleotides that forms the other half of the dsRNA duplex of the protein-binding segment of the gRNA. A stretch of nucleotides of a crRNA are complementary to and hybridize with a stretch of nucleotides of a tracrRNA to form the dsRNA duplex of the protein-binding domain of the gRNA. As such, each crRNA can be said to have a corresponding tracrRNA. Exemplary tracrRNA sequences comprise, consist essentially of, or consist of AGCAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUUGAAAAAGUGGCACC GAGUCGGUGCUUU (SEQ ID NO: 30), AAACAGCAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUUGAAAAAGUGG CACCGAGUCGGUGCUUUU (SEQ ID NO: 31), or GUUGGAACCAUUCAAAACAGCAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCA ACUUGAAAAAGUGGCACCGAGUCGGUGC (SEQ ID NO: 32).

[00250] In systems in which both a crRNA and a tracrRNA are needed, the crRNA and the corresponding tracrRNA hybridize to form a gRNA. In systems in which only a crRNA is needed, the crRNA can be the gRNA. The crRNA additionally provides the single-stranded DNA-targeting segment that hybridizes to the complementary strand of a target DNA. If used for modification within a cell, the exact sequence of a given crRNA or tracrRNA molecule can be designed to be specific to the species in which the RNA molecules will be used. *See, e.g.*, Mali et al. (2013) *Science* 339(6121):823-826; Jinek et al. (2012) *Science* 337(6096):816-821; Hwang et al. (2013) *Nat. Biotechnol.* 31(3):227-229; Jiang et al. (2013) *Nat. Biotechnol.* 31(3):233-239; and Cong et al. (2013) *Science* 339(6121):819-823, each of which is herein incorporated by reference in its entirety for all purposes.

[00251] The DNA-targeting segment (crRNA) of a given gRNA comprises a nucleotide sequence that is complementary to a sequence on the complementary strand of the target DNA, as described in more detail below. The DNA-targeting segment of a gRNA interacts with the target DNA in a sequence-specific manner via hybridization (i.e., base pairing). As such, the nucleotide sequence of the DNA-targeting segment may vary and determines the location within the target DNA with which the gRNA and the target DNA will interact. The DNA-targeting segment of a subject gRNA can be modified to hybridize to any desired sequence within a target

DNA. Naturally occurring crRNAs differ depending on the CRISPR/Cas system and organism but often contain a targeting segment of between 21 to 72 nucleotides length, flanked by two direct repeats (DR) of a length of between 21 to 46 nucleotides (*see, e.g.*, WO 2014/131833, herein incorporated by reference in its entirety for all purposes). In the case of *S. pyogenes*, the DRs are 36 nucleotides long and the targeting segment is 30 nucleotides long. The 3' located DR is complementary to and hybridizes with the corresponding tracrRNA, which in turn binds to the Cas protein.

[00252] The DNA-targeting segment can have, for example, a length of at least about 12, at least about 15, at least about 17, at least about 18, at least about 19, at least about 20, at least about 25, at least about 30, at least about 35, or at least about 40 nucleotides. Such DNA-targeting segments can have, for example, a length from about 12 to about 100, from about 12 to about 80, from about 12 to about 50, from about 12 to about 40, from about 12 to about 30, from about 12 to about 25, or from about 12 to about 20 nucleotides. For example, the DNA targeting segment can be from about 15 to about 25 nucleotides (e.g., from about 17 to about 20 nucleotides, or about 17, 18, 19, or 20 nucleotides). *See, e.g.*, US 2016/0024523, herein incorporated by reference in its entirety for all purposes. For Cas9 from *S. pyogenes*, a typical DNA-targeting segment is between 16 and 20 nucleotides in length or between 17 and 20 nucleotides in length. For Cas9 from *S. aureus*, a typical DNA-targeting segment is between 21 and 23 nucleotides in length. For Cpf1, a typical DNA-targeting segment is at least 16 nucleotides in length or at least 18 nucleotides in length.

[00253] In one example, the DNA-targeting segment can be about 20 nucleotides in length. However, shorter and longer sequences can also be used for the targeting segment (e.g., 15-25 nucleotides in length, such as 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, or 25 nucleotides in length). The degree of identity between the DNA-targeting segment and the corresponding guide RNA target sequence (or degree of complementarity between the DNA-targeting segment and the other strand of the guide RNA target sequence) can be, for example, about 75%, about 80%, about 85%, about 90%, about 95%, about 96%, about 97%, about 98%, about 99%, or about 100%. The DNA-targeting segment and the corresponding guide RNA target sequence can contain one or more mismatches. For example, the DNA-targeting segment of the guide RNA and the corresponding guide RNA target sequence can contain 1-4, 1-3, 1-2, 1, 2, 3, or 4 mismatches (e.g., where the total length of the guide RNA target sequence is at least 17, at least

18, at least 19, or at least 20 or more nucleotides). For example, the DNA-targeting segment of the guide RNA and the corresponding guide RNA target sequence can contain 1-4, 1-3, 1-2, 1, 2, 3, or 4 mismatches where the total length of the guide RNA target sequence 20 nucleotides.

[00254] As one example, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment (i.e., guide sequence) comprising, consisting essentially of, or consisting of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a

sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-6241. Examples of such guide sequences are set forth in **Tables 2 and 3**.

[00255] The guide RNA can target a human *RS1* gene. As one example, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment (i.e., guide sequence) comprising, consisting essentially of, or consisting of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989. Alternatively, a guide RNA

targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-4989.

[00256] The guide RNA can target a human *RS1* gene and be selected to avoid off-target effects. As one example, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment (i.e., guide sequence) comprising, consisting essentially of, or consisting of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a

DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351.

[00257] The guide RNA can target a human *RS1* gene. As one example, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment (i.e., guide sequence) comprising, consisting essentially of, or consisting of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at

least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304. Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304.

[00258] The guide RNA can target a mouse *Rs1* gene. As one example, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment (i.e., guide sequence) comprising, consisting essentially of, or consisting of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS:

4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment that is at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, or at least 99% identical to at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981). Alternatively, a guide RNA targeting an *RS1* gene can comprise a DNA-targeting segment comprising, consisting essentially of, or consisting of a sequence that differs by no more than 3, no more than 2, or no more than 1 nucleotide from at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the sequence (DNA-targeting segment) set forth in any one of SEQ ID NOS: 4990-6241 (e.g., SEQ ID NO: 5477 or 5981).

[00259] TracrRNAs can be in any form (e.g., full-length tracrRNAs or active partial tracrRNAs) and of varying lengths. They can include primary transcripts or processed forms. For example, tracrRNAs (as part of a single-guide RNA or as a separate molecule as part of a two-molecule gRNA) may comprise, consist essentially of, or consist of all or a portion of a wild type tracrRNA sequence (e.g., about or more than about 20, 26, 32, 45, 48, 54, 63, 67, 85, or more nucleotides of a wild type tracrRNA sequence). Examples of wild type tracrRNA sequences from *S. pyogenes* include 171-nucleotide, 89-nucleotide, 75-nucleotide, and 65-nucleotide versions. *See, e.g.*, Deltcheva et al. (2011) *Nature* 471(7340):602-607; WO 2014/093661, each of which is herein incorporated by reference in its entirety for all purposes. Examples of tracrRNAs within single-guide RNAs (sgRNAs) include the tracrRNA segments found within +48, +54, +67, and +85 versions of sgRNAs, where "+n" indicates that up to the +n nucleotide of wild type tracrRNA is included in the sgRNA. *See* US 8,697,359, herein incorporated by reference in its entirety for all purposes.

[00260] The percent complementarity between the DNA-targeting segment of the guide RNA and the complementary strand of the target DNA can be at least 60% (e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 97%, at least 98%, at least 99%, or 100%). The percent complementarity between the DNA-targeting segment

and the complementary strand of the target DNA can be at least 60% over about 20 contiguous nucleotides. As an example, the percent complementarity between the DNA-targeting segment and the complementary strand of the target DNA can be 100% over the 14 contiguous nucleotides at the 5' end of the complementary strand of the target DNA and as low as 0% over the remainder. In such a case, the DNA-targeting segment can be considered to be 14 nucleotides in length. As another example, the percent complementarity between the DNA-targeting segment and the complementary strand of the target DNA can be 100% over the seven contiguous nucleotides at the 5' end of the complementary strand of the target DNA and as low as 0% over the remainder. In such a case, the DNA-targeting segment can be considered to be 7 nucleotides in length. In some guide RNAs, at least 17 nucleotides within the DNA-targeting segment are complementary to the complementary strand of the target DNA. For example, the DNA-targeting segment can be 20 nucleotides in length and can comprise 1, 2, or 3 mismatches with the complementary strand of the target DNA. In one example, the mismatches are not adjacent to the region of the complementary strand corresponding to the protospacer adjacent motif (PAM) sequence (i.e., the reverse complement of the PAM sequence) (e.g., the mismatches are in the 5' end of the DNA-targeting segment of the guide RNA, or the mismatches are at least 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, or 19 base pairs away from the region of the complementary strand corresponding to the PAM sequence).

[00261] The protein-binding segment of a gRNA can comprise two stretches of nucleotides that are complementary to one another. The complementary nucleotides of the protein-binding segment hybridize to form a double-stranded RNA duplex (dsRNA). The protein-binding segment of a subject gRNA interacts with a Cas protein, and the gRNA directs the bound Cas protein to a specific nucleotide sequence within target DNA via the DNA-targeting segment.

[00262] Single-guide RNAs can comprise a DNA-targeting segment and a scaffold sequence (i.e., the protein-binding or Cas-binding sequence of the guide RNA). For example, such guide RNAs can have a 5' DNA-targeting segment joined to a 3' scaffold sequence. Exemplary scaffold sequences comprise, consist essentially of, or consist of:
GUUUUAGAGCUAGAAAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUUGA AAAAGUGGCACCGAGUCGGUGCU (version 1; SEQ ID NO: 33);
GUUGGAACCAUUCAAAACAGCAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCA ACUUGAAAAAGUGGCACCGAGUCGGUGC (version 2; SEQ ID NO: 34);

GUUUUAGAGCUAGAAAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUUGA AAAAGUGGCACCGAGUCGGUGC (version 3; SEQ ID NO: 35); GUUUAAGAGCUAUGCUGGAAACAGCAUAGCAAGUUUAAAUAAGGCUAGUCCGUU AUCAACUUGAAAAAGUGGCACCGAGUCGGUGC (version 4; SEQ ID NO: 36);GUUUUAGAGCUAGAAAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUU GAAAAAGUGGCACCGAGUCGGUGCUUUUUUU (version 5; SEQ ID NO: 37); GUUUUAGAGCUAGAAAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUUGA AAAAGUGGCACCGAGUCGGUGCUUUU (version 6; SEQ ID NO: 38); GUUUAAGAGCUAUGCUGGAAACAGCAUAGCAAGUUUAAAUAAGGCUAGUCCGUU AUCAACUUGAAAAAGUGGCACCGAGUCGGUGCUUUUUU (version 7; SEQ ID NO: 39); or GUUUUAGAGCUAGAAAUAGCAAGUUAAAAUAAGGCUAGUCCGUUAUCAACUUGG CACCGAGUCGGUGC (version 8; SEQ ID NO: 53). In some guide sgRNAs, the four terminal U residues of version 6 are not present. In some sgRNAs, only 1, 2, or 3 of the four terminal U residues of version 6 are present. Guide RNAs targeting any of the guide RNA target sequences disclosed herein can include, for example, a DNA-targeting segment on the 5' end of the guide RNA fused to any of the exemplary guide RNA scaffold sequences on the 3' end of the guide RNA. That is, any of the DNA-targeting segments disclosed herein can be joined to the 5' end of any one of the above scaffold sequences to form a single guide RNA (chimeric guide RNA).

[00263] Guide RNAs can include modifications or sequences that provide for additional desirable features (e.g., modified or regulated stability; subcellular targeting; tracking with a fluorescent label; a binding site for a protein or protein complex; and the like). That is, guide RNAs can include one or more modified nucleosides or nucleotides, or one or more non-naturally and/or naturally occurring components or configurations that are used instead of or in addition to the canonical A, G, C, and U residues. Examples of such modifications include, for example, a 5' cap (e.g., a 7-methylguanylate cap (m7G)); a 3' polyadenylated tail (i.e., a 3' poly(A) tail); a riboswitch sequence (e.g., to allow for regulated stability and/or regulated accessibility by proteins and/or protein complexes); a stability control sequence; a sequence that forms a dsRNA duplex (i.e., a hairpin); a modification or sequence that targets the RNA to a subcellular location (e.g., nucleus, mitochondria, chloroplasts, and the like); a modification or sequence that provides for tracking (e.g., direct conjugation to a fluorescent molecule,

conjugation to a moiety that facilitates fluorescent detection, a sequence that allows for fluorescent detection, and so forth); a modification or sequence that provides a binding site for proteins (e.g., proteins that act on DNA, including transcriptional activators, transcriptional repressors, DNA methyltransferases, DNA demethylases, histone acetyltransferases, histone deacetylases, and the like); and combinations thereof. Other examples of modifications include engineered stem loop duplex structures, engineered bulge regions, engineered hairpins 3' of the stem loop duplex structure, or any combination thereof. *See, e.g.*, US 2015/0376586, herein incorporated by reference in its entirety for all purposes. A bulge can be an unpaired region of nucleotides within the duplex made up of the crRNA-like region and the minimum tracrRNA-like region. A bulge can comprise, on one side of the duplex, an unpaired 5′-XXXY-3′ where X is any purine and Y can be a nucleotide that can form a wobble pair with a nucleotide on the opposite strand, and an unpaired nucleotide region on the other side of the duplex.

[00264] Unmodified nucleic acids can be prone to degradation. Exogenous nucleic acids can also induce an innate immune response. Modifications can help introduce stability and reduce immunogenicity. Guide RNAs can comprise modified nucleosides and modified nucleotides including, for example, one or more of the following: (1) alteration or replacement of one or both of the non-linking phosphate oxygens and/or of one or more of the linking phosphate oxygens in the phosphodiester backbone linkage (an exemplary backbone modification); (2) alteration or replacement of a constituent of the ribose sugar such as alteration or replacement of the 2' hydroxyl on the ribose sugar (an exemplary sugar modification); (3) replacement (e.g., wholesale replacement) of the phosphate moiety with dephospho linkers (an exemplary backbone modification); (4) modification or replacement of a naturally occurring nucleobase, including with a non-canonical nucleobase (an exemplary base modification); (5) replacement or modification of the ribose-phosphate backbone (an exemplary backbone modification); (6) modification of the 3' end or 5' end of the oligonucleotide (e.g., removal, modification or replacement of a terminal phosphate group or conjugation of a moiety, cap, or linker (such 3' or 5' cap modifications may comprise a sugar and/or backbone modification)); and (7) modification ore replacement of the sugar (an exemplary sugar modification). Other possible guide RNA modifications include modifications of or replacement of uracils or poly-uracil tracts. *See, e.g.*, WO 2015/048577 and US 2016/0237455, each of which is herein incorporated by reference in its entirety for all purposes. Similar modifications can be made to Cas-encoding nucleic acids, such

as Cas mRNAs. For example, Cas mRNAs can be modified by depletion of uridine using synonymous codons.

[00265] Chemical modifications such at hose listed above can be combined to provide modified gRNAs and/or mRNAs comprising residues (nucleosides and nucleotides) that can have two, three, four, or more modifications. For example, a modified residue can have a modified sugar and a modified nucleobase. In one example, every base of a gRNA is modified (e.g., all bases have a modified phosphate group, such as a phosphorothioate group). For example, all or substantially all of the phosphate groups of a gRNA can be replaced with phosphorothioate groups. Alternatively or additionally, a modified gRNA can comprise at least one modified residue at or near the 5' end. Alternatively or additionally, a modified gRNA can comprise at least one modified residue at or near the 3' end.

[00266] Some gRNAs comprise one, two, three or more modified residues. For example, at least 5%, at least 10%, at least 15%, at least 20%, at least 25%, at least 30%, at least 35%, at least 40%, at least 45%, at least 50%, at least 55%, at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, or 100% of the positions in a modified gRNA can be modified nucleosides or nucleotides.

[00267] Unmodified nucleic acids can be prone to degradation. Exogenous nucleic acids can also induce an innate immune response. Modifications can help introduce stability and reduce immunogenicity. Some gRNAs described herein can contain one or more modified nucleosides or nucleotides to introduce stability toward intracellular or serum-based nucleases. Some modified gRNAs described herein can exhibit a reduced innate immune response when introduced into a population of cells.

[00268] The gRNAs disclosed herein can comprise a backbone modification in which the phosphate group of a modified residue can be modified by replacing one or more of the oxygens with a different substituent. The modification can include the wholesale replacement of an unmodified phosphate moiety with a modified phosphate group as described herein. Backbone modifications of the phosphate backbone can also include alterations that result in either an uncharged linker or a charged linker with unsymmetrical charge distribution.

[00269] Examples of modified phosphate groups include, phosphorothioate, phosphoroselenates, borano phosphates, borano phosphate esters, hydrogen phosphonates, phosphoroamidates, alkyl or aryl phosphonates and phosphotriesters. The phosphorous atom in

an unmodified phosphate group is achiral. However, replacement of one of the non-bridging oxygens with one of the above atoms or groups of atoms can render the phosphorous atom chiral. The stereogenic phosphorous atom can possess either the "R" configuration (Rp) or the "S" configuration (Sp). The backbone can also be modified by replacement of a bridging oxygen, (i.e., the oxygen that links the phosphate to the nucleoside), with nitrogen (bridged phosphoroamidates), sulfur (bridged phosphorothioates) and carbon (bridged methylenephosphonates). The replacement can occur at either linking oxygen or at both of the linking oxygens.

[00270] The phosphate group can be replaced by non-phosphorus containing connectors in certain backbone modifications. In some embodiments, the charged phosphate group can be replaced by a neutral moiety. Examples of moieties which can replace the phosphate group can include, without limitation, e.g., methyl phosphonate, hydroxylamino, siloxane, carbonate, carboxymethyl, carbamate, amide, thioether, ethylene oxide linker, sulfonate, sulfonamide, thioformacetal, formacetal, oxime, methyleneimino, methylenemethylimino, methylenehydrazo, methylenedimethylhydrazo and methyleneoxymethylimino.

[00271] Scaffolds that can mimic nucleic acids can also be constructed wherein the phosphate linker and ribose sugar are replaced by nuclease resistant nucleoside or nucleotide surrogates. Such modifications may comprise backbone and sugar modifications. In some embodiments, the nucleobases can be tethered by a surrogate backbone. Examples can include, without limitation, the morpholino, cyclobutyl, pyrrolidine and peptide nucleic acid (PNA) nucleoside surrogates.

[00272] The modified nucleosides and modified nucleotides can include one or more modifications to the sugar group (a sugar modification). For example, the 2' hydroxyl group (OH) can be modified (e.g., replaced with a number of different oxy or deoxy substituents. Modifications to the 2' hydroxyl group can enhance the stability of the nucleic acid since the hydroxyl can no longer be deprotonated to form a 2'-alkoxide ion.

[00273] Examples of 2' hydroxyl group modifications can include alkoxy or aryloxy (OR, wherein "R" can be, e.g., alkyl, cycloalkyl, aryl, aralkyl, heteroaryl or a sugar); polyethyleneglycols (PEG), $O(CH_2CH_2O)_nCH_2CH_2OR$ wherein R can be, e.g., H or optionally substituted alkyl, and n can be an integer from 0 to 20 (e.g., from 0 to 4, from 0 to 8, from 0 to 10, from 0 to 16, from 1 to 4, from 1 to 8, from 1 to 10, from 1 to 16, from 1 to 20, from 2 to 4, from 2 to 8, from 2 to 10, from 2 to 16, from 2 to 20, from 4 to 8, from 4 to 10, from 4 to 16, and

from 4 to 20). The 2' hydroxyl group modification can be 2'-O-Me. Likewise, the 2' hydroxyl group modification can be a 2'-fluoro modification, which replaces the 2' hydroxyl group with a fluoride. The 2' hydroxyl group modification can include locked nucleic acids (LNA) in which the 2' hydroxyl can be connected, e.g., by a C_{1-6} alkylene or C_{1-6} heteroalkylene bridge, to the 4' carbon of the same ribose sugar, where exemplary bridges can include methylene, propylene, ether, or amino bridges; O-amino (wherein amino can be, e.g., NH_2; alkylamino, dialkylamino, heterocyclyl, arylamino, diarylamino, heteroarylamino, or diheteroarylamino, ethylenediamine, or polyamino) and aminoalkoxy, $O(CH_2)_n$-amino, (wherein amino can be, e.g., NH_2; alkylamino, dialkylamino, heterocyclyl, arylamino, diarylamino, heteroarylamino, or diheteroarylamino, ethylenediamine, or polyamino). The 2' hydroxyl group modification can include unlocked nucleic acids (UNA) in which the ribose ring lacks the C2'-C3' bond. The 2' hydroxyl group modification can include the methoxyethyl group (MOE), ($OCH_2CH_2OCH_3$, e.g., a PEG derivative).

[00274] Deoxy 2' modifications can include hydrogen (i.e. deoxyribose sugars, e.g., at the overhang portions of partially dsRNA); halo (e.g., bromo, chloro, fluoro, or iodo); amino (wherein amino can be, e.g., NH2; alkylamino, dialkylamino, heterocyclyl, arylamino, diarylamino, heteroarylamino, diheteroarylamino, or amino acid); $NH(CH_2CH_2NH)_nCH_2CH_2$-amino (wherein amino can be, e.g., as described herein), -NHC(O)R (wherein R can be, e.g., alkyl, cycloalkyl, aryl, aralkyl, heteroaryl or sugar), cyano; mercapto; alkyl-thio-alkyl; thioalkoxy; and alkyl, cycloalkyl, aryl, alkenyl and alkynyl, which may be optionally substituted with e.g., an amino as described herein.

[00275] The sugar modification can comprise a sugar group which may also contain one or more carbons that possess the opposite stereochemical configuration than that of the corresponding carbon in ribose. Thus, a modified nucleic acid can include nucleotides containing e.g., arabinose, as the sugar. The modified nucleic acids can also include abasic sugars. These abasic sugars can also be further modified at one or more of the constituent sugar atoms. The modified nucleic acids can also include one or more sugars that are in the L form (e.g. L-nucleosides).

[00276] The modified nucleosides and modified nucleotides described herein, which can be incorporated into a modified nucleic acid, can include a modified base, also called a nucleobase. Examples of nucleobases include, but are not limited to, adenine (A), guanine (G), cytosine (C),

and uracil (U). These nucleobases can be modified or wholly replaced to provide modified residues that can be incorporated into modified nucleic acids. The nucleobase of the nucleotide can be independently selected from a purine, a pyrimidine, a purine analog, or pyrimidine analog. In some embodiments, the nucleobase can include, for example, naturally-occurring and synthetic derivatives of a base.

[00277] In a dual guide RNA, each of the crRNA and the tracrRNA can contain modifications. Such modifications may be at one or both ends of the crRNA and/or tracrRNA. In a sgRNA, one or more residues at one or both ends of the sgRNA may be chemically modified, and/or internal nucleosides may be modified, and/or the entire sgRNA may be chemically modified. Some gRNAs comprise a 5' end modification. Some gRNAs comprise a 3' end modification.

[00278] The guide RNAs disclosed herein can comprise one of the modification patterns disclosed in WO 2018/107028 Al, herein incorporated by reference in its entirety for all purposes. The guide RNAs disclosed herein can also comprise one of the structures/modification patterns disclosed in US 2017/0114334, herein incorporated by reference in its entirety for all purposes. The guide RNAs disclosed herein can also comprise one of the structures/modification patterns disclosed in WO 2017/136794, WO 2017/004279, US 2018/0187186, or US 2019/0048338, each of which is herein incorporated by reference in its entirety for all purposes.

[00279] As one example, nucleotides at the 5' or 3' end of a guide RNA can include phosphorothioate linkages (e.g., the bases can have a modified phosphate group that is a phosphorothioate group). For example, a guide RNA can include phosphorothioate linkages between the 2, 3, or 4 terminal nucleotides at the 5' or 3' end of the guide RNA. As another example, nucleotides at the 5' and/or 3' end of a guide RNA can have 2'-O-methyl modifications. For example, a guide RNA can include 2'-O-methyl modifications at the 2, 3, or 4 terminal nucleotides at the 5' and/or 3' end of the guide RNA (e.g., the 5' end). *See, e.g.*, WO 2017/173054 A1 and Finn et al. (2018) *Cell Rep.* 22(9):2227-2235, each of which is herein incorporated by reference in its entirety for all purposes. Other possible modifications are described in more detail elsewhere herein. In one specific example, the guide RNA includes 2'-O-methyl analogs and 3' phosphorothioate internucleotide linkages at the first three 5' and 3' terminal RNA residues. In another specific example, the guide RNA is modified such that all 2'OH groups that do not interact with the Cas9 protein are replaced with 2'-O-methyl analogs,

and the tail region of the guide RNA, which has minimal interaction with Cas9, is modified with 5' and 3' phosphorothioate internucleotide linkages. Additionally, the DNA-targeting segment can have 2'-fluoro modifications on some bases. *See, e.g.*, Yin et al. (2017) *Nat. Biotech.* 35(12):1179-1187, herein incorporated by reference in its entirety for all purposes. Other examples of modified guide RNAs are provided, e.g., in WO 2018/107028 A1, herein incorporated by reference in its entirety for all purposes. Such chemical modifications can, for example, provide greater stability and protection from exonucleases to guide RNAs, allowing them to persist within cells for longer than unmodified guide RNAs. Such chemical modifications can also, for example, protect against innate intracellular immune responses that can actively degrade RNA or trigger immune cascades that lead to cell death.

[00280] As one example, any of the guide RNAs described herein can comprise at least one modification. In one example, the at least one modification comprises a 2'-O-methyl (2'-O-Me) modified nucleotide, a phosphorothioate (PS) bond between nucleotides, a 2'-fluoro (2'-F) modified nucleotide, or a combination thereof. For example, the at least one modification can comprise a 2'-O-methyl (2'-O-Me) modified nucleotide. Alternatively or additionally, the at least one modification can comprise a phosphorothioate (PS) bond between nucleotides. Alternatively or additionally, the at least one modification can comprise a 2'-fluoro (2'-F) modified nucleotide. In one example, a guide RNA described herein comprises one or more 2'-O-methyl (2'-O-Me) modified nucleotides and one or more phosphorothioate (PS) bonds between nucleotides.

[00281] The modifications can occur anywhere in the guide RNA. As one example, the guide RNA comprises a modification at one or more of the first five nucleotides at the 5' end of the guide RNA, the guide RNA comprises a modification at one or more of the last five nucleotides of the 3' end of the guide RNA, or a combination thereof. For example, the guide RNA can comprise phosphorothioate bonds between the first four nucleotides of the guide RNA, phosphorothioate bonds between the last four nucleotides of the guide RNA, or a combination thereof. Alternatively or additionally, the guide RNA can comprise 2'-O-Me modified nucleotides at the first three nucleotides at the 5' end of the guide RNA, can comprise 2'-O-Me modified nucleotides at the last three nucleotides at the 3' end of the guide RNA, or a combination thereof.

[00282] In one example, a modified gRNA can comprise the following sequence: mN*mN*mN*NNNNNNNNNNNNNNNNNGUUUUAGAmGmCmUmAmGmAmAmAmUmA mGmCAAGUUAAAAUAAGGCUAGUCCGUUAUCAmAmCmUmUmGmAmAmAmAmAm GmUmGmGmCmAmCmCmGmAmGmUmCmGmGmUmGmCmU*mU*mU*mU (SEQ ID NO: 44), where "N" may be any natural or non-natural nucleotide, and wherein the totality of N residues comprise an *RS1* DNA-targeting segment as described herein (e.g., the sequence set forth in SEQ ID NO: 44, wherein the N residues are replaced with the DNA-targeting segment of any one of SEQ ID NOS: 3148-6241, or any one of SEQ ID NOS: 3148-4989, or any one of SEQ ID NOS: 3148-3151, 3154-3186, 3188-3247, and 3249-4351, or any one of SEQ ID NOS: 3150, 3151, 3159, 3675, 4297, and 4304, or any one of SEQ ID NOS: 4990-6241 (e.g., 5477 or 5981). The terms "mA," "mC," "mU," and "mG" denote a nucleotide (A, C, U, and G, respectively) that has been modified with 2'-O-Me. The symbol "*" depicts a phosphorothioate modification. A phosphorothioate linkage or bond refers to a bond where a sulfur is substituted for one nonbridging phosphate oxygen in a phosphodiester linkage, for example in the bonds between nucleotides bases. When phosphorothioates are used to generate oligonucleotides, the modified oligonucleotides may also be referred to as S-oligos. The terms A*, C*, U*, or G* denote a nucleotide that is linked to the next (e.g., 3') nucleotide with a phosphorothioate bond. The terms "mA*," "mC*," "mU*," and "mG*" denote a nucleotide (A, C, U, and G, respectively) that has been substituted with 2'-O-Me and that is linked to the next (e.g., 3') nucleotide with a phosphorothioate bond.

[00283] Another chemical modification that has been shown to influence nucleotide sugar rings is halogen substitution. For example, 2'-fluoro (2'-F) substitution on nucleotide sugar rings can increase oligonucleotide binding affinity and nuclease stability. Abasic nucleotides refer to those which lack nitrogenous bases. Inverted bases refer to those with linkages that are inverted from the normal 5' to 3' linkage (i.e., either a 5' to 5' linkage or a 3' to 3' linkage).

[00284] An abasic nucleotide can be attached with an inverted linkage. For example, an abasic nucleotide may be attached to the terminal 5' nucleotide via a 5' to 5' linkage, or an abasic nucleotide may be attached to the terminal 3' nucleotide via a 3' to 3' linkage. An inverted abasic nucleotide at either the terminal 5' or 3' nucleotide may also be called an inverted abasic end cap.

[00285] In one example, one or more of the first three, four, or five nucleotides at the 5' terminus, and one or more of the last three, four, or five nucleotides at the 3' terminus are modified. The modification can be, for example, a 2'-O-Me, 2'-F, inverted abasic nucleotide, phosphorothioate bond, or other nucleotide modification well known to increase stability and/or performance.

[00286] In another example, the first four nucleotides at the 5' terminus, and the last four nucleotides at the 3' terminus can be linked with phosphorothioate bonds.

[00287] In another example, the first three nucleotides at the 5' terminus, and the last three nucleotides at the 3' terminus can comprise a 2'-O-methyl (2'-O-Me) modified nucleotide. In another example, the first three nucleotides at the 5' terminus, and the last three nucleotides at the 3' terminus comprise a 2'-fluoro (2'-F) modified nucleotide. In another example, the first three nucleotides at the 5' terminus, and the last three nucleotides at the 3' terminus comprise an inverted abasic nucleotide.

[00288] Guide RNAs can be provided in any form. For example, the gRNA can be provided in the form of RNA, either as two molecules (separate crRNA and tracrRNA) or as one molecule (sgRNA), and optionally in the form of a complex with a Cas protein. The gRNA can also be provided in the form of DNA encoding the gRNA. The DNA encoding the gRNA can encode a single RNA molecule (sgRNA) or separate RNA molecules (e.g., separate crRNA and tracrRNA). In the latter case, the DNA encoding the gRNA can be provided as one DNA molecule or as separate DNA molecules encoding the crRNA and tracrRNA, respectively.

[00289] When a gRNA is provided in the form of DNA, the gRNA can be transiently, conditionally, or constitutively expressed in the cell. DNAs encoding gRNAs can be stably integrated into the genome of the cell and operably linked to a promoter active in the cell. Alternatively, DNAs encoding gRNAs can be operably linked to a promoter in an expression construct. For example, the DNA encoding the gRNA can be in a vector comprising a heterologous nucleic acid, such as a nucleic acid encoding a Cas protein. Alternatively, it can be in a vector or a plasmid that is separate from the vector comprising the nucleic acid encoding the Cas protein. Promoters that can be used in such expression constructs include promoters active, for example, in one or more of a eukaryotic cell, a human cell, a non-human cell, a mammalian cell, a non-human mammalian cell, a rodent cell, a mouse cell, a rat cell, a pluripotent cell, an embryonic stem (ES) cell, an adult stem cell, a developmentally restricted progenitor cell, an

induced pluripotent stem (iPS) cell, or a one-cell stage embryo. Such promoters can be, for example, conditional promoters, inducible promoters, constitutive promoters, or tissue-specific promoters. Such promoters can also be, for example, bidirectional promoters. Specific examples of suitable promoters include an RNA polymerase III promoter, such as a human U6 promoter, a rat U6 polymerase III promoter, or a mouse U6 polymerase III promoter. In another example, the small tRNA Gln can be used to drive expression of a guide RNA.

[00290] Alternatively, gRNAs can be prepared by various other methods. For example, gRNAs can be prepared by *in vitro* transcription using, for example, T7 RNA polymerase (*see, e.g.*, WO 2014/089290 and WO 2014/065596, each of which is herein incorporated by reference in its entirety for all purposes). Guide RNAs can also be a synthetically produced molecule prepared by chemical synthesis. For example, a guide RNA can be chemically synthesized to include 2'-O-methyl analogs and 3' phosphorothioate internucleotide linkages at the first three 5' and 3' terminal RNA residues.

[00291] Guide RNAs (or nucleic acids encoding guide RNAs) can be in compositions comprising one or more guide RNAs (e.g., 1, 2, 3, 4, or more guide RNAs) and a carrier increasing the stability of the guide RNA (e.g., prolonging the period under given conditions of storage (e.g., -20°C, 4°C, or ambient temperature) for which degradation products remain below a threshold, such below 0.5% by weight of the starting nucleic acid or protein; or increasing the stability in vivo). Non-limiting examples of such carriers include poly(lactic acid) (PLA) microspheres, poly(D,L-lactic-coglycolic-acid) (PLGA) microspheres, liposomes, micelles, inverse micelles, lipid cochleates, and lipid microtubules. Such compositions can further comprise a Cas protein, such as a Cas9 protein, or a nucleic acid encoding a Cas protein.

3. Guide RNA Target Sequences

[00292] Target DNAs for guide RNAs include nucleic acid sequences present in a DNA to which a DNA-targeting segment of a gRNA will bind, provided sufficient conditions for binding exist. Suitable DNA/RNA binding conditions include physiological conditions normally present in a cell. Other suitable DNA/RNA binding conditions (e.g., conditions in a cell-free system) are known in the art (*see, e.g.*, Molecular Cloning: A Laboratory Manual, 3rd Ed. (Sambrook et al., Harbor Laboratory Press 2001), herein incorporated by reference in its entirety for all purposes). The strand of the target DNA that is complementary to and hybridizes with the gRNA can be

called the "complementary strand," and the strand of the target DNA that is complementary to the "complementary strand" (and is therefore not complementary to the Cas protein or gRNA) can be called "noncomplementary strand" or "template strand."

[00293] The target DNA includes both the sequence on the complementary strand to which the guide RNA hybridizes and the corresponding sequence on the non-complementary strand (e.g., adjacent to the protospacer adjacent motif (PAM)). Unless otherwise specified, the term "guide RNA target sequence" as used herein refers specifically to the sequence on the non-complementary strand corresponding to (i.e., the reverse complement of) the sequence to which the guide RNA hybridizes on the complementary strand. That is, the guide RNA target sequence refers to the sequence on the non-complementary strand adjacent to the PAM (e.g., upstream or 5' of the PAM in the case of Cas9). A guide RNA target sequence is equivalent to the DNA-targeting segment of a guide RNA, but with thymines instead of uracils. As one example, a guide RNA target sequence for an SpCas9 enzyme can refer to the sequence upstream of the 5'-NGG-3' PAM on the non-complementary strand. A guide RNA is designed to have complementarity to the complementary strand of a target DNA, where hybridization between the DNA-targeting segment of the guide RNA and the complementary strand of the target DNA promotes the formation of a CRISPR complex. Full complementarity is not necessarily required, provided that there is sufficient complementarity to cause hybridization and promote formation of a CRISPR complex. If a guide RNA is referred to herein as targeting a guide RNA target sequence, what is meant is that the guide RNA hybridizes to the complementary strand sequence of the target DNA that is the reverse complement of the guide RNA target sequence on the non-complementary strand.

[00294] A target DNA or guide RNA target sequence can comprise any polynucleotide, and can be located, for example, in the nucleus or cytoplasm of a cell or within an organelle of a cell, such as a mitochondrion or chloroplast. A target DNA or guide RNA target sequence can be any nucleic acid sequence endogenous or exogenous to a cell. The guide RNA target sequence can be a sequence coding a gene product (e.g., a protein) or a non-coding sequence (e.g., a regulatory sequence) or can include both.

[00295] Site-specific binding and cleavage of a target DNA by a Cas protein can occur at locations determined by both (i) base-pairing complementarity between the guide RNA and the complementary strand of the target DNA and (ii) a short motif, called the protospacer adjacent

motif (PAM), in the non-complementary strand of the target DNA. The PAM can flank the guide RNA target sequence. Optionally, the guide RNA target sequence can be flanked on the 3' end by the PAM (e.g., for Cas9). Alternatively, the guide RNA target sequence can be flanked on the 5' end by the PAM (e.g., for Cpf1). For example, the cleavage site of Cas proteins can be about 1 to about 10 or about 2 to about 5 base pairs (e.g., 3 base pairs) upstream or downstream of the PAM sequence (e.g., within the guide RNA target sequence). In the case of SpCas9, the PAM sequence (i.e., on the non-complementary strand) can be 5'-N_1GG-3', where N_1 is any DNA nucleotide, and where the PAM is immediately 3' of the guide RNA target sequence on the non-complementary strand of the target DNA. As such, the sequence corresponding to the PAM on the complementary strand (i.e., the reverse complement) would be 5'-CCN_2-3', where N_2 is any DNA nucleotide and is immediately 5' of the sequence to which the DNA-targeting segment of the guide RNA hybridizes on the complementary strand of the target DNA. In some such cases, N_1 and N_2 can be complementary and the N_1- N_2 base pair can be any base pair (e.g., N_1=C and N_2=G; N_1=G and N_2=C; N_1=A and N_2=T; or N_1=T, and N_2=A). In the case of Cas9 from *S. aureus*, the PAM can be NNGRRT or NNGRR, where N can A, G, C, or T, and R can be G or A. In the case of Cas9 from *C. jejuni*, the PAM can be, for example, NNNNACAC or NNNNRYAC, where N can be A, G, C, or T, and R can be G or A. In some cases (e.g., for FnCpf1), the PAM sequence can be upstream of the 5' end and have the sequence 5'-TTN-3'.

[00296] An example of a guide RNA target sequence is a 20-nucleotide DNA sequence immediately preceding an NGG motif recognized by an SpCas9 protein. For example, two examples of guide RNA target sequences plus PAMs are GN_{19}NGG (SEQ ID NO: 40) or N_{20}NGG (SEQ ID NO: 41). *See, e.g.*, WO 2014/165825, herein incorporated by reference in its entirety for all purposes. The guanine at the 5' end can facilitate transcription by RNA polymerase in cells. Other examples of guide RNA target sequences plus PAMs can include two guanine nucleotides at the 5' end (e.g., GGN_{20}NGG; SEQ ID NO: 42) to facilitate efficient transcription by T7 polymerase *in vitro*. *See, e.g.*, WO 2014/065596, herein incorporated by reference in its entirety for all purposes. Other guide RNA target sequences plus PAMs can have between 4-22 nucleotides in length of SEQ ID NOS: 40-42, including the 5' G or GG and the 3' GG or NGG. Yet other guide RNA target sequences plus PAMs can have between 14 and 20 nucleotides in length of SEQ ID NOS: 40-42.

[00297] Guide RNAs targeting an *RS1* gene can target, for example, the first intron of the *RS1* gene, or a sequence adjacent to the first intron of the *RS1* gene (e.g., in the first exon or the second exon of the *RS1* gene.

[00298] Formation of a CRISPR complex hybridized to a target DNA can result in cleavage of one or both strands of the target DNA within or near the region corresponding to the guide RNA target sequence (i.e., the guide RNA target sequence on the non-complementary strand of the target DNA and the reverse complement on the complementary strand to which the guide RNA hybridizes). For example, the cleavage site can be within the guide RNA target sequence (e.g., at a defined location relative to the PAM sequence). The "cleavage site" includes the position of a target DNA at which a Cas protein produces a single-strand break or a double-strand break. The cleavage site can be on only one strand (e.g., when a nickase is used) or on both strands of a double-stranded DNA. Cleavage sites can be at the same position on both strands (producing blunt ends; e.g. Cas9)) or can be at different sites on each strand (producing staggered ends (i.e., overhangs); e.g., Cpf1). Staggered ends can be produced, for example, by using two Cas proteins, each of which produces a single-strand break at a different cleavage site on a different strand, thereby producing a double-strand break. For example, a first nickase can create a single-strand break on the first strand of double-stranded DNA (dsDNA), and a second nickase can create a single-strand break on the second strand of dsDNA such that overhanging sequences are created. In some cases, the guide RNA target sequence or cleavage site of the nickase on the first strand is separated from the guide RNA target sequence or cleavage site of the nickase on the second strand by at least 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 40, 50, 75, 100, 250, 500, or 1,000 base pairs.

[00299] A guide RNA targeting an *RS1* gene, such as a human *RS1* gene, can target any desired location in the *RS1* gene. Guide RNAs targeting an *RS1* gene can target, for example, the first intron of the *RS1* gene, or a sequence adjacent to the first intron of the *RS1* gene (e.g., in the first exon or the second exon of the *RS1* gene. For example, a guide RNA target sequence can comprise any contiguous sequence in the *RS1* gene. The term *RS1* gene includes the genomic region encompassing the *RS1* regulatory promoters and enhancer sequences as well as the coding sequence. A guide RNA target sequence can comprise a coding sequence, a non-coding sequence (e.g., a regulatory element such as a promoter or enhancer region), or a combination thereof. As one example, a guide RNA target sequence can comprise a contiguous coding sequence in any of

the *RS1* coding exons. As one example, the guide RNA target sequence can be in exon 1 of the *RS1* gene. As another example, the guide RNA target sequence can be in exon 2 of the *RS1* gene. As another example, the guide RNA target sequence can be in exon 3 of the *RS1* gene. As another example, the guide RNA target sequence can be in exon 4 of the *RS1* gene. As another example, the guide RNA target sequence can be in exon 5 of the *RS1* gene. As another example, the guide RNA target sequence can be in exon 6 of the *RS1* gene. A guide RNA target sequence can also comprise a contiguous sequence in any of the *RS1* introns. As one example, the guide RNA target sequence can be in intron 1 of the *RS1* gene. As another example, the guide RNA target sequence can be in intron 2 of the *RS1* gene. As another example, the guide RNA target sequence can be in intron 3 of the *RS1* gene. As another example, the guide RNA target sequence can be in intron 4 of the *RS1* gene. As another example, the guide RNA target sequence can be in intron 5 of the *RS1* gene. As another example, the guide RNA target sequence can be in intron 6 of the *RS1* gene.

[00300] The guide RNA target sequence can also be selected to minimize off-target modification or avoid off-target effects (e.g., by avoiding two or fewer mismatches to off-target genomic sequences).

[00301] As one example, a guide RNA targeting an *RS1* gene can target the guide RNA target sequence set forth in any one of SEQ ID NOS: 54-3147. As another example, a guide RNA targeting an *RS1* gene can target at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the guide RNA target sequence set forth in any one of SEQ ID NOS: 54-3147. Examples of such guide RNA target sequences are set forth in **Tables 2 and 3**.

[00302] As one example, a guide RNA targeting a human *RS1* gene can target the guide RNA target sequence set forth in any one of SEQ ID NOS: 54-1895. As another example, a guide RNA targeting a human *RS1* gene can target at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the guide RNA target sequence set forth in any one of SEQ ID NOS: 54-1895.

[00303] As one example, a guide RNA targeting a human *RS1* gene can target the guide RNA target sequence set forth in any one of SEQ ID NOS: 54-57, 60-92, 94-153, and 155-1257. As another example, a guide RNA targeting a human *RS1* gene can target at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the guide RNA target sequence set forth in any one of SEQ ID NOS: 54-57, 60-92, 94-153, and 155-1257.

[00304] As one example, a guide RNA targeting a human *RS1* gene can target the guide RNA target sequence set forth in any one of SEQ ID NOS: 56, 57, 65, 581, 1203, and 1210. As another example, a guide RNA targeting a human *RS1* gene can target at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the guide RNA target sequence set forth in any one of SEQ ID NOS: 56, 57, 65, 581, 1203, and 1210.

[00305] As one example, a guide RNA targeting a mouse *Rs1* gene can target the guide RNA target sequence set forth in any one of SEQ ID NOS: 1896-3147 (e.g., SEQ ID NO: 2383 or 2887). As another example, a guide RNA targeting a mouse *Rs1* gene can target at least 17, at least 18, at least 19, or at least 20 contiguous nucleotides of the guide RNA target sequence set forth in any one of SEQ ID NOS: 1896-3147 (e.g., SEQ ID NO: 2383 or 2887).

[00306] Table 2. Human *RS1* Intron 1 Guide RNA Target Sequences and Guide Sequences.

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGGCCTTATGCATCTCCATC	54	TGG	-	GGGCCUUAUGCAUCUCCAUC	3148
TAATCAGCATATTATCCAGA	55	TGG	+	UAAUCAGCAUAUUAUCCAGA	3149
CCCTTTTGTACGTTTTTTAA	56	**TGG**	+	**CCCUUUUGUACGUUUUUUAA**	3150
CTGTATCTTCTTAGCCAGTA	57	**CGG**	+	**CUGUAUCUUCUUAGCCAGUA**	3151
GTTAACGCGTCATTTACATT	58	AGG	-	GUUAACGCGUCAUUUACAUU	3152
TACAATAAATTAGCCGGATG	59	TGG	-	UACAAUAAAUUAGCCGGAUG	3153
AAACTTTTAGGAGTCAAAGT	60	GGG	+	AAACUUUUAGGAGUCAAAGU	3154
AAAACTTTTAGGAGTCAAAG	61	TGG	+	AAAACUUUUAGGAGUCAAAG	3155
AATGTTAACAGTGTTGGCTT	62	TGG	+	AAUGUUAACAGUGUUGGCUU	3156
GTGGTGGCTGCAGGTGAGGG	63	TGG	+	GUGGUGGCUGCAGGUGAGGG	3157
TACTAAAATGTTAACAGTGT	64	TGG	+	UACUAAAAUGUUAACAGUGU	3158
AAAAAAGGACTTGACATGCA	65	**GGG**	+	**AAAAAAGGACUUGACAUGCA**	3159
GTCCCAGCTTCTCTTGAGGG	66	TGG	+	GUCCCAGCUUCUCUUGAGGG	3160
GTTAACAGTGTTGGCTTTGG	67	TGG	+	GUUAACAGUGUUGGCUUUGG	3161
GTTGGTGGTCACTGACAGTG	68	TGG	-	GUUGGUGGUCACUGACAGUG	3162
GAAACTAGTGGCTACCGTAC	69	TGG	-	GAAACUAGUGGCUACCGUAC	3163
AAAAAACGTACAAAAGGGGC	70	CGG	-	AAAAAACGUACAAAAGGGGC	3164
AGCCCCAGGCCATCAACCGG	71	CGG	+	AGCCCCAGGCCAUCAACCGG	3165
GGCAGCCAGACAGATGCTTC	72	TGG	-	GGCAGCCAGACAGAUGCUUC	3166
CTGGAGAACAAAAGCATTTT	73	TGG	-	CUGGAGAACAAAAGCAUUUU	3167
ATCTTAGATTTATGCAATGT	74	GGG	-	AUCUUAGAUUUAUGCAAUGU	3168
ACAAGTAGAATCAGAATTCT	75	TGG	+	ACAAGUAGAAUCAGAAUUCU	3169
AATATCGGCTCACTGCAACC	76	CGG	+	AAUAUCGGCUCACUGCAACC	3170
CCCTCAAGAGAAGCTGGGAC	77	TGG	-	CCCUCAAGAGAAGCUGGGAC	3171
TCTTAGGAGATGACGAGGTT	78	GGG	-	UCUUAGGAGAUGACGAGGUU	3172
AATAATAAAGAACTAGAGAA	79	AGG	+	AAUAAUAAAGAACUAGAGAA	3173
AAAAACGTACAAAAGGGGCC	80	GGG	-	AAAAACGUACAAAAGGGGCC	3174
GGCTGAGCAGGCGGAGAAGT	81	AGG	+	GGCUGAGCAGGCGGAGAAGU	3175
AGAGAAAGGAGAACAGTCTG	82	AGG	+	AGAGAAAGGAGAACAGUCUG	3176
CTTCTTTCTCTTTCACGAGA	83	GGG	+	CUUCUUUCUCUUUCACGAGA	3177
AATCTTAGATTTATGCAATG	84	TGG	-	AAUCUUAGAUUUAUGCAAUG	3178
CTGAGCAGGCGGAGAAGTAG	85	GGG	+	CUGAGCAGGCGGAGAAGUAG	3179
ACCTAGTGTTGACAAGGCTG	86	TGG	-	ACCUAGUGUUGACAAGGCUG	3180
TCCCAGCTTCTCTTGAGGGT	87	GGG	+	UCCCAGCUUCUCUUGAGGGU	3181
AATAATTCTGTTGGGACGAC	88	AGG	+	AAUAAUUCUGUUGGGACGAC	3182

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CCTATAAAGAGGACGTTTCC	89	TGG	-	CCUAUAAAGAGGACGUUUCC	3183
CCTTCTTTCTCTTTCACGAG	90	AGG	+	CCUUCUUUCUCUUUCACGAG	3184
CCCATCGAAGTACTCACCAT	91	GGG	+	CCCAUCGAAGUACUCACCAU	3185
GTGTCATATGTTGCTGGTGG	92	GGG	-	GUGUCAUAUGUUGCUGGUGG	3186
AATGTAAATGACGCGTTAAC	93	AGG	+	AAUGUAAAUGACGCGUUAAC	3187
GCCTTTGAGCCAAGTGGATT	94	TGG	+	GCCUUUGAGCCAAGUGGAUU	3188
GTCAGACTCTGTGCTGGCTG	95	AGG	-	GUCAGACUCUGUGCUGGCUG	3189
CCGTCAATAGCATTCCGGTT	96	TGG	-	CCGUCAAUAGCAUUCCGGUU	3190
CCATTAAAAAACGTACAAAA	97	GGG	-	CCAUUAAAAAACGUACAAAA	3191
GGGATTTGGGGAGGATGGGG	98	AGG	-	GGGAUUUGGGGAGGAUGGGG	3192
ACTGTGTCATATGTTGCTGG	99	TGG	-	ACUGUGUCAUAUGUUGCUGG	3193
TACAATGTTGTGGACCGGGC	100	TGG	-	UACAAUGUUGUGGACCGGGC	3194
GATAGAGTAGCAAACAAAAC	101	AGG	-	GAUAGAGUAGCAAACAAAAC	3195
GCTCTCAAAGGAGACTGAGA	102	AGG	+	GCUCUCAAAGGAGACUGAGA	3196
GGAAGAGCAAGGAGCTCCTG	103	AGG	-	GGAAGAGCAAGGAGCUCCUG	3197
TGTGTCATATGTTGCTGGTG	104	GGG	-	UGUGUCAUAUGUUGCUGGUG	3198
CTGAGAAGGTGTACCTAGAG	105	TGG	+	CUGAGAAGGUGUACCUAGAG	3199
GTCCGGGAGCCAGTTCCTGC	106	AGG	-	GUCCGGGAGCCAGUUCCUGC	3200
TTAGGAGATGACGAGGTTGG	107	GGG	-	UUAGGAGAUGACGAGGUUGG	3201
GGAGGAAGCAGAGCTCTCAA	108	AGG	+	GGAGGAAGCAGAGCUCUCAA	3202
AGTCATCAGCCTGGGAAACA	109	TGG	-	AGUCAUCAGCCUGGGAAACA	3203
TCCGGGAGCCAGTTCCTGCA	110	GGG	-	UCCGGGAGCCAGUUCCUGCA	3204
GAGCAAGGAGCTCCTGAGGC	111	TGG	-	GAGCAAGGAGCUCCUGAGGC	3205
TCTGGTACAATGTTGTGGAC	112	CGG	-	UCUGGUACAAUGUUGUGGAC	3206
CCTGGGAGTGTCTGACAACC	113	AGG	-	CCUGGGAGUGUCUGACAACC	3207
CCAGTTCCTGCAGGGCCTCG	114	TGG	-	CCAGUUCCUGCAGGGCCUCG	3208
TAGGGAATGGGCTGAGCAGG	115	CGG	+	UAGGGAAUGGGCUGAGCAGG	3209
AGCTTTCTGTCCCTGTGAGA	116	AGG	+	AGCUUUCUGUCCCUGUGAGA	3210
TCGTCTCCCTGCCTTCTCAC	117	AGG	-	UCGUCUCCCUGCCUUCUCAC	3211
CGAAGTACTCACCATGGGCA	118	TGG	+	CGAAGUACUCACCAUGGGCA	3212
AGGCCACTGGACCATGCCCA	119	TGG	-	AGGCCACUGGACCAUGCCCA	3213
GGCAGGGAGACGAGTCTAAT	120	GGG	+	GGCAGGGAGACGAGUCUAAU	3214
GGGCTTAGATTTATGCAATA	121	TGG	-	GGGCUUAGAUUUAUGCAAUA	3215
TTCAGCGAAGACAAGGGATT	122	TGG	-	UUCAGCGAAGACAAGGGAUU	3216
CATGGCCCACGAGGCCCTGC	123	AGG	+	CAUGGCCCACGAGGCCCUGC	3217
CAGTTCCTGCAGGGCCTCGT	124	GGG	-	CAGUUCCUGCAGGGCCUCGU	3218
CATTAAAAAACGTACAAAAG	125	GGG	-	CAUUAAAAAACGUACAAAAG	3219
AGGCAGGGAGACGAGTCTAA	126	TGG	+	AGGCAGGGAGACGAGUCUAA	3220
CTAACATCTGGATGAACCTG	127	AGG	-	CUAACAUCUGGAUGAACCUG	3221
CCAGTGGCCTGTCTTCTCCT	128	GGG	+	CCAGUGGCCUGUCUUCUCCU	3222
TATTACAAATACTGCCGCTA	129	TGG	+	UAUUACAAAUACUGCCGCUA	3223
GCAGGGAGACGAGTCTAATG	130	GGG	+	GCAGGGAGACGAGUCUAAUG	3224
CAATCTGCTTGAGAAACAGG	131	AGG	-	CAAUCUGCUUGAGAAACAGG	3225
GGCTTAGATTTATGCAATAT	132	GGG	-	GGCUUAGAUUUAUGCAAUAU	3226
ACACTCCCAGGGCTCACTCT	133	CGG	+	ACACUCCCAGGGCUCACUCU	3227
TATGGGCTCATTCTGCCCCT	134	TGG	-	UAUGGGCUCAUUCUGCCCCU	3228
CGAAGACAAGGGATTTGGGG	135	AGG	-	CGAAGACAAGGGAUUUGGGG	3229
AGCACAGAGTCTGACATTGA	136	GGG	+	AGCACAGAGUCUGACAUUGA	3230
GTCTTAGGAGATGACGAGGT	137	TGG	-	GUCUUAGGAGAUGACGAGGU	3231
GCTGAGCAGGCGGAGAAGTA	138	GGG	+	GCUGAGCAGGCGGAGAAGUA	3232
TTCCAATCTGCTTGAGAAAC	139	AGG	-	UUCCAAUCUGCUUGAGAAAC	3233
GAGATCATAATACATCTCAG	140	AGG	+	GAGAUCAUAAUACAUCUCAG	3234
GCCCATCGAAGTACTCACCA	141	TGG	+	GCCCAUCGAAGUACUCACCA	3235
CAGGCGGAGAAGTAGGGGTG	142	GGG	+	CAGGCGGAGAAGUAGGGGUG	3236
TTGAAACCCAGTCACCAATG	143	TGG	-	UUGAAACCCAGUCACCAAUG	3237
ACATAATCCAACTGAGAGTC	144	AGG	+	ACAUAAUCCAACUGAGAGUC	3238
GTGAGTGTACTGAGTCTCCG	145	AGG	-	GUGAGUGUACUGAGUCUCCG	3239
CAATGGAGTCACACAGCATG	146	TGG	+	CAAUGGAGUCACACAGCAUG	3240

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGGGTGGGGGGACGCATTTG	147	AGG	+	GGGGUGGGGGGACGCAUUUG	3241
AACTGAGAGTCAGGAAACCT	148	CGG	+	AACUGAGAGUCAGGAAACCU	3242
TGCTCACTTCCATAAGGATA	149	TGG	+	UGCUCACUUCCAUAAGGAUA	3243
ATTTGGGGAGGATGGGGAGG	150	AGG	-	AUUUGGGGAGGAUGGGGAGG	3244
CGGGCTGGCCACGGCAAGTG	151	TGG	-	CGGGCUGGCCACGGCAAGUG	3245
CTCAATGTCAGACTCTGTGC	152	TGG	-	CUCAAUGUCAGACUCUGUGC	3246
TGCAGACTATTAATTGCAAG	153	GGG	-	UGCAGACUAUUAAUUGCAAG	3247
ACAGGCGTGAGCCACGGGCC	154	TGG	+	ACAGGCGUGAGCCACGGGCC	3248
CATCAATTGTGCCAGGCCCG	155	TGG	-	CAUCAAUUGUGCCAGGCCCG	3249
CAGCACAGAGTCTGACATTG	156	AGG	+	CAGCACAGAGUCUGACAUUG	3250
GTTGCAGACTATTAATTGCA	157	AGG	-	GUUGCAGACUAUUAAUUGCA	3251
GCAAGTGTGGCAACAGGGTC	158	CGG	-	GCAAGUGUGGCAACAGGGUC	3252
TAGGGTCTTGGAGTTTTGAT	159	AGG	-	UAGGGUCUUGGAGUUUUGAU	3253
AAAGCCTCACATGGCCCACG	160	AGG	+	AAAGCCUCACAUGGCCCACG	3254
CCTCGAGGTGAGCGTGTGCT	161	TGG	-	CCUCGAGGUGAGCGUGUGCU	3255
GCAGGCGGAGAAGTAGGGGT	162	GGG	+	GCAGGCGGAGAAGUAGGGGU	3256
CATTTTTGTGGACAGTTGTG	163	TGG	+	CAUUUUUGUGGACAGUUGUG	3257
TTGCAGACTATTAATTGCAA	164	GGG	-	UUGCAGACUAUUAAUUGCAA	3258
CTGGTTGTCAGACACTCCCA	165	GGG	+	CUGGUUGUCAGACACUCCCA	3259
CAGCGAAGACAAGGGATTTG	166	GGG	-	CAGCGAAGACAAGGGAUUUG	3260
TCAGCGAAGACAAGGGATTT	167	GGG	-	UCAGCGAAGACAAGGGAUUU	3261
TGGATTTGAAAATAAGAAGT	168	TGG	+	UGGAUUUGAAAAUAAGAAGU	3262
AGGTTTAAAAATATTGGGTG	169	TGG	+	AGGUUUAAAAAUAUUGGGUG	3263
TTGGCCCAGGGTGGTGGCAG	170	TGG	-	UUGGCCCAGGGUGGUGGCAG	3264
ACAGAAAAAGCTGTCACCAA	171	AGG	-	ACAGAAAAAGCUGUCACCAA	3265
ACAAGGGATTTGGGGAGGAT	172	GGG	-	ACAAGGGAUUUGGGGAGGAU	3266
GGCAGCCCCAGGCCATCAAC	173	CGG	+	GGCAGCCCCAGGCCAUCAAC	3267
CAGGTTCCCAGCTGTACAAT	174	GGG	-	CAGGUUCCCAGCUGUACAAU	3268
AGGCGGAGAAGTAGGGGTGG	175	GGG	+	AGGCGGAGAAGUAGGGGUGG	3269
AGTGTGGTGGCTGCAGGTGA	176	GGG	+	AGUGUGGUGGCUGCAGGUGA	3270
AGCACATTGGGCAGACACAA	177	GGG	+	AGCACAUUGGGCAGACACAA	3271
CCACGAGGCCCTGCAGGAAC	178	TGG	+	CCACGAGGCCCUGCAGGAAC	3272
CGTCTCCCTGCCTTCTCACA	179	GGG	-	CGUCUCCCUGCCUUCUCACA	3273
AGATACTAATCCCATGTATG	180	AGG	+	AGAUACUAAUCCCAUGUAUG	3274
TTAGGCTTTGCCCTCATACA	181	TGG	-	UUAGGCUUUGCCCUCAUACA	3275
CTACTCGGGGGAGGCTGAAG	182	CGG	+	CUACUCGGGGGAGGCUGAAG	3276
ACCTCACTGCCTCAGCAGCG	183	TGG	+	ACCUCACUGCCUCAGCAGCG	3277
TTGAGGACCCAGGAGAAGAC	184	AGG	-	UUGAGGACCCAGGAGAAGAC	3278
CTTAGGAGATGACGAGGTTG	185	GGG	-	CUUAGGAGAUGACGAGGUUG	3279
GGCGGAGAAGTAGGGGTGGG	186	GGG	+	GGCGGAGAAGUAGGGGUGGG	3280
CTGGTACAATGTTGTGGACC	187	GGG	-	CUGGUACAAUGUUGUGGACC	3281
GGCAAAGCATTCTGGGCAGA	188	GGG	-	GGCAAAGCAUUCUGGGCAGA	3282
GAAAATTACGGTGACTGCTG	189	TGG	-	GAAAAUUACGGUGACUGCUG	3283
GGACCAACCTAGTGTTGACA	190	AGG	-	GGACCAACCUAGUGUUGACA	3284
GCTTTTGTTCTCCAGTTTGT	191	TGG	+	GCUUUUGUUCUCCAGUUUGU	3285
TGATTTAATCACCAACAAAC	192	TGG	-	UGAUUUAAUCACCAACAAAC	3286
ATTTAGCAATGTTTACTGGG	193	TGG	+	AUUUAGCAAUGUUUACUGGG	3287
GGCATTGAATCCAATATGTG	194	CGG	-	GGCAUUGAAUCCAAUAUGUG	3288
GTGTTACCATCAGAGATTGC	195	AGG	+	GUGUUACCAUCAGAGAUUGC	3289
GTAGGCCATTCAGTGCTTAC	196	TGG	+	GUAGGCCAUUCAGUGCUUAC	3290
TTTGAAAATAAGAAGTTGGC	197	TGG	+	UUUGAAAAUAAGAAGUUGGC	3291
CACCTCGTTCCGCCGGTTGA	198	TGG	-	CACCUCGUUCCGCCGGUUGA	3292
ACACGCTCACCTCGAGGGCT	199	TGG	+	ACACGCUCACCUCGAGGGCU	3293
GATATCCAGTAAGCACTGAA	200	TGG	-	GAUAUCCAGUAAGCACUGAA	3294
TGGATTTAGCAATGTTTACT	201	GGG	+	UGGAUUUAGCAAUGUUUACU	3295
TAAAGAGGACGTTTCCTGGC	202	CGG	-	UAAAGAGGACGUUUCCUGGC	3296
TTAATCTGTCTTTTGTCGTA	203	GGG	-	UUAAUCUGUCUUUUGUCGUA	3297
ATAGGAAATGCCTTACTGTG	204	AGG	-	AUAGGAAAUGCCUUACUGUG	3298

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CTTACTGGATATCTGAACCT	205	TGG	+	CUUACUGGAUAUCUGAACCU	3299
AGTAAACATTGCTAAATCCA	206	AGG	-	AGUAAACAUUGCUAAAUCCA	3300
GGGTTCTTGCCTTGGGGTAT	207	CGG	-	GGGUUCUUGCCUUGGGGUAU	3301
GTGAGGCTTTGTGGAACTTG	208	AGG	-	GUGAGGCUUUGUGGAACUUG	3302
ACATCTTACTACTACCACAT	209	TGG	+	ACAUCUUACUACUACCACAU	3303
CCACCAACACCCCTTGCCTT	210	TGG	+	CCACCAACACCCCUUGCCUU	3304
TTTTTGGGAGACCAAAGGCA	211	AGG	-	UUUUUGGGAGACCAAAGGCA	3305
TTTCATCCTCCACGCTGCTG	212	AGG	-	UUUCAUCCUCCACGCUGCUG	3306
TCAGAGCCACATGAAACTAG	213	TGG	-	UCAGAGCCACAUGAAACUAG	3307
TCCATTAAAAAACGTACAAA	214	AGG	-	UCCAUUAAAAAACGUACAAA	3308
AAAAAAAGGACTTGACATGC	215	AGG	+	AAAAAAAGGACUUGACAUGC	3309
GCTCCTGAGGCTGGAGCTAG	216	AGG	-	GCUCCUGAGGCUGGAGCUAG	3310
AGAAGGTGTACCTAGAGTGG	217	TGG	+	AGAAGGUGUACCUAGAGUGG	3311
GGTGCCAGCAGATTTGGGTC	218	TGG	+	GGUGCCAGCAGAUUUGGGUC	3312
GATACTAATCCCATGTATGA	219	GGG	+	GAUACUAAUCCCAUGUAUGA	3313
GAAATCCGAGAGTGAGCCCT	220	GGG	-	GAAAUCCGAGAGUGAGCCCU	3314
AAAACCCCTGCAATCTCTGA	221	TGG	-	AAAACCCCUGCAAUCUCUGA	3315
TAATAATATTTATATTATTC	222	AGG	-	UAAUAAUAUUUAUAUUAUUC	3316
AGAAAAGAAATGCAAGAAAT	223	GGG	+	AGAAAAGAAAUGCAAGAAAU	3317
TGAACTGTGTCATATGTTGC	224	TGG	-	UGAACUGUGUCAUAUGUUGC	3318
CAGAAAGCTTTCTGTATCTC	225	AGG	-	CAGAAAGCUUUCUGUAUCUC	3319
AGAAGCTGGGACTGGCTGTG	226	AGG	-	AGAAGCUGGGACUGGCUGUG	3320
CTTCTCTTGAGGGTGGGGAT	227	GGG	+	CUUCUCUUGAGGGUGGGGAU	3321
GCCCAGAATGCTTTGCCCAC	228	AGG	+	GCCCAGAAUGCUUUGCCCAC	3322
AGCAGGCGGAGAAGTAGGGG	229	TGG	+	AGCAGGCGGAGAAGUAGGGG	3323
TCTCCTCTAGCTCCAGCCTC	230	AGG	+	UCUCCUCUAGCUCCAGCCUC	3324
GGTTAAATGAAAGGGAAAGC	231	AGG	+	GGUUAAAUGAAAGGGAAAGC	3325
CTAAAGCGCGCCTTTCCTCA	232	TGG	+	CUAAAGCGCGCCUUUCCUCA	3326
AGAAGATGCTGGCTTGGCCC	233	AGG	-	AGAAGAUGCUGGCUUGGCCC	3327
CAGGAGCTCCTTGCTCTTCC	234	TGG	+	CAGGAGCUCCUUGCUCUUCC	3328
CTGTGTCATATGTTGCTGGT	235	GGG	-	CUGUGUCAUAUGUUGCUGGU	3329
TAGCACATTGGGCAGACACA	236	AGG	+	UAGCACAUUGGGCAGACACA	3330
GAAGCATATCACTTCTGCTA	237	GGG	-	GAAGCAUAUCACUUCUGCUA	3331
GTTGTGGACCGGGCTGGCCA	238	CGG	-	GUUGUGGACCGGGCUGGCCA	3332
TCCAGTGGCCTGTCTTCTCC	239	TGG	+	UCCAGUGGCCUGUCUUCUCC	3333
AATTTCCTGCTGTGACAACA	240	AGG	+	AAUUUCCUGCUGUGACAACA	3334
CAAGGGATTTGGGGAGGATG	241	GGG	-	CAAGGGAUUUGGGGAGGAUG	3335
AGGAAGTAGGGAACAGGGAC	242	TGG	-	AGGAAGUAGGGAACAGGGAC	3336
ACCTCCATCTCTATAAAAAT	243	AGG	+	ACCUCCAUCUCUAUAAAAAU	3337
TTACTTCTCTTTGGCTATGA	244	AGG	+	UUACUUCUCUUUGGCUAUGA	3338
TCCCACTGGCCCACGTTGCA	245	GGG	-	UCCCACUGGCCCACGUUGCA	3339
CAGCCATGTTGCTTCTCCTT	246	TGG	+	CAGCCAUGUUGCUUCUCCUU	3340
TATTTTTCTCCCTGTTTAGA	247	TGG	-	UAUUUUUCUCCCUGUUUAGA	3341
GGGCAAAGCATTCTGGGCAG	248	AGG	-	GGGCAAAGCAUUCUGGGCAG	3342
GAAGGAGGCGAGACACCTGT	249	GGG	-	GAAGGAGGCGAGACACCUGU	3343
ATTTCCTGCTGTGACAACAA	250	GGG	+	AUUUCCUGCUGUGACAACAA	3344
AAGAAAAGAAATGCAAGAAA	251	TGG	+	AAGAAAAGAAAUGCAAGAAA	3345
GCTTCTCTTGAGGGTGGGGA	252	TGG	+	GCUUCUCUUGAGGGUGGGGA	3346
ATTAATCTGTCTTTTGTCGT	253	AGG	-	AUUAAUCUGUCUUUUGUCGU	3347
ACAGGAGGAACGCACGCAGC	254	AGG	-	ACAGGAGGAACGCACGCAGC	3348
CCTGGTTGTCAGACACTCCC	255	AGG	+	CCUGGUUGUCAGACACUCCC	3349
AGGTCAACATCAATTGTGCC	256	AGG	-	AGGUCAACAUCAAUUGUGCC	3350
GACAAGGGATTTGGGGAGGA	257	TGG	-	GACAAGGGAUUUGGGGAGGA	3351
GGCTTAGATCTAAATACTCC	258	TGG	+	GGCUUAGAUCUAAAUACUCC	3352
GAGCACACAGCCTCACAGTA	259	AGG	+	GAGCACACAGCCUCACAGUA	3353
GTTACCATCAGAGATTGCAG	260	GGG	+	GUUACCAUCAGAGAUUGCAG	3354
TTGGATTTAGCAATGTTTAC	261	TGG	+	UUGGAUUUAGCAAUGUUUAC	3355
CTTGGAGTTTTGATAGGCAC	262	AGG	-	CUUGGAGUUUUGAUAGGCAC	3356

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ATTTAATAAAAGAGAAACCT	263	TGG	+	AUUUAAUAAAAGAGAAACCU	3357
TTTAATAAAAGAGAAACCTT	264	GGG	+	UUUAAUAAAAGAGAAACCUU	3358
ATTAAAAAGCAGGGAGAAGG	265	AGG	+	AUUAAAAAGCAGGGAGAAGG	3359
GAGTTCCAGAAGCATCTGTC	266	TGG	+	GAGUUCCAGAAGCAUCUGUC	3360
GAAGATGCTGGCTTGGCCCA	267	GGG	-	GAAGAUGCUGGCUUGGCCCA	3361
GCTAGAGGAGAGAGAGTCTT	268	AGG	-	GCUAGAGGAGAGAGAGUCUU	3362
CGAAGGAGGCGAGACACCTG	269	TGG	-	CGAAGGAGGCGAGACACCUG	3363
GACAAACAGCCTTTGTCTTC	270	AGG	-	GACAAACAGCCUUUGUCUUC	3364
TATTGGATTCAATGCCAATA	271	AGG	+	UAUUGGAUUCAAUGCCAAUA	3365
TCCCCACCCTCAAGAGAAGC	272	TGG	-	UCCCCACCCUCAAGAGAAGC	3366
TCACAGCAGAGTGGCCCTTT	273	TGG	+	UCACAGCAGAGUGGCCCUUU	3367
GATTGAGAGGGAATTGGAAC	274	TGG	-	GAUUGAGAGGGAAUUGGAAC	3368
TTTTGGGAGACCAAAGGCAA	275	GGG	-	UUUUGGGAGACCAAAGGCAA	3369
CCCAGCTTCTCTTGAGGGTG	276	GGG	+	CCCAGCUUCUCUUGAGGGUG	3370
GACTGCACTCACCTCGGAAC	277	CGG	+	GACUGCACUCACCUCGGAAC	3371
GGCAACAGGGTCCGGTTCCG	278	AGG	-	GGCAACAGGGUCCGGUUCCG	3372
TGACGAGGTTGGGGGTGTCC	279	GGG	-	UGACGAGGUUGGGGGUGUCC	3373
TAGGCTTTGCCCTCATACAT	280	GGG	-	UAGGCUUUGCCCUCAUACAU	3374
TGAAGCATATCACTTCTGCT	281	AGG	-	UGAAGCAUAUCACUUCUGCU	3375
AATCAGAATTCTTGGTTTCA	282	CGG	+	AAUCAGAAUUCUUGGUUUCA	3376
GATGTTCTAAAAATCCTTAT	283	TGG	-	GAUGUUCUAAAAAUCCUUAU	3377
AGACAAATGCTTTCTGCGGG	284	AGG	+	AGACAAAUGCUUUCUGCGGG	3378
TGTTACCATCAGAGATTGCA	285	GGG	+	UGUUACCAUCAGAGAUUGCA	3379
CCCGCCAAAGCGTTTTGCGC	286	AGG	+	CCCGCCAAAGCGUUUUGCGC	3380
CAGTTGTGTGGAAATATGAT	287	TGG	+	CAGUUGUGUGGAAAUAUGAU	3381
ACGATGTCCACAAAGAAGAC	288	AGG	-	ACGAUGUCCACAAAGAAGAC	3382
TTAGGCGACAGGCATATTCA	289	TGG	-	UUAGGCGACAGGCAUAUUCA	3383
GCTGGTTTAAAGCACTGATG	290	GGG	-	GCUGGUUUAAAGCACUGAUG	3384
CCAGGAAACGTCCTCTTTAT	291	AGG	+	CCAGGAAACGUCCUCUUUAU	3385
TCAGCCCATTCCCTATAAAG	292	AGG	-	UCAGCCCAUUCCCUAUAAAG	3386
AGAAAGCTTTCTGTATCTCA	293	GGG	-	AGAAAGCUUUCUGUAUCUCA	3387
ACTTATTAAATAAGTATGGA	294	TGG	-	ACUUAUUAAAUAAGUAUGGA	3388
ATTGGATTGCACCCAGGAAT	295	TGG	+	AUUGGAUUGCACCCAGGAAU	3389
TGCTTTCAGAGCCAATTCCT	296	GGG	-	UGCUUUCAGAGCCAAUUCCU	3390
TTCTGCCCCTTGGTCCAAAA	297	GGG	-	UUCUGCCCCUUGGUCCAAAA	3391
CAAATGGTGAGCTGAGGGAC	298	AGG	+	CAAAUGGUGAGCUGAGGGAC	3392
CCTTTAGCTTCCACCACTCT	299	AGG	-	CCUUUAGCUUCCACCACUCU	3393
AGGTCAACCTAGTTTAAATA	300	TGG	+	AGGUCAACCUAGUUUAAAUA	3394
TTGGTTGCCTGTCTTCTTTG	301	TGG	+	UUGGUUGCCUGUCUUCUUUG	3395
AGAAATCCGAGAGTGAGCCC	302	TGG	-	AGAAAUCCGAGAGUGAGCCC	3396
ACTGCAACCTTCCGCCCGCC	303	TGG	+	ACUGCAACCUUCCGCCCGCC	3397
ATCGATTGAACCCAGGCGGG	304	CGG	-	AUCGAUUGAACCCAGGCGGG	3398
TAGGCGACAGGCATATTCAT	305	GGG	-	UAGGCGACAGGCAUAUUCAU	3399
GGCGTGTTCCAGGAAGAGCA	306	AGG	-	GGCGUGUUCCAGGAAGAGCA	3400
CAAGCACACGCTCACCTCGA	307	GGG	+	CAAGCACACGCUCACCUCGA	3401
TTTATTATTATATGCATCAT	308	AGG	+	UUUAUUAUUAUAUGCAUCAU	3402
ATCTCAGGGTTCTTGCCTTG	309	GGG	-	AUCUCAGGGUUCUUGCCUUG	3403
CTTATTTAATAAGTTTTACA	310	TGG	+	CUUAUUUAAUAAGUUUUACA	3404
GGCAACCAATTTCTAACATC	311	TGG	-	GGCAACCAAUUUCUAACAUC	3405
AGAAGCAGTGGAGGGTAAAT	312	TGG	-	AGAAGCAGUGGAGGGUAAAU	3406
ATCACAGAAGCCATCTAAAC	313	AGG	+	AUCACAGAAGCCAUCUAAAC	3407
GCTGGCTTGGCCCAGGGTGG	314	TGG	-	GCUGGCUUGGCCCAGGGUGG	3408
TTTAGCAATGTTTACTGGGT	315	GGG	+	UUUAGCAAUGUUUACUGGGU	3409
CTGTTTGTTCAGATTCGTGT	316	TGG	+	CUGUUUGUUCAGAUUCGUGU	3410
ACTGAGAAAACTGCAGAAGC	317	AGG	-	ACUGAGAAAACUGCAGAAGC	3411
TAAATTAATTAAAATTGGCC	318	GGG	-	UAAAUUAAUUAAAAUUGGCC	3412
TCTCCAGGTGCCCTGCAACG	319	TGG	+	UCUCCAGGUGCCCUGCAACG	3413
TTCCCACTGGCCCACGTTGC	320	AGG	-	UUCCCACUGGCCCACGUUGC	3414

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TCGCTTAGCATATGTGGTTG	321	AGG	+	UCGCUUAGCAUAUGUGGUUG	3415
GATGCTTCTGGAACTCAAGG	322	GGG	-	GAUGCUUCUGGAACUCAAGG	3416
CAGCATGTGCCAAGCCCTCG	323	AGG	-	CAGCAUGUGCCAAGCCCUCG	3417
TCACAACAACTTCGGCCTCC	324	TGG	-	UCACAACAACUUCGGCCUCC	3418
ATCATCGCAGAAGGTTGCAT	325	TGG	-	AUCAUCGCAGAAGGUUGCAU	3419
GGCCTTTAACAGCACTTGAA	326	AGG	+	GGCCUUUAACAGCACUUGAA	3420
CGAGGCGGGCAAACCACTTG	327	AGG	-	CGAGGCGGGCAAACCACUUG	3421
TCTGAAGGGCCCTGTCAGTT	328	AGG	-	UCUGAAGGGCCCUGUCAGUU	3422
AGAAATATCTCAGCCTCTAA	329	AGG	-	AGAAAUAUCUCAGCCUCUAA	3423
GATGCTGGCTTGGCCCAGGG	330	TGG	-	GAUGCUGGCUUGGCCCAGGG	3424
CCACGGCAAGTGTGGCAACA	331	GGG	-	CCACGGCAAGUGUGGCAACA	3425
CCAAGCACACGCTCACCTCG	332	AGG	+	CCAAGCACACGCUCACCUCG	3426
CATCTTCACACCGCAATGTT	333	GGG	-	CAUCUUCACACCGCAAUGUU	3427
TTGTGTGGAAATATGATTGG	334	AGG	+	UUGUGUGGAAAUAUGAUUGG	3428
CTGCTTAGATTTTCTTGCTG	335	AGG	-	CUGCUUAGAUUUUCUUGCUG	3429
CTCCAGGTGCCCTGCAACGT	336	GGG	+	CUCCAGGUGCCCUGCAACGU	3430
GATGCATCCCATTGTACAGC	337	TGG	+	GAUGCAUCCCAUUGUACAGC	3431
GAAGGTTTCAGCGAAGACAA	338	GGG	-	GAAGGUUUCAGCGAAGACAA	3432
GTAGTGCCCACAGGATCTGC	339	GGG	-	GUAGUGCCCACAGGAUCUGC	3433
TCAGGTTCCCAGCTGTACAA	340	TGG	-	UCAGGUUCCCAGCUGUACAA	3434
TCCAAAATTGGATTGCACCC	341	AGG	+	UCCAAAAUUGGAUUGCACCC	3435
CTCCCTCTGGTACAATGTTG	342	TGG	-	CUCCCUCUGGUACAAUGUUG	3436
CACCTGTGGGCAAAGCATTC	343	TGG	-	CACCUGUGGGCAAAGCAUUC	3437
AGGACCATCCAGGGCAAATT	344	GGG	+	AGGACCAUCCAGGGCAAAUU	3438
AGTAACAAAAGTCATCAGCC	345	TGG	-	AGUAACAAAAGUCAUCAGCC	3439
CTGCAACCTTCCGCCCGCCT	346	GGG	+	CUGCAACCUUCCGCCCGCCU	3440
ACAGATGCTTCTGGAACTCA	347	AGG	-	ACAGAUGCUUCUGGAACUCA	3441
GGGCGGGCGGAAGGGGAAGA	348	AGG	-	GGGCGGGCGGAAGGGGAAGA	3442
CCCTGTTGCCACACTTGCCG	349	TGG	+	CCCUGUUGCCACACUUGCCG	3443
CGTTTCCTGGCCGGACGCAG	350	TGG	-	CGUUUCCUGGCCGGACGCAG	3444
CAGCCTTGTCAACACTAGGT	351	TGG	+	CAGCCUUGUCAACACUAGGU	3445
GGACCATCCAGGGCAAATTG	352	GGG	+	GGACCAUCCAGGGCAAAUUG	3446
GTAACAAAAGTCATCAGCCT	353	GGG	-	GUAACAAAAGUCAUCAGCCU	3447
ATGCATCCCATTGTACAGCT	354	GGG	+	AUGCAUCCCAUUGUACAGCU	3448
TCTCGCTGTGTTGCTCAGGG	355	TGG	+	UCUCGCUGUGUUGCUCAGGG	3449
ACTGGGGAAGTAGTGCCCAC	356	AGG	-	ACUGGGGAAGUAGUGCCCAC	3450
GCTGAAGCAGATACACCACA	357	TGG	-	GCUGAAGCAGAUACACCACA	3451
ACTGACAGCACCCAACATTG	358	CGG	+	ACUGACAGCACCCAACAUUG	3452
CCATCTTCACACCGCAATGT	359	TGG	-	CCAUCUUCACACCGCAAUGU	3453
TACAGTGGACACAAAAAAAG	360	TGG	+	UACAGUGGACACAAAAAAAG	3454
GAGTCTCGCTGTGTTGCTCA	361	GGG	+	GAGUCUCGCUGUGUUGCUCA	3455
ATTACTGACCACAGTTTCAA	362	AGG	-	AUUACUGACCACAGUUUCAA	3456
ATGTGCTAGATGATCCATAG	363	CGG	-	AUGUGCUAGAUGAUCCAUAG	3457
TATCCAGATGGAGATGCATA	364	AGG	+	UAUCCAGAUGGAGAUGCAUA	3458
TCTGAGGTACCATATCCTTA	365	TGG	-	UCUGAGGUACCAUAUCCUUA	3459
CAGGAAACGTCCTCTTTATA	366	GGG	+	CAGGAAACGUCCUCUUUAUA	3460
AATTGCCTTCACTTAGGCGT	367	TGG	+	AAUUGCCUUCACUUAGGCGU	3461
AGAGGGAGCCTTTGAAACTG	368	TGG	+	AGAGGGAGCCUUUGAAACUG	3462
GCGTGTGCTTGGCGTGTTCC	369	AGG	-	GCGUGUGCUUGGCGUGUUCC	3463
TTGAAAATAAGAAGTTGGCT	370	GGG	+	UUGAAAAUAAGAAGUUGGCU	3464
ATCTGCGGGCAGATTACGCG	371	TGG	-	AUCUGCGGGCAGAUUACGCG	3465
GTAAGCACTGAATGGCCTAC	372	AGG	-	GUAAGCACUGAAUGGCCUAC	3466
CAGGACCATCCAGGGCAAAT	373	TGG	+	CAGGACCAUCCAGGGCAAAU	3467
ATTCTGCCCCTTGGTCCAAA	374	AGG	-	AUUCUGCCCCUUGGUCCAAA	3468
ATGCATAAGGCCCATAGACA	375	TGG	+	AUGCAUAAGGCCCAUAGACA	3469
ATGCATCTTTCCCATGTCTA	376	TGG	-	AUGCAUCUUUCCCAUGUCUA	3470
TCCTGGGTGCAATCCAATTT	377	TGG	-	UCCUGGGUGCAAUCCAAUUU	3471
GCCTTTCCTCATGGGTTGCA	378	AGG	+	GCCUUUCCUCAUGGGUUGCA	3472

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AGAGCTGCCATTTGCGGGGC	379	GGG	-	AGAGCUGCCAUUUGCGGGGC	3473
ACACCCCAATTTGCCCTGGA	380	TGG	-	ACACCCCAAUUUGCCCUGGA	3474
TTTCGCTGTGTCTGTCTACC	381	AGG	-	UUUCGCUGUGUCUGUCUACC	3475
TTACAAAAATGATCCGGGCG	382	TGG	-	UUACAAAAAUGAUCCGGGCG	3476
CTGCTTTCAGAGCCAATTCC	383	TGG	-	CUGCUUUCAGAGCCAAUUCC	3477
CCCCACCCTCAAGAGAAGCT	384	GGG	-	CCCCACCCUCAAGAGAAGCU	3478
GGTTGCCCAGGGGCTGGGGG	385	AGG	-	GGUUGCCCAGGGGCUGGGGG	3479
GTCCACAACATTGTACCAGA	386	GGG	+	GUCCACAACAUUGUACCAGA	3480
ACCTGTGGGCAAAGCATTCT	387	GGG	-	ACCUGUGGGCAAAGCAUUCU	3481
TTCCAAGTAGCTCGGATCAC	388	AGG	+	UUCCAAGUAGCUCGGAUCAC	3482
CAGTGTGGTGGCTGCAGGTG	389	AGG	+	CAGUGUGGUGGCUGCAGGUG	3483
ATTTTCCCACATTATGTATA	390	TGG	+	AUUUUCCCACAUUAUGUAUA	3484
GGGATGAGCTCTTAAAAGAA	391	GGG	-	GGGAUGAGCUCUUAAAAGAA	3485
TAGAATTTAATATTCCAAAC	392	CGG	+	UAGAAUUUAAUAUUCCAAAC	3486
GAGGTTTCCTGACTCTCAGT	393	TGG	-	GAGGUUUCCUGACUCUCAGU	3487
AATCTAAGCAGACTCTTTCA	394	AGG	+	AAUCUAAGCAGACUCUUUCA	3488
TTTGGGAGACCAAAGGCAAG	395	GGG	-	UUUGGGAGACCAAAGGCAAG	3489
AATGTACCTTGCAACCCATG	396	AGG	-	AAUGUACCUUGCAACCCAUG	3490
AGTGAAATATTTCGATTATG	397	TGG	-	AGUGAAAUAUUUCGAUUAUG	3491
CAGATGCTTCTGGAACTCAA	398	GGG	-	CAGAUGCUUCUGGAACUCAA	3492
AGTAGTGCCCACAGGATCTG	399	CGG	-	AGUAGUGCCCACAGGAUCUG	3493
CTCCTGGGCCCTTGTTCCAC	400	TGG	-	CUCCUGGGCCCUUGUUCCAC	3494
TAATAAGTTTTACATGGCAC	401	AGG	+	UAAUAAGUUUUACAUGGCAC	3495
TCTGCTCAGAATTTCTCCTC	402	AGG	+	UCUGCUCAGAAUUUCUCCUC	3496
AGGAGGGGGCAAGGAGTAAA	403	AGG	-	AGGAGGGGGCAAGGAGUAAA	3497
TAGAGCTGCCATTTGCGGGG	404	CGG	-	UAGAGCUGCCAUUUGCGGGG	3498
ACAGTTTCAAAGGCTCCCTC	405	TGG	-	ACAGUUUCAAAGGCUCCCUC	3499
CGGTAGCCACTAGTTTCATG	406	TGG	+	CGGUAGCCACUAGUUUCAUG	3500
CCTTACACCCCAATTTGCCC	407	TGG	-	CCUUACACCCCAAUUUGCCC	3501
AAGAAATACAATAAATTAGC	408	CGG	-	AAGAAAUACAAUAAAUUAGC	3502
CTAAACCTGAGTGTAAAAAA	409	TGG	-	CUAAACCUGAGUGUAAAAAA	3503
CCAGTCCCAGCTTCTCTTGA	410	GGG	+	CCAGUCCCAGCUUCUCUUGA	3504
AGAAACGGAAGTCTGAGGCT	411	GGG	-	AGAAACGGAAGUCUGAGGCU	3505
CCCAGGAGAAGACAGGCCAC	412	TGG	-	CCCAGGAGAAGACAGGCCAC	3506
AAGTCGATCCGTGGTTGCCC	413	AGG	-	AAGUCGAUCCGUGGUUGCCC	3507
AAGAAACGGAAGTCTGAGGC	414	TGG	-	AAGAAACGGAAGUCUGAGGC	3508
GCCACGGCAAGTGTGGCAAC	415	AGG	-	GCCACGGCAAGUGUGGCAAC	3509
ATGACGAGGTTGGGGGTGTC	416	CGG	-	AUGACGAGGUUGGGGGUGUC	3510
AAAGCCTAATCACCTCCCAA	417	AGG	+	AAAGCCUAAUCACCUCCCAA	3511
GGTCTCCCAAAAAGAGGATC	418	TGG	+	GGUCUCCCAAAAAGAGGAUC	3512
TAGGTTTGATGGCCTGCTTC	419	AGG	+	UAGGUUUGAUGGCCUGCUUC	3513
CTTGGCGCTATACTAGGACT	420	GGG	-	CUUGGCGCUAUACUAGGACU	3514
GGAAACGCTACCATCAAATA	421	TGG	-	GGAAACGCUACCAUCAAAUA	3515
CCTACTGTGTGCCCTACCCT	422	GGG	+	CCUACUGUGUGCCCUACCCU	3516
CATCCCTCTGGCCCAGGGTA	423	GGG	-	CAUCCCUCUGGCCCAGGGUA	3517
TGGAGCATCCCTCTGGCCCA	424	GGG	-	UGGAGCAUCCCUCUGGCCCA	3518
TGTAGATGCTCTGCTTTTGA	425	TGG	+	UGUAGAUGCUCUGCUUUUGA	3519
GTAGTCCCAGCTACCATGGG	426	AGG	+	GUAGUCCCAGCUACCAUGGG	3520
GCTTGGCGCTATACTAGGAC	427	TGG	-	GCUUGGCGCUAUACUAGGAC	3521
AAAAAAACAAGTCTGGGAAA	428	TGG	+	AAAAAAACAAGUCUGGGAAA	3522
TGCCCCCTCCCTCCTGAAGC	429	TGG	-	UGCCCCCUCCCUCCUGAAGC	3523
CTAAAATTACAAAAATGATC	430	CGG	-	CUAAAAUUACAAAAAUGAUC	3524
TCTCTCTGCTCACTTCCATA	431	AGG	+	UCUCUCUGCUCACUUCCAUA	3525
TCCTCTTTTTGGGAGACCAA	432	AGG	-	UCCUCUUUUUGGGAGACCAA	3526
TCACAGAAGCCATCTAAACA	433	GGG	+	UCACAGAAGCCAUCUAAACA	3527
AATGTTTACTGGGTGGGTGG	434	AGG	+	AAUGUUUACUGGGUGGGUGG	3528
GCGCACATGTCTCTTAGCCT	435	AGG	-	GCGCACAUGUCUCUUAGCCU	3529
TGCTGGTTTAAAGCACTGAT	436	GGG	-	UGCUGGUUUAAAGCACUGAU	3530

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GCCTTTGGTCTCCCAAAAAG	437	AGG	+	GCCUUUGGUCUCCCAAAAAG	3531
CAGTGCCAGATCCTCTTTTT	438	GGG	-	CAGUGCCAGAUCCUCUUUUU	3532
CGGGCAGATTACGCGTGGCA	439	GGG	-	CGGGCAGAUUACGCGUGGCA	3533
GAGAGTCTTAGGAGATGACG	440	AGG	-	GAGAGUCUUAGGAGAUGACG	3534
AAGGGGCAAGCTAGTGATAC	441	TGG	+	AAGGGGCAAGCUAGUGAUAC	3535
GTGGAGTTTGGCCAGGCTGT	442	CGG	+	GUGGAGUUUGGCCAGGCUGU	3536
CCCACTCTTCTCCGACAGCC	443	TGG	-	CCCACUCUUCUCCGACAGCC	3537
ATATGGCACCTGGACACACA	444	AGG	-	AUAUGGCACCUGGACACACA	3538
GCATTTGTCTGTAGACAGCC	445	TGG	-	GCAUUUGUCUGUAGACAGCC	3539
GTTGCCCAGGGGCTGGGGGA	446	GGG	-	GUUGCCCAGGGGCUGGGGGA	3540
AGATGCTTCTGGAACTCAAG	447	GGG	-	AGAUGCUUCUGGAACUCAAG	3541
GCTGGATTCTGACTACACTG	448	GGG	-	GCUGGAUUCUGACUACACUG	3542
AAAAAAAAAGTCATTGTTCT	449	TGG	+	AAAAAAAAAGUCAUUGUUCU	3543
AGGCCTGGGGGTGGAGCCCG	450	AGG	-	AGGCCUGGGGGUGGAGCCCG	3544
ATTAATGTAGCAAAGTGGAC	451	AGG	-	AUUAAUGUAGCAAAGUGGAC	3545
GCCCTGCAACGTGGGCCAGT	452	GGG	+	GCCCUGCAACGUGGGCCAGU	3546
TTCTCTTACACCGCACATAT	453	TGG	+	UUCUCUUACACCGCACAUAU	3547
AAAAATAGGTTTAAAAATAT	454	TGG	+	AAAAAUAGGUUUAAAAAUAU	3548
CACAACAACTTCGGCCTCCT	455	GGG	-	CACAACAACUUCGGCCUCCU	3549
GCAAGGTTTTATTGAGTGGA	456	AGG	-	GCAAGGUUUUAUUGAGUGGA	3550
TATCTCAGGGTTCTTGCCTT	457	GGG	-	UAUCUCAGGGUUCUUGCCUU	3551
ATGTCTGGGAAGGCCGGGTG	458	TGG	+	AUGUCUGGGAAGGCCGGGUG	3552
TGCATCTTTCCCATGTCTAT	459	GGG	-	UGCAUCUUUCCCAUGUCUAU	3553
TGTGAAAGTGTTACTATTTT	460	AGG	-	UGUGAAAGUGUUACUAUUUU	3554
AAGAAAGAGAATAGATAGTA	461	TGG	-	AAGAAAGAGAAUAGAUAGUA	3555
CTAGCCTATGAGCTTTATGA	462	TGG	+	CUAGCCUAUGAGCUUUAUGA	3556
TCCACGCTGCTGAGGCAGTG	463	AGG	-	UCCACGCUGCUGAGGCAGUG	3557
TTTCTATGGCCAGCTTCAGG	464	AGG	+	UUUCUAUGGCCAGCUUCAGG	3558
GGGAAGGAACGCTCTATGGT	465	TGG	+	GGGAAGGAACGCUCUAUGGU	3559
GGGCAGATTACGCGTGGCAG	466	GGG	-	GGGCAGAUUACGCGUGGCAG	3560
CTTGCCATCATAAAGCTCAT	467	AGG	-	CUUGCCAUCAUAAAGCUCAU	3561
GAGTTTTGATAGGCACAGGA	468	TGG	-	GAGUUUUGAUAGGCACAGGA	3562
GCAAGAAATGGGTCCAAAAT	469	TGG	+	GCAAGAAAUGGGUCCAAAAU	3563
GGATGGGACAGAGCATCTCC	470	TGG	+	GGAUGGGACAGAGCAUCUCC	3564
GTTCCGCCGGTTGATGGCCT	471	GGG	-	GUUCCGCCGGUUGAUGGCCU	3565
TTTTTACACTCAGGTTTAGT	472	CGG	+	UUUUUACACUCAGGUUUAGU	3566
TGCCCTGCAACGTGGGCCAG	473	TGG	+	UGCCCUGCAACGUGGGCCAG	3567
TGGGCCAGTGGGAAGGTTTG	474	GGG	+	UGGGCCAGUGGGAAGGUUUG	3568
GACAAATGCTTTCTGCGGGA	475	GGG	+	GACAAAUGCUUUCUGCGGGA	3569
CAGATTACGCGTGGCAGGGG	476	TGG	-	CAGAUUACGCGUGGCAGGGG	3570
GCCCTGCAGGAACTGGCTCC	477	CGG	+	GCCCUGCAGGAACUGGCUCC	3571
TCTTTAGCAGGTAGAGTACC	478	TGG	+	UCUUUAGCAGGUAGAGUACC	3572
CACCTACCAAGCCCGACTCC	479	AGG	+	CACCUACCAAGCCCGACUCC	3573
CTCCTGGAGTCGGGCTTGGT	480	AGG	-	CUCCUGGAGUCGGGCUUGGU	3574
GATGCTTTTCTCCTGGAGTC	481	GGG	-	GAUGCUUUUCUCCUGGAGUC	3575
ACTGACCTTCCTAGGTTTGA	482	TGG	+	ACUGACCUUCCUAGGUUUGA	3576
GCAGGCCATCAAACCTAGGA	483	AGG	-	GCAGGCCAUCAAACCUAGGA	3577
CTCATCCCTGACTATCTGCT	484	AGG	+	CUCAUCCCUGACUAUCUGCU	3578
GTGGGCCAGTGGGAAGGTTT	485	GGG	+	GUGGGCCAGUGGGAAGGUUU	3579
AGAATCGATTGAACCCAGGC	486	GGG	-	AGAAUCGAUUGAACCCAGGC	3580
ACGTCCTCTTTATAGGGAAT	487	GGG	+	ACGUCCUCUUUAUAGGGAAU	3581
CTATTTGGCAATTTATACAA	488	AGG	-	CUAUUUGGCAAUUUAUACAA	3582
CAAAAATCAGCTGGGCTTTG	489	TGG	-	CAAAAAUCAGCUGGGCUUUG	3583
GGCTGTGAGGCAGTTTCTGA	490	AGG	-	GGCUGUGAGGCAGUUUCUGA	3584
CGTACAAAAGGGGCCGGGCG	491	CGG	-	CGUACAAAAGGGGCCGGGCG	3585
CTTCTTATTTTCAAATCCAA	492	TGG	-	CUUCUUAUUUUCAAAUCCAA	3586
CGTTCCGCCGGTTGATGGCC	493	TGG	-	CGUUCCGCCGGUUGAUGGCC	3587
ACTACTACCACATTGGTGAC	494	TGG	+	ACUACUACCACAUUGGUGAC	3588

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CACAAGGGGCTTGAGGACCC	495	AGG	-	CACAAGGGGCUUGAGGACCC	3589
TTATAGGGAATGGGCTGAGC	496	AGG	+	UUAUAGGGAAUGGGCUGAGC	3590
CTTTAGCAGGTAGAGTACCT	497	GGG	+	CUUUAGCAGGUAGAGUACCU	3591
CCTAGACACTGCCGTGGGTT	498	TGG	+	CCUAGACACUGCCGUGGGUU	3592
GCTGTGGGGCTCCAAACCCA	499	CGG	-	GCUGUGGGGCUCCAAACCCA	3593
CATAGCGGGTGAGTAACCAG	500	TGG	+	CAUAGCGGGUGAGUAACCAG	3594
CTCTTAGCCTAGGAAGATTC	501	AGG	-	CUCUUAGCCUAGGAAGAUUC	3595
TAAAGAAATTGCCTTCACTT	502	AGG	+	UAAAGAAAUUGCCUUCACUU	3596
TTCATCCAACGCCTAAGTGA	503	AGG	-	UUCAUCCAACGCCUAAGUGA	3597
TGGCTGGATTCTGACTACAC	504	TGG	-	UGGCUGGAUUCUGACUACAC	3598
CTACTACCACATTGGTGACT	505	GGG	+	CUACUACCACAUUGGUGACU	3599
TACTTCGATGGGCTATGCAG	506	GGG	-	UACUUCGAUGGGCUAUGCAG	3600
TGTCCAGGTGCCATATTTGA	507	TGG	+	UGUCCAGGUGCCAUAUUUGA	3601
TGCATAAGGCCCATAGACAT	508	GGG	+	UGCAUAAGGCCCAUAGACAU	3602
GCCCAGGGGCTGGGGGAGGG	509	GGG	-	GCCCAGGGGCUGGGGGAGGG	3603
ACCTTGCAACCCATGAGGAA	510	AGG	-	ACCUUGCAACCCAUGAGGAA	3604
ATTACGCGTGGCAGGGGTGG	511	GGG	-	AUUACGCGUGGCAGGGGUGG	3605
TGTGTGTGTTGGGTGGGAGT	512	GGG	-	UGUGUGUGUUGGGUGGGAGU	3606
ATCATAATACATCTCAGAGG	513	TGG	+	AUCAUAAUACAUCUCAGAGG	3607
CTACCATCCTATGGCCACCA	514	GGG	-	CUACCAUCCUAUGGCCACCA	3608
AACCTCTTTGGAAAACTATT	515	TGG	-	AACCUCUUUGGAAAACUAUU	3609
CCCCTTGTGAGCAGAGAGTG	516	AGG	+	CCCCUUGUGAGCAGAGAGUG	3610
CATGAACCTTGAGATAAGTG	517	AGG	-	CAUGAACCUUGAGAUAAGUG	3611
CAGAAAAACTTCACACTGCT	518	AGG	+	CAGAAAAACUUCACACUGCU	3612
GGCCCATTTCAGGAGAGAAA	519	GGG	+	GGCCCAUUUCAGGAGAGAAA	3613
TTAAAGCACTGATGGGGTGC	520	AGG	-	UUAAAGCACUGAUGGGGUGC	3614
GCATATTCTGGAAAACTTTT	521	AGG	+	GCAUAUUCUGGAAAACUUUU	3615
CTGGAGCATCCCTCTGGCCC	522	AGG	-	CUGGAGCAUCCCUCUGGCCC	3616
CTCCCCCCTCCCCCAGCCCC	523	TGG	+	CUCCCCCCUCCCCCAGCCCC	3617
TCCCCCCTCCCCCAGCCCCT	524	GGG	+	UCCCCCCUCCCCCAGCCCCU	3618
TCCGTGGTTGCCCAGGGGCT	525	GGG	-	UCCGUGGUUGCCCAGGGGCU	3619
ATCCGTGGTTGCCCAGGGGC	526	TGG	-	AUCCGUGGUUGCCCAGGGGC	3620
CGACAAAAGACAGATTAATG	527	AGG	+	CGACAAAAGACAGAUUAAUG	3621
AAGATTAGACTGACCTTCCT	528	AGG	+	AAGAUUAGACUGACCUUCCU	3622
CTTGCTGAGGAAAGAGGAGG	529	GGG	-	CUUGCUGAGGAAAGAGGAGG	3623
GCAGAGAGAGAAGGAACGAC	530	AGG	-	GCAGAGAGAGAAGGAACGAC	3624
CTCTGCTCACAAGGGGCTTG	531	AGG	-	CUCUGCUCACAAGGGGCUUG	3625
GACAAAAGACAGATTAATGA	532	GGG	+	GACAAAAGACAGAUUAAUGA	3626
AAGTATGCAATGAATGTCAA	533	TGG	-	AAGUAUGCAAUGAAUGUCAA	3627
CCCCAGCCCCTGGGCAACCA	534	CGG	+	CCCCAGCCCCUGGGCAACCA	3628
GTGTTACTATTTTAGGCGAC	535	AGG	-	GUGUUACUAUUUUAGGCGAC	3629
AAAGCAGAGCATCTACATCG	536	GGG	-	AAAGCAGAGCAUCUACAUCG	3630
GGGTCTTACTCTTGTCGCCC	537	AGG	-	GGGUCUUACUCUUGUCGCCC	3631
TAAAACTTATTAAATAAGTA	538	TGG	-	UAAAACUUAUUAAAUAAGUA	3632
ATCTGTGGGCAAGAAAAAGG	539	TGG	+	AUCUGUGGGCAAGAAAAAGG	3633
GAGTACCTGGGAGAGAGGGT	540	GGG	+	GAGUACCUGGGAGAGAGGGU	3634
CCTCACTCTCTGCTCACAAG	541	GGG	-	CCUCACUCUCUGCUCACAAG	3635
AGCTGGGAACCTGAAGACAA	542	AGG	+	AGCUGGGAACCUGAAGACAA	3636
GCGGGCAGATTACGCGTGGC	543	AGG	-	GCGGGCAGAUUACGCGUGGC	3637
AACACAAGGAAGTAGGGAAC	544	AGG	-	AACACAAGGAAGUAGGGAAC	3638
CTCACCAGACCCAAATCTGC	545	TGG	-	CUCACCAGACCCAAAUCUGC	3639
GAAGGGAGATGCTTTTCTCC	546	TGG	-	GAAGGGAGAUGCUUUUCUCC	3640
AAATGGAGTTTTGGTGGTGT	547	AGG	+	AAAUGGAGUUUUGGUGGUGU	3641
TGAAGCAGGCCATCAAACCT	548	AGG	-	UGAAGCAGGCCAUCAAACCU	3642
AGGTTTGATGGCCTGCTTCA	549	GGG	+	AGGUUUGAUGGCCUGCUUCA	3643
CACCTCTTCTTCCCTGAAGC	550	AGG	-	CACCUCUUCUUCCCUGAAGC	3644
ACAGTGCCAGATCCTCTTTT	551	TGG	-	ACAGUGCCAGAUCCUCUUUU	3645
CTGTTCATCAAGAGATGCAA	552	AGG	-	CUGUUCAUCAAGAGAUGCAA	3646

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGCTGGGGGAGGGGGGAGAC	553	AGG	-	GGCUGGGGGAGGGGGGAGAC	3647
ATAATCTGTGGGCAAGAAAA	554	AGG	+	AUAAUCUGUGGGCAAGAAAA	3648
TTATTATTATATGCATCATA	555	GGG	+	UUAUUAUUAUAUGCAUCAUA	3649
TAAACCTATTTTTATAGAGA	556	TGG	-	UAAACCUAUUUUUAUAGAGA	3650
ATCTGCTGGCACCTTGATCG	557	TGG	-	AUCUGCUGGCACCUUGAUCG	3651
TTGTTTCTATGGCCAGCTTC	558	AGG	+	UUGUUUCUAUGGCCAGCUUC	3652
GAGGTGAGTGCAGTCATCCG	559	AGG	-	GAGGUGAGUGCAGUCAUCCG	3653
AAAAGCAGAGCATCTACATC	560	GGG	-	AAAAGCAGAGCAUCUACAUC	3654
CAAGCTAGTGATACTGGAGG	561	GGG	+	CAAGCUAGUGAUACUGGAGG	3655
AGGATAGAGCTGCCATTTGC	562	GGG	-	AGGAUAGAGCUGCCAUUUGC	3656
AGATTACGCGTGGCAGGGGT	563	GGG	-	AGAUUACGCGUGGCAGGGGU	3657
AGGTGAGTGCAGTCATCCGA	564	GGG	-	AGGUGAGUGCAGUCAUCCGA	3658
CCTAGAGTGGTGGAAGCTAA	565	AGG	+	CCUAGAGUGGUGGAAGCUAA	3659
CGATAGACGCCGGCAGCCCC	566	AGG	+	CGAUAGACGCCGGCAGCCCC	3660
CCCCGCTGCTCAAACCTCTG	567	GGG	-	CCCCGCUGCUCAAACCUCUG	3661
ACTTTTCCTCACTTATCTCA	568	AGG	+	ACUUUUCCUCACUUAUCUCA	3662
AATCAGCTGGGCTTTGTGGC	569	AGG	-	AAUCAGCUGGGCUUUGUGGC	3663
GCCAGTCCCAGCTTCTCTTG	570	AGG	+	GCCAGUCCCAGCUUCUCUUG	3664
AGGGGGGAGACAGGGAGAAT	571	GGG	-	AGGGGGGAGACAGGGAGAAU	3665
GTGTGTGTGTTGGGTGGGAG	572	TGG	-	GUGUGUGUGUUGGGUGGGAG	3666
GGGAGGATCATGAGAGTTGG	573	AGG	-	GGGAGGAUCAUGAGAGUUGG	3667
AAGTGTCCTTCAAGGGGTCA	574	TGG	-	AAGUGUCCUUCAAGGGGUCA	3668
TACCATCCTATGGCCACCAG	575	GGG	-	UACCAUCCUAUGGCCACCAG	3669
CCTACCATCCTATGGCCACC	576	AGG	-	CCUACCAUCCUAUGGCCACC	3670
CCAGCTACCATGGGAGGCTG	577	AGG	+	CCAGCUACCAUGGGAGGCUG	3671
CTGATTCTTCCGATACCCCA	578	AGG	+	CUGAUUCUUCCGAUACCCCA	3672
CGTGGTTGCCCAGGGGCTGG	579	GGG	-	CGUGGUUGCCCAGGGGCUGG	3673
GAGGATAGAGCTGCCATTTG	580	CGG	-	GAGGAUAGAGCUGCCAUUUG	3674
AGTCTGAGGCTGGGGCAACT	581	**GGG**	-	**AGUCUGAGGCUGGGGCAACU**	3675
AGATGCTTTTCTCCTGGAGT	582	CGG	-	AGAUGCUUUUCUCCUGGAGU	3676
CCCATGGTGAGTACTTCGAT	583	GGG	-	CCCAUGGUGAGUACUUCGAU	3677
CAACAATTAATGAGAAAGTA	584	TGG	+	CAACAAUUAAUGAGAAAGUA	3678
CAATTTGCCCTGGATGGTCC	585	TGG	-	CAAUUUGCCCUGGAUGGUCC	3679
CGTAACATACCCAGTACCAC	586	TGG	+	CGUAACAUACCCAGUACCAC	3680
TCTTGCTGAGGAAAGAGGAG	587	GGG	-	UCUUGCUGAGGAAAGAGGAG	3681
GGTCCACAACATTGTACCAG	588	AGG	+	GGUCCACAACAUUGUACCAG	3682
TCATAATACATCTCAGAGGT	589	GGG	+	UCAUAAUACAUCUCAGAGGU	3683
AGGGATGAGCTCTTAAAAGA	590	AGG	-	AGGGAUGAGCUCUUAAAAGA	3684
CCCAGGGTAGGGCACACAGT	591	AGG	-	CCCAGGGUAGGGCACACAGU	3685
TACAGACAAATGCTTTCTGC	592	GGG	+	UACAGACAAAUGCUUUCUGC	3686
TAAAGCGCGCCTTTCCTCAT	593	GGG	+	UAAAGCGCGCCUUUCCUCAU	3687
AGTGGCCCTTTTGGACCAAG	594	GGG	+	AGUGGCCCUUUUGGACCAAG	3688
CCTCACTGAGAAGGTGATGT	595	TGG	-	CCUCACUGAGAAGGUGAUGU	3689
GGAGAAAACACAAGGAAGTA	596	GGG	-	GGAGAAAACACAAGGAAGUA	3690
AAGCTAGTGATACTGGAGGG	597	GGG	+	AAGCUAGUGAUACUGGAGGG	3691
CGTTGAGAGGAGTGCGCCGG	598	CGG	+	CGUUGAGAGGAGUGCGCCGG	3692
TCTGGGAAATGGAGTTTTGG	599	TGG	+	UCUGGGAAAUGGAGUUUUGG	3693
TTGCCCAGGGGCTGGGGGAG	600	GGG	-	UUGCCCAGGGGCUGGGGGAG	3694
GGGGCGAATGTTTACAGCTG	601	AGG	-	GGGGCGAAUGUUUACAGCUG	3695
TCAAAATGTCTGGGAAGGCC	602	GGG	+	UCAAAAUGUCUGGGAAGGCC	3696
TGGCCCATTTCAGGAGAGAA	603	AGG	+	UGGCCCAUUUCAGGAGAGAA	3697
TTCTCAGTATTTGGAAAGAC	604	TGG	+	UUCUCAGUAUUUGGAAAGAC	3698
GGGTGGGGAGGTCACAGAAC	605	AGG	-	GGGUGGGGAGGUCACAGAAC	3699
TTCTGGACAGTTCATTTCAA	606	TGG	+	UUCUGGACAGUUCAUUUCAA	3700
AGAAAGAAGGAAATTGCTTC	607	TGG	-	AGAAAGAAGGAAAUUGCUUC	3701
GCAAGGTGGTCTAACCTCTT	608	TGG	-	GCAAGGUGGUCUAACCUCUU	3702
TTCCGCCGGTTGATGGCCTG	609	GGG	-	UUCCGCCGGUUGAUGGCCUG	3703
GCCCATGGTGAGTACTTCGA	610	TGG	-	GCCCAUGGUGAGUACUUCGA	3704

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGGGCAAACATTGTGTATGA	611	CGG	+	GGGGCAAACAUUGUGUAUGA	3705
TAAGTATATTTACAGATTTG	612	TGG	+	UAAGUAUAUUUACAGAUUUG	3706
CCGTGGTTGCCCAGGGGCTG	613	GGG	-	CCGUGGUUGCCCAGGGGCUG	3707
AATCTGCCCGCAGATCCTGT	614	GGG	+	AAUCUGCCCGCAGAUCCUGU	3708
ACACAAGGAAGTAGGGAACA	615	GGG	-	ACACAAGGAAGUAGGGAACA	3709
GCCAGGCTGTCGGAGAAGAG	616	TGG	+	GCCAGGCUGUCGGAGAAGAG	3710
TTAATGTAGCAAAGTGGACA	617	GGG	-	UUAAUGUAGCAAAGUGGACA	3711
TGCAACGTGGGCCAGTGGGA	618	AGG	+	UGCAACGUGGGCCAGUGGGA	3712
AGCTCCCCAAACCTTCCCAC	619	TGG	-	AGCUCCCCAAACCUUCCCAC	3713
AGAGTGGCCCTTTTGGACCA	620	AGG	+	AGAGUGGCCCUUUUGGACCA	3714
ACTACATTAATGTAGCAAAG	621	TGG	-	ACUACAUUAAUGUAGCAAAG	3715
TGACTAGTCCCATGTGGTAT	622	TGG	-	UGACUAGUCCCAUGUGGUAU	3716
GATGCTATTAATAATTCTGT	623	TGG	+	GAUGCUAUUAAUAAUUCUGU	3717
CTGCCTCGGGCTCCACCCCC	624	AGG	+	CUGCCUCGGGCUCCACCCCC	3718
GGTTGATGGCCTGGGGCTGC	625	CGG	-	GGUUGAUGGCCUGGGGCUGC	3719
TAGTAAGATGTGGGGCCTTT	626	GGG	-	UAGUAAGAUGUGGGGCCUUU	3720
CAACTCCTGAATAGCACATT	627	GGG	+	CAACUCCUGAAUAGCACAUU	3721
CGTTAATCCATATTTAAACT	628	AGG	-	CGUUAAUCCAUAUUUAAACU	3722
GCTGGGGGAGGGGGGAGACA	629	GGG	-	GCUGGGGGAGGGGGGAGACA	3723
AGAAGGTTTCAGCGAAGACA	630	AGG	-	AGAAGGUUUCAGCGAAGACA	3724
GAAACGGAAGTCTGAGGCTG	631	GGG	-	GAAACGGAAGUCUGAGGCUG	3725
TCTACGGGAAGATATCCTGT	632	AGG	+	UCUACGGGAAGAUAUCCUGU	3726
GAAAAAAAAAAAAACAAGTC	633	TGG	+	GAAAAAAAAAAAAACAAGUC	3727
AGAAAAACTTCACACTGCTA	634	GGG	+	AGAAAAACUUCACACUGCUA	3728
TTCTTGCTGAGGAAAGAGGA	635	GGG	-	UUCUUGCUGAGGAAAGAGGA	3729
CAGGAATTGGCTCTGAAAGC	636	AGG	+	CAGGAAUUGGCUCUGAAAGC	3730
CAAAAGCAGAGCATCTACAT	637	CGG	-	CAAAAGCAGAGCAUCUACAU	3731
CCCGCTGCTCAAACCTCTGG	638	GGG	-	CCCGCUGCUCAAACCUCUGG	3732
CACACTTGCCGTGGCCAGCC	639	CGG	+	CACACUUGCCGUGGCCAGCC	3733
ACCTATTTTTATAGAGATGG	640	AGG	-	ACCUAUUUUUAUAGAGAUGG	3734
AGGAGGGAGGGGGCAGGAGC	641	AGG	+	AGGAGGGAGGGGGCAGGAGC	3735
GTCGATCCGTGGTTGCCCAG	642	GGG	-	GUCGAUCCGUGGUUGCCCAG	3736
CAAGTGGCTGGACGTGCAGA	643	AGG	+	CAAGUGGCUGGACGUGCAGA	3737
GGATTTCTCTTCTTTGTGAT	644	TGG	+	GGAUUUCUCUUCUUUGUGAU	3738
GCAATTAGGGTCTAGTTGGC	645	TGG	-	GCAAUUAGGGUCUAGUUGGC	3739
GGGGGGAGACAGGGAGAATG	646	GGG	-	GGGGGGAGACAGGGAGAAUG	3740
AGAGGGTGGGGCCTCAAAGC	647	AGG	+	AGAGGGUGGGGCCUCAAAGC	3741
CCATCCCACTGCCTGCTTTG	648	AGG	-	CCAUCCCACUGCCUGCUUUG	3742
AAGCAGGCAGTGGGATGGAG	649	AGG	+	AAGCAGGCAGUGGGAUGGAG	3743
CCCCAGAGGTTTGAGCAGCG	650	GGG	+	CCCCAGAGGUUUGAGCAGCG	3744
CAGGGCATGCAAGGGAGGTG	651	TGG	-	CAGGGCAUGCAAGGGAGGUG	3745
TTTTGTTCGTTATAGAATTT	652	TGG	-	UUUUGUUCGUUAUAGAAUUU	3746
AAATATGATTGGAGGATCAA	653	AGG	+	AAAUAUGAUUGGAGGAUCAA	3747
CTGCTGGTTTAAAGCACTGA	654	TGG	-	CUGCUGGUUUAAAGCACUGA	3748
GATTTTCTTGCTGAGGAAAG	655	AGG	-	GAUUUUCUUGCUGAGGAAAG	3749
CATTTGTCTGTAGACAGCCT	656	GGG	-	CAUUUGUCUGUAGACAGCCU	3750
ATCCGAGGGAGAGAAGATGC	657	TGG	-	AUCCGAGGGAGAGAAGAUGC	3751
CCAACATTGCGGTGTGAAGA	658	TGG	+	CCAACAUUGCGGUGUGAAGA	3752
GTAGTAAGATGTGGGGCCTT	659	TGG	-	GUAGUAAGAUGUGGGGCCUU	3753
TCAACTCCTGAATAGCACAT	660	TGG	+	UCAACUCCUGAAUAGCACAU	3754
AGAAAATAAATTAAAAAGCA	661	GGG	+	AGAAAAUAAAUUAAAAAGCA	3755
CCAAAGGCAAGGGGTGTTGG	662	TGG	-	CCAAAGGCAAGGGGUGUUGG	3756
TTGATGTTGACCTAACTGAC	663	AGG	+	UUGAUGUUGACCUAACUGAC	3757
CCTTCCGCCCGCCCCGCAAA	664	TGG	+	CCUUCCGCCCGCCCCGCAAA	3758
GCTGCCATTTGCGGGGCGGG	665	CGG	-	GCUGCCAUUUGCGGGGCGGG	3759
GGATAGAGCTGCCATTTGCG	666	GGG	-	GGAUAGAGCUGCCAUUUGCG	3760
AGCGAGGAACATCACACACT	667	GGG	+	AGCGAGGAACAUCACACACU	3761
AATATGATTGGAGGATCAAA	668	GGG	+	AAUAUGAUUGGAGGAUCAAA	3762

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ATTGAACCCAGGCGGGCGGA	669	AGG	-	AUUGAACCCAGGCGGGCGGA	3763
AAGTCTGAGGCTGGGGCAAC	670	TGG	-	AAGUCUGAGGCUGGGGCAAC	3764
GATTACGCGTGGCAGGGGTG	671	GGG	-	GAUUACGCGUGGCAGGGGUG	3765
TAATCTGCCCGCAGATCCTG	672	TGG	+	UAAUCUGCCCGCAGAUCCUG	3766
ATAGATAGTATGGAAAATTA	673	CGG	-	AUAGAUAGUAUGGAAAAUUA	3767
TGGAGAGGAGAGAAAGCCCC	674	TGG	+	UGGAGAGGAGAGAAAGCCCC	3768
AGAGGAGAGAAAGCCCCTGG	675	TGG	+	AGAGGAGAGAAAGCCCCUGG	3769
GGGCTATGCAGGGGCTGCAG	676	TGG	-	GGGCUAUGCAGGGGCUGCAG	3770
CCAGGGCAAATTGGGGTGTA	677	AGG	+	CCAGGGCAAAUUGGGGUGUA	3771
CGTGGGCCAGTGGGAAGGTT	678	TGG	+	CGUGGGCCAGUGGGAAGGUU	3772
TTGGTGATTAAATCATTGTG	679	TGG	+	UUGGUGAUUAAAUCAUUGUG	3773
TGTCTCTTGCTAGCTCAAAG	680	TGG	-	UGUCUCUUGCUAGCUCAAAG	3774
GGGCAAGCTAGTGATACTGG	681	AGG	+	GGGCAAGCUAGUGAUACUGG	3775
CTTCAATTAGGAAAAAATAA	682	GGG	+	CUUCAAUUAGGAAAAAAUAA	3776
TAGAAAATAAATTAAAAAGC	683	AGG	+	UAGAAAAUAAAUUAAAAAGC	3777
ACCTACTGTGTGCCCTACCC	684	TGG	+	ACCUACUGUGUGCCCUACCC	3778
GAGTGGCCCTTTTGGACCAA	685	GGG	+	GAGUGGCCCUUUUGGACCAA	3779
ATAATAAAGTGTCCTTCAAG	686	GGG	-	AUAAUAAAGUGUCCUUCAAG	3780
CTCCACCGTCAATAGCATTC	687	CGG	-	CUCCACCGUCAAUAGCAUUC	3781
ATGTTGCTGGTGGGGGTGCA	688	AGG	-	AUGUUGCUGGUGGGGGUGCA	3782
GTACTTCGATGGGCTATGCA	689	GGG	-	GUACUUCGAUGGGCUAUGCA	3783
CCCCAGCCATGCACAAAGAT	690	TGG	-	CCCCAGCCAUGCACAAAGAU	3784
AGTACCTGGGAGAGAGGGTG	691	GGG	+	AGUACCUGGGAGAGAGGGUG	3785
GTTTTGATAGGCACAGGATG	692	GGG	-	GUUUUGAUAGGCACAGGAUG	3786
TCTGTAACACACGCCTGCTG	693	GGG	+	UCUGUAACACACGCCUGCUG	3787
AATAGCAAAGTGGTTAAAGG	694	AGG	+	AAUAGCAAAGUGGUUAAAGG	3788
TATCATCAGAAAAGAAAGAA	695	AGG	+	UAUCAUCAGAAAAGAAAGAA	3789
GAATTTAAATTAATTAAAAT	696	TGG	-	GAAUUUAAAUUAAUUAAAAU	3790
CATATATTAGCAGAAACTGA	697	TGG	-	CAUAUAUUAGCAGAAACUGA	3791
GGTGGGGAGGTCACAGAACA	698	GGG	-	GGUGGGGAGGUCACAGAACA	3792
ACAAATGCTTTCTGCGGGAG	699	GGG	+	ACAAAUGCUUUCUGCGGGAG	3793
AGGGCCTCGTGGGCCATGTG	700	AGG	-	AGGGCCUCGUGGGCCAUGUG	3794
CCTGCGCAAAACGCTTTGGC	701	GGG	-	CCUGCGCAAAACGCUUUGGC	3795
CCGCTCCCCCACCCCACGAC	702	AGG	-	CCGCUCCCCCACCCCACGAC	3796
TAAGTACCATATACATAATG	703	TGG	-	UAAGUACCAUAUACAUAAUG	3797
GTGTGTTGGGTGGGAGTGGG	704	TGG	-	GUGUGUUGGGUGGGAGUGGG	3798
AAGAAAAAGGTGGACTGAAA	705	AGG	+	AAGAAAAAGGUGGACUGAAA	3799
CGTTTTTTAATGGATCCATG	706	TGG	+	CGUUUUUUAAUGGAUCCAUG	3800
AATTTGCCCTGGATGGTCCT	707	GGG	-	AAUUUGCCCUGGAUGGUCCU	3801
GGCTGGATTCTGACTACACT	708	GGG	-	GGCUGGAUUCUGACUACACU	3802
CTCTCCTGCGCAAAACGCTT	709	TGG	-	CUCUCCUGCGCAAAACGCUU	3803
ATCTCGGCTCACAACAACTT	710	CGG	-	AUCUCGGCUCACAACAACUU	3804
TTTTGATAGGCACAGGATGG	711	GGG	-	UUUUGAUAGGCACAGGAUGG	3805
AAAGTGGACAGGGCAGGGAG	712	AGG	-	AAAGUGGACAGGGCAGGGAG	3806
AAGAGGTGAAAGGAATTCGA	713	TGG	+	AAGAGGUGAAAGGAAUUCGA	3807
AGACCAAAGGCAAGGGGTGT	714	TGG	-	AGACCAAAGGCAAGGGGUGU	3808
AAGGTTGCATTGGACACTGC	715	TGG	-	AAGGUUGCAUUGGACACUGC	3809
ACCACACTGCTGTCTCTCCT	716	GGG	-	ACCACACUGCUGUCUCUCCU	3810
AATTAATATCGTTGATAAAT	717	AGG	+	AAUUAAUAUCGUUGAUAAAU	3811
ATGCTATTAATAATTCTGTT	718	GGG	+	AUGCUAUUAAUAAUUCUGUU	3812
AGGGCACCATCCAGCCTGTC	719	TGG	+	AGGGCACCAUCCAGCCUGUC	3813
TCATAGGCTAGTGTGTGTGT	720	TGG	-	UCAUAGGCUAGUGUGUGUGU	3814
GAAGATGGAAGGTCAGTGTT	721	GGG	+	GAAGAUGGAAGGUCAGUGUU	3815
CTGGGGGTGGAGCCCGAGGC	722	AGG	-	CUGGGGGUGGAGCCCGAGGC	3816
TTCTGTCCCTGTGAGAAGGC	723	AGG	+	UUCUGUCCCUGUGAGAAGGC	3817
GTATGTCACTGAAGAGAGTC	724	TGG	-	GUAUGUCACUGAAGAGAGUC	3818
AGTCGATCCGTGGTTGCCCA	725	GGG	-	AGUCGAUCCGUGGUUGCCCA	3819
CGGCGGAACGAGGTGGAGTT	726	TGG	+	CGGCGGAACGAGGUGGAGUU	3820

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TTGTTTAGAAATTATTTTAT	727	AGG	-	UUGUUUAGAAAUUAUUUUAU	3821
GAGGAGAAATTCTGAGCAGA	728	TGG	-	GAGGAGAAAUUCUGAGCAGA	3822
AAACATTGTGTATGACGGCG	729	GGG	+	AAACAUUGUGUAUGACGGCG	3823
TGGAGAAAACACAAGGAAGT	730	AGG	-	UGGAGAAAACACAAGGAAGU	3824
TGAAGATGGAAGGTCAGTGT	731	TGG	+	UGAAGAUGGAAGGUCAGUGU	3825
TTTAAAAATATTGGGTGTGG	732	TGG	+	UUUAAAAAUAUUGGGUGUGG	3826
TAGAAGGCTCCTCACAGAAC	733	TGG	-	UAGAAGGCUCCUCACAGAAC	3827
GGTGTAACCCAGGACCATCC	734	AGG	+	GGUGUAACCCAGGACCAUCC	3828
TTTCTTGCTGAGGAAAGAGG	735	AGG	-	UUUCUUGCUGAGGAAAGAGG	3829
TCTCTTCTTTGTGATTGGCA	736	TGG	+	UCUCUUCUUUGUGAUUGGCA	3830
AATCGTCTGATTGCTGGAGA	737	GGG	+	AAUCGUCUGAUUGCUGGAGA	3831
CATTGCGGTGTGAAGATGGA	738	AGG	+	CAUUGCGGUGUGAAGAUGGA	3832
TGTCGTGGGGTGGGGGAGCG	739	GGG	+	UGUCGUGGGGUGGGGGAGCG	3833
GCAAGCTAGTGATACTGGAG	740	GGG	+	GCAAGCUAGUGAUACUGGAG	3834
AGTTTTGATAGGCACAGGAT	741	GGG	-	AGUUUUGAUAGGCACAGGAU	3835
TCACCATGGGCATGGTCCAG	742	TGG	+	UCACCAUGGGCAUGGUCCAG	3836
GGGTACTTGAGAATTGAGAG	743	AGG	-	GGGUACUUGAGAAUUGAGAG	3837
TTTCACTATTTTTCCTTTAG	744	AGG	+	UUUCACUAUUUUUCCUUUAG	3838
GGAACAGGGACTGGTCCTTT	745	TGG	-	GGAACAGGGACUGGUCCUUU	3839
TGTGTTGGGTGGGAGTGGGT	746	GGG	-	UGUGUUGGGUGGGAGUGGGU	3840
ACAAGCGGCTAGATGTCGAG	747	AGG	+	ACAAGCGGCUAGAUGUCGAG	3841
GTGAGTAACCAGTGGAACAA	748	GGG	+	GUGAGUAACCAGUGGAACAA	3842
TTCATCCAGATGTTAGAAAT	749	TGG	+	UUCAUCCAGAUGUUAGAAAU	3843
CGTCTGATTGCTGGAGAGGG	750	AGG	+	CGUCUGAUUGCUGGAGAGGG	3844
GAGGGGGGAGACAGGGAGAA	751	TGG	-	GAGGGGGGAGACAGGGAGAA	3845
TCCTGCGCAAAACGCTTTGG	752	CGG	-	UCCUGCGCAAAACGCUUUGG	3846
AGTTTACCAATCTTTGTGCA	753	TGG	+	AGUUUACCAAUCUUUGUGCA	3847
GCATCCCTCTGGCCCAGGGT	754	AGG	-	GCAUCCCUCUGGCCCAGGGU	3848
GTGTTGGGTGGGAGTGGGTG	755	GGG	-	GUGUUGGGUGGGAGUGGGUG	3849
GAGGCCCCACCCTCTCTCCC	756	AGG	-	GAGGCCCCACCCUCUCUCCC	3850
TCTATCGTGCGCTCTTCCGC	757	CGG	-	UCUAUCGUGCGCUCUUCCGC	3851
TCATTAATTGTTGCAACTTA	758	TGG	-	UCAUUAAUUGUUGCAACUUA	3852
CCAATCCAAGAGACTAAACT	759	AGG	+	CCAAUCCAAGAGACUAAACU	3853
GAACAGGGACTGGTCCTTTT	760	GGG	-	GAACAGGGACUGGUCCUUUU	3854
GAGACAAGTCTCTCTTTAGC	761	AGG	+	GAGACAAGUCUCUCUUUAGC	3855
GGTGAGTAACCAGTGGAACA	762	AGG	+	GGUGAGUAACCAGUGGAACA	3856
TGACCCTTTCTCTCCTGAAA	763	TGG	-	UGACCCUUUCUCUCCUGAAA	3857
TGAGAAAGTATGGCATATTC	764	TGG	+	UGAGAAAGUAUGGCAUAUUC	3858
ATTTGTCTGTAGACAGCCTG	765	GGG	-	AUUUGUCUGUAGACAGCCUG	3859
AAGGGGGAGCCCAGACAGGC	766	TGG	-	AAGGGGGAGCCCAGACAGGC	3860
CTGAGGCTGGGGCAACTGGG	767	AGG	-	CUGAGGCUGGGGCAACUGGG	3861
GACGGAGGCAAGAGACAGTC	768	TGG	+	GACGGAGGCAAGAGACAGUC	3862
AAGGGCTGTTTTTGTTTCTA	769	TGG	+	AAGGGCUGUUUUUGUUUCUA	3863
GAACAACAGTTGTCTTTGTG	770	TGG	+	GAACAACAGUUGUCUUUGUG	3864
AATCCAACAGAAAACAGGAT	771	GGG	+	AAUCCAACAGAAAACAGGAU	3865
CTGACTCAATTATAAGACAT	772	AGG	-	CUGACUCAAUUAUAAGACAU	3866
CCATGGGAAGGAACGCTCTA	773	TGG	+	CCAUGGGAAGGAACGCUCUA	3867
CGCAGGAGAGTGGCGGCATC	774	AGG	+	CGCAGGAGAGUGGCGGCAUC	3868
GGCAAGCTAGTGATACTGGA	775	GGG	+	GGCAAGCUAGUGAUACUGGA	3869
TTTAGTTTGCCGTCTGTAGG	776	CGG	-	UUUAGUUUGCCGUCUGUAGG	3870
ATGGAGTTTTGGTGGTGTAG	777	GGG	+	AUGGAGUUUUGGUGGUGUAG	3871
TGTAGCAAAGTGGACAGGGC	778	AGG	-	UGUAGCAAAGUGGACAGGGC	3872
AAATAATGATTATCTTTTTT	779	TGG	+	AAAUAAUGAUUAUCUUUUUU	3873
GACCCTTTCTCTCCTGAAAT	780	GGG	-	GACCCUUUCUCUCCUGAAAU	3874
GTGAAAGAAACGGAAGTCTG	781	AGG	-	GUGAAAGAAACGGAAGUCUG	3875
GGGTGGGGGTGTGAAAGAAA	782	CGG	-	GGGUGGGGGUGUGAAAGAAA	3876
GCATCATAGGGGTGTGGAAA	783	TGG	+	GCAUCAUAGGGGUGUGGAAA	3877
ATCTGTGTAAAAGAGACTCC	784	AGG	-	AUCUGUGUAAAAGAGACUCC	3878

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGCTATGCAGGGGCTGCAGT	785	GGG	-	GGCUAUGCAGGGGCUGCAGU	3879
AAGTCTGGGAAATGGAGTTT	786	TGG	+	AAGUCUGGGAAAUGGAGUUU	3880
GGAATTCGATGGCCCATTTC	787	AGG	+	GGAAUUCGAUGGCCCAUUUC	3881
TTATCTTACTTGCTTAACGC	788	AGG	+	UUAUCUUACUUGCUUAACGC	3882
GCTGTGAGGCAGTTTCTGAA	789	GGG	-	GCUGUGAGGCAGUUUCUGAA	3883
CGGATGTCTCATGTAACATG	790	TGG	+	CGGAUGUCUCAUGUAACAUG	3884
GGGCACCATCCAGCCTGTCT	791	GGG	+	GGGCACCAUCCAGCCUGUCU	3885
TTATATGCATCATAGGGGTG	792	TGG	+	UUAUAUGCAUCAUAGGGGUG	3886
CTACCATCAAATATGGCACC	793	TGG	-	CUACCAUCAAAUAUGGCACC	3887
TTATTGTATTTCTTGTAGAG	794	AGG	+	UUAUUGUAUUUCUUGUAGAG	3888
TGCCCCCTAGCAGATAGTCA	795	GGG	-	UGCCCCCUAGCAGAUAGUCA	3889
TTTCTGCGGGAGGGGAGTCT	796	GGG	+	UUUCUGCGGGAGGGGAGUCU	3890
TGGCGGGTCCCTGTTGCCAG	797	GGG	-	UGGCGGGUCCCUGUUGCCAG	3891
TTTGTTCAAAATGTCTGGGA	798	AGG	+	UUUGUUCAAAAUGUCUGGGA	3892
TGGCTGGGGGCTGCTAGTCC	799	AGG	-	UGGCUGGGGGCUGCUAGUCC	3893
CCAGCTCGATTTCAACACTG	800	GGG	+	CCAGCUCGAUUUCAACACUG	3894
CAAACTCCACCTCGTTCCGC	801	CGG	-	CAAACUCCACCUCGUUCCGC	3895
TCTGTGTAAAAGAGACTCCA	802	GGG	-	UCUGUGUAAAAGAGACUCCA	3896
GTGTAACCCAGGACCATCCA	803	GGG	+	GUGUAACCCAGGACCAUCCA	3897
TAAATTAAAAAGCAGGGAGA	804	AGG	+	UAAAUUAAAAAGCAGGGAGA	3898
GCTCTTAAAAGAAGGGACCA	805	AGG	-	GCUCUUAAAAGAAGGGACCA	3899
TGTGCCCTACCCTGGGCCAG	806	AGG	+	UGUGCCCUACCCUGGGCCAG	3900
ATTATAAGACATAGGAAGCC	807	AGG	-	AUUAUAAGACAUAGGAAGCC	3901
AATGAATTTGAGACGCCTAG	808	GGG	-	AAUGAAUUUGAGACGCCUAG	3902
AAACACTTGGAGACAGAGCG	809	AGG	+	AAACACUUGGAGACAGAGCG	3903
GTCTGCCCAATGTGCTATTC	810	AGG	-	GUCUGCCCAAUGUGCUAUUC	3904
TCATCCCTGACTATCTGCTA	811	GGG	+	UCAUCCCUGACUAUCUGCUA	3905
AGATAAGAAATAGAGAAAAG	812	AGG	+	AGAUAAGAAAUAGAGAAAAG	3906
AAGAAGTTGGCTGGGTGCAG	813	TGG	+	AAGAAGUUGGCUGGGUGCAG	3907
GCAAACATTGTGTATGACGG	814	CGG	+	GCAAACAUUGUGUAUGACGG	3908
GGCCCACGTTGCAGGGCACC	815	TGG	-	GGCCCACGUUGCAGGGCACC	3909
ACCTAGAGTCCAAGGAAGAG	816	AGG	-	ACCUAGAGUCCAAGGAAGAG	3910
GTCTAGAACTACATGCCACA	817	GGG	-	GUCUAGAACUACAUGCCACA	3911
TTTTCTCCTGGAGTCGGGCT	818	TGG	-	UUUUCUCCUGGAGUCGGGCU	3912
ATTCCTTCCCTCCGGGTATA	819	GGG	+	AUUCCUUCCCUCCGGGUAUA	3913
CAAACATTGTGTATGACGGC	820	GGG	+	CAAACAUUGUGUAUGACGGC	3914
CTTTCATAACCAAATCCACT	821	TGG	-	CUUUCAUAACCAAAUCCACU	3915
TGTCACAGCAGGAAATTTCA	822	AGG	-	UGUCACAGCAGGAAAUUUCA	3916
CCTCAGCTCACCATTTGCTC	823	TGG	-	CCUCAGCUCACCAUUUGCUC	3917
GGTGGGAGGATCATGAGAGT	824	TGG	-	GGUGGGAGGAUCAUGAGAGU	3918
GGACTCAGCCCCTGGCAACA	825	GGG	+	GGACUCAGCCCCUGGCAACA	3919
TGGGGCCTCAAAGCAGGCAG	826	TGG	+	UGGGGCCUCAAAGCAGGCAG	3920
CGTGGGGTGGGGGAGCGGGG	827	AGG	+	CGUGGGGUGGGGGAGCGGGG	3921
TTCTATGGCCAGCTTCAGGA	828	GGG	+	UUCUAUGGCCAGCUUCAGGA	3922
AGTAAGATATTTTAATACGA	829	TGG	-	AGUAAGAUAUUUUAAUACGA	3923
ACTGAAAAGGCCAGAGCAAA	830	TGG	+	ACUGAAAAGGCCAGAGCAAA	3924
CTGGTGGCCATAGGATGGTA	831	GGG	+	CUGGUGGCCAUAGGAUGGUA	3925
GAGAAAAGAGGCCAGGTGCA	832	GGG	+	GAGAAAAGAGGCCAGGUGCA	3926
TCTTTTAGTTTGCCGTCTGT	833	AGG	-	UCUUUUAGUUUGCCGUCUGU	3927
TGGTACTTATACTTTGATTG	834	TGG	+	UGGUACUUAUACUUUGAUUG	3928
CTTTCTGCGGGAGGGGAGTC	835	TGG	+	CUUUCUGCGGGAGGGGAGUC	3929
TAATGAATTTGAGACGCCTA	836	GGG	-	UAAUGAAUUUGAGACGCCUA	3930
TCACTGCCTCAGCAGCGTGG	837	AGG	+	UCACUGCCUCAGCAGCGUGG	3931
AAAAAAAGTGGTTGCAGAAC	838	AGG	+	AAAAAAAGUGGUUGCAGAAC	3932
TCTGGGAAGGCCGGGTGTGG	839	TGG	+	UCUGGGAAGGCCGGGUGUGG	3933
CCAGCCAAAAATAGCCAGTG	840	TGG	+	CCAGCCAAAAAUAGCCAGUG	3934
CCACACTGGCTATTTTTGGC	841	TGG	-	CCACACUGGCUAUUUUUGGC	3935
CAATTAGGGTCTAGTTGGCT	842	GGG	-	CAAUUAGGGUCUAGUUGGCU	3936

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TGCCAGCTCGATTTCAACAC	843	TGG	+	UGCCAGCUCGAUUUCAACAC	3937
GAGCTAGCAAGAGACATCTA	844	CGG	+	GAGCUAGCAAGAGACAUCUA	3938
ACTTTTTTTGTGTCCACTGT	845	AGG	-	ACUUUUUUUGUGUCCACUGU	3939
TTAAATAGCAAAGTGGTTAA	846	AGG	+	UUAAAUAGCAAAGUGGUUAA	3940
TGAGGAAAGAGGAGGGGGCA	847	AGG	-	UGAGGAAAGAGGAGGGGGCA	3941
GGGGCCTCAAAGCAGGCAGT	848	GGG	+	GGGGCCUCAAAGCAGGCAGU	3942
ATAGCAAAGTGGTTAAAGGA	849	GGG	+	AUAGCAAAGUGGUUAAAGGA	3943
ATTGTATTTCTTGTAGAGAG	850	GGG	+	AUUGUAUUUCUUGUAGAGAG	3944
AGGGCTTCCCTAAGCCCAAA	851	AGG	+	AGGGCUUCCCUAAGCCCAAA	3945
CAGGCTGTCGGAGAAGAGTG	852	GGG	+	CAGGCUGUCGGAGAAGAGUG	3946
TTCAAAATGTCTGGGAAGGC	853	CGG	+	UUCAAAAUGUCUGGGAAGGC	3947
TGATGTTGACCTAACTGACA	854	GGG	+	UGAUGUUGACCUAACUGACA	3948
AATCTAAGATTGGTGACTGG	855	CGG	+	AAUCUAAGAUUGGUGACUGG	3949
CCATTTGCGGGGCGGGCGGA	856	AGG	-	CCAUUUGCGGGGCGGGCGGA	3950
AGTACTTCGATGGGCTATGC	857	AGG	-	AGUACUUCGAUGGGCUAUGC	3951
GGTTGTTAGACTCAGCACTG	858	TGG	-	GGUUGUUAGACUCAGCACUG	3952
CCTCTCGTGAAAGAGAAAGA	859	AGG	-	CCUCUCGUGAAAGAGAAAGA	3953
AGGTAGAGTACCTGGGAGAG	860	AGG	+	AGGUAGAGUACCUGGGAGAG	3954
AGCTAGCAAGAGACATCTAC	861	GGG	+	AGCUAGCAAGAGACAUCUAC	3955
GACAGCAGTGTGGTGGCTGC	862	AGG	+	GACAGCAGUGUGGUGGCUGC	3956
TGAGACAGGCCGATCACTTG	863	AGG	-	UGAGACAGGCCGAUCACUUG	3957
TGACTACTTTAAGATGCTTT	864	GGG	+	UGACUACUUUAAGAUGCUUU	3958
TTGCCCCCTAGCAGATAGTC	865	AGG	-	UUGCCCCCUAGCAGAUAGUC	3959
AACGTCCTCTTTATAGGGAA	866	TGG	+	AACGUCCUCUUUAUAGGGAA	3960
CTCAGTTTCCTTGTGTGTCC	867	AGG	+	CUCAGUUUCCUUGUGUGUCC	3961
TTCCTTTCAAGTGCTGTTAA	868	AGG	-	UUCCUUUCAAGUGCUGUUAA	3962
CAAAACTCCAAGACCCTAGC	869	AGG	+	CAAAACUCCAAGACCCUAGC	3963
CCAGGCTGTCGGAGAAGAGT	870	GGG	+	CCAGGCUGUCGGAGAAGAGU	3964
GGGTGGCCCTGAATCTTCCT	871	AGG	+	GGGUGGCCCUGAAUCUUCCU	3965
AGCCTCACTCTCTGCTCACA	872	AGG	-	AGCCUCACUCUCUGCUCACA	3966
TATTTCCATTTTTTACACTC	873	AGG	+	UAUUUCCAUUUUUUACACUC	3967
TTTTTGTTATTACTTCTCTT	874	TGG	+	UUUUUGUUAUUACUUCUCUU	3968
GATGGCTTTCCAGTTCTGTG	875	AGG	+	GAUGGCUUUCCAGUUCUGUG	3969
TTCTTCGCATCGCGGGGGTG	876	GGG	-	UUCUUCGCAUCGCGGGGGUG	3970
ACGATGTTCTCTGCTCTTCG	877	TGG	-	ACGAUGUUCUCUGCUCUUCG	3971
CTTCATCTGTTTCCATGGGA	878	AGG	+	CUUCAUCUGUUUCCAUGGGA	3972
TCAACACTGGGGTGTCCCCT	879	AGG	+	UCAACACUGGGGUGUCCCCU	3973
GGGTCTATGCTATGTTACCC	880	AGG	-	GGGUCUAUGCUAUGUUACCC	3974
AGAGTACCTGGGAGAGAGGG	881	TGG	+	AGAGUACCUGGGAGAGAGGG	3975
AGGAGCCTTCTAAAGTTCAA	882	AGG	+	AGGAGCCUUCUAAAGUUCAA	3976
GCTTCAATTAGGAAAAAATA	883	AGG	+	GCUUCAAUUAGGAAAAAAUA	3977
ATAAATCTAAGATTGGTGAC	884	TGG	+	AUAAAUCUAAGAUUGGUGAC	3978
ACTCAAGGGGGAGCCCAGAC	885	AGG	-	ACUCAAGGGGGAGCCCAGAC	3979
GTGGAACTTGAGGATAGACG	886	AGG	-	GUGGAACUUGAGGAUAGACG	3980
GTAGCAAAGTGGACAGGGCA	887	GGG	-	GUAGCAAAGUGGACAGGGCA	3981
AGGAGAAATTCTGAGCAGAT	888	GGG	-	AGGAGAAAUUCUGAGCAGAU	3982
AATAATAAAGTGTCCTTCAA	889	GGG	-	AAUAAUAAAGUGUCCUUCAA	3983
TTGGCGGGTCCCTGTTGCCA	890	GGG	-	UUGGCGGGUCCCUGUUGCCA	3984
AACAGTTGTCTTTGTGTGGA	891	TGG	+	AACAGUUGUCUUUGUGUGGA	3985
CTACAGACAAATGCTTTCTG	892	CGG	+	CUACAGACAAAUGCUUUCUG	3986
TGTAGGCTTGGCGCTATACT	893	AGG	-	UGUAGGCUUGGCGCUAUACU	3987
TTGTGGCACAGTGAGGGAAC	894	TGG	+	UUGUGGCACAGUGAGGGAAC	3988
CTTAAAGTAGTCAGAGTTAC	895	TGG	-	CUUAAAGUAGUCAGAGUUAC	3989
CTTGTAGTCCCAGCTACCAT	896	GGG	+	CUUGUAGUCCCAGCUACCAU	3990
GAGCGAGGAACATCACACAC	897	TGG	+	GAGCGAGGAACAUCACACAC	3991
CTCCAGGGAGCTAGTGAAAC	898	AGG	-	CUCCAGGGAGCUAGUGAAAC	3992
CTCCTGTTTCTCAAGCAGAT	899	TGG	+	CUCCUGUUUCUCAAGCAGAU	3993
GGCGCGCTTTAGATACACAC	900	AGG	-	GGCGCGCUUUAGAUACACAC	3994

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CATAGGCTAGTGTGTGTGTT	901	GGG	-	CAUAGGCUAGUGUGUGUGUU	3995
TAGAACTACATGCCACAGGG	902	TGG	-	UAGAACUACAUGCCACAGGG	3996
CATCTCAGGGCATGCAAGGG	903	AGG	-	CAUCUCAGGGCAUGCAAGGG	3997
CGGAATGCTATTGACGGTGG	904	AGG	+	CGGAAUGCUAUUGACGGUGG	3998
TTCGCATCGCGGGGGTGGGG	905	AGG	-	UUCGCAUCGCGGGGGUGGGG	3999
ATCAGCAATTAGGGTCTAGT	906	TGG	-	AUCAGCAAUUAGGGUCUAGU	4000
ATTTGCGGGGCGGGCGGAAG	907	GGG	-	AUUUGCGGGGCGGGCGGAAG	4001
GGTGGAAGCTAAAGGAAGAT	908	GGG	+	GGUGGAAGCUAAAGGAAGAU	4002
ACTTCTTCGCATCGCGGGGG	909	TGG	-	ACUUCUUCGCAUCGCGGGGG	4003
CTCCTCATTACAGTGAAATA	910	AGG	+	CUCCUCAUUACAGUGAAAUA	4004
GGAGAAAAGCATCTCCCTTC	911	TGG	+	GGAGAAAAGCAUCUCCCUUC	4005
TGGTGATTAAATCATTGTGT	912	GGG	+	UGGUGAUUAAAUCAUUGUGU	4006
TTTTATAATTGTGATGATAA	913	AGG	+	UUUUAUAAUUGUGAUGAUAA	4007
ATTTAAATTCCAATACCACA	914	TGG	+	AUUUAAAUUCCAAUACCACA	4008
TGATTGTGTCCTCTGTCCCC	915	TGG	-	UGAUUGUGUCCUCUGUCCCC	4009
ATAATGAATTTGAGACGCCT	916	AGG	-	AUAAUGAAUUUGAGACGCCU	4010
TGAGAAACATAAATCCCGAG	917	AGG	+	UGAGAAACAUAAAUCCCGAG	4011
GTGCCCTACCCTGGGCCAGA	918	GGG	+	GUGCCCUACCCUGGGCCAGA	4012
TGAAATGAACTGTCCAGAAC	919	TGG	-	UGAAAUGAACUGUCCAGAAC	4013
CCATAGAGCGTTCCTTCCCA	920	TGG	-	CCAUAGAGCGUUCCUUCCCA	4014
ATGTCTCATGTAACATGTGG	921	TGG	+	AUGUCUCAUGUAACAUGUGG	4015
TATTATTATATGCATCATAG	922	GGG	+	UAUUAUUAUAUGCAUCAUAG	4016
AGAGAAAAGAGGCCAGGTGC	923	AGG	+	AGAGAAAAGAGGCCAGGUGC	4017
AGCAATGTTTACTGGGTGGG	924	TGG	+	AGCAAUGUUUACUGGGUGGG	4018
CAGTGTTGGGAAGAGTCCAT	925	TGG	+	CAGUGUUGGGAAGAGUCCAU	4019
TGGGACGACAGGTGTAACCC	926	AGG	+	UGGGACGACAGGUGUAACCC	4020
TTCAAAGATTGAGAGGGAAT	927	TGG	-	UUCAAAGAUUGAGAGGGAAU	4021
GGGCCAGAGGGATGCTCCAG	928	GGG	+	GGGCCAGAGGGAUGCUCCAG	4022
CATTTGCGGGGCGGGCGGAA	929	GGG	-	CAUUUGCGGGGCGGGCGGAA	4023
CACTGCTAGGGTTAAATGAA	930	AGG	+	CACUGCUAGGGUUAAAUGAA	4024
AATACACATAGAAAAATGAC	931	AGG	+	AAUACACAUAGAAAAAUGAC	4025
AGACCCATCCTGTTTTCTGT	932	TGG	-	AGACCCAUCCUGUUUUCUGU	4026
CTATGCTATGTTACCCAGGC	933	TGG	-	CUAUGCUAUGUUACCCAGGC	4027
TTGCTGGTGGGGGTGCAAGG	934	TGG	-	UUGCUGGUGGGGGUGCAAGG	4028
CACTGGTTACTCACCCGCTA	935	TGG	-	CACUGGUUACUCACCCGCUA	4029
CACCACACTGCTGTCTCTCC	936	TGG	-	CACCACACUGCUGUCUCUCC	4030
GGGACTAGTCATGACTACAT	937	TGG	+	GGGACUAGUCAUGACUACAU	4031
TTATTAGATTCCAGTGGTAC	938	TGG	-	UUAUUAGAUUCCAGUGGUAC	4032
CTACTTAGAAATATACCTTG	939	GGG	-	CUACUUAGAAAUAUACCUUG	4033
TCGAACAATAGACTTTCAAT	940	GGG	-	UCGAACAAUAGACUUUCAAU	4034
GACAGGGAGAATGGGGAGCG	941	AGG	-	GACAGGGAGAAUGGGGAGCG	4035
CCAACATCACCTTCTCAGTG	942	AGG	+	CCAACAUCACCUUCUCAGUG	4036
CCTCAAAGCAGGCAGTGGGA	943	TGG	+	CCUCAAAGCAGGCAGUGGGA	4037
ATCGGGGTATGTTTACACAA	944	TGG	-	AUCGGGGUAUGUUUACACAA	4038
TTTCGTACAATACTGGAGGC	945	TGG	+	UUUCGUACAAUACUGGAGGC	4039
TTCGCCCCTAGACACTGCCG	946	TGG	+	UUCGCCCCUAGACACUGCCG	4040
TGCCCTGAGATGGGGACAAG	947	GGG	+	UGCCCUGAGAUGGGGACAAG	4041
GGGAGCTAGTGAAACAGGAA	948	AGG	-	GGGAGCUAGUGAAACAGGAA	4042
AATCTTAAATCATCTAATTG	949	TGG	+	AAUCUUAAAUCAUCUAAUUG	4043
AAATCCAACAGAAAACAGGA	950	TGG	+	AAAUCCAACAGAAAACAGGA	4044
ATGTAAACCAGTTGTCTGTT	951	AGG	+	AUGUAAACCAGUUGUCUGUU	4045
ACCAAATCCACTTGGCTCAA	952	AGG	-	ACCAAAUCCACUUGGCUCAA	4046
ATCGAACAATAGACTTTCAA	953	TGG	-	AUCGAACAAUAGACUUUCAA	4047
AGGCTAGTGTGTGTGTTGGG	954	TGG	-	AGGCUAGUGUGUGUGUUGGG	4048
GGGACTCAGCCCCTGGCAAC	955	AGG	+	GGGACUCAGCCCCUGGCAAC	4049
TTTGGCGGGTCCCTGTTGCC	956	AGG	-	UUUGGCGGGUCCCUGUUGCC	4050
TTAGCTGAGCGTGGCAGCGC	957	AGG	+	UUAGCUGAGCGUGGCAGCGC	4051
AGTCTAGAACTACATGCCAC	958	AGG	-	AGUCUAGAACUACAUGCCAC	4052

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TGTCGAGAGGAGCACATTGG	959	CGG	+	UGUCGAGAGGAGCACAUUGG	4053
TGTGGTAGTAGTAAGATGTG	960	GGG	-	UGUGGUAGUAGUAAGAUGUG	4054
ACTGCTAGGGTTAAATGAAA	961	GGG	+	ACUGCUAGGGUUAAAUGAAA	4055
AAAAAATCCTAACAGACAAC	962	TGG	-	AAAAAAUCCUAACAGACAAC	4056
TGTGGCACAGTGAGGGAACT	963	GGG	+	UGUGGCACAGUGAGGGAACU	4057
TAATTAAAATTGGCCGGGCG	964	GGG	-	UAAUUAAAAUUGGCCGGGCG	4058
CCAAACCGGAATGCTATTGA	965	CGG	+	CCAAACCGGAAUGCUAUUGA	4059
TCTATTTCTTATCTCCTGAG	966	TGG	-	UCUAUUUCUUAUCUCCUGAG	4060
TCTGTCCCTGTGAGAAGGCA	967	GGG	+	UCUGUCCCUGUGAGAAGGCA	4061
CTCGGCTTCATCTGTTTCCA	968	TGG	+	CUCGGCUUCAUCUGUUUCCA	4062
GAGAGTTGGAGGCTGCAGTG	969	AGG	-	GAGAGUUGGAGGCUGCAGUG	4063
TAAAAGAGAAACCTTGGGCC	970	GGG	+	UAAAAGAGAAACCUUGGGCC	4064
TATTCCTTCCCTCCGGGTAT	971	AGG	+	UAUUCCUUCCCUCCGGGUAU	4065
CCAAGGTATATTTCTAAGTA	972	GGG	+	CCAAGGUAUAUUUCUAAGUA	4066
CAAAAATAGCCAGTGTGGCT	973	TGG	+	CAAAAAUAGCCAGUGUGGCU	4067
ACAGGGAGAATGGGGAGCGA	974	GGG	-	ACAGGGAGAAUGGGGAGCGA	4068
AATATTGGGTGTGGTGGCAC	975	GGG	+	AAUAUUGGGUGUGGUGGCAC	4069
TTCCTGTTTCACTAGCTCCC	976	TGG	+	UUCCUGUUUCACUAGCUCCC	4070
AAGTACCATATACATAATGT	977	GGG	-	AAGUACCAUAUACAUAAUGU	4071
AAATTATGAATGATTAAAAA	978	TGG	-	AAAUUAUGAAUGAUUAAAAA	4072
TTCGTACAATACTGGAGGCT	979	GGG	+	UUCGUACAAUACUGGAGGCU	4073
ATAAAAGAGAAACCTTGGGC	980	CGG	+	AUAAAAGAGAAACCUUGGGC	4074
TGTTTTTTATTAGATTCCAG	981	TGG	-	UGUUUUUUAUUAGAUUCCAG	4075
CCTACTTAGAAATATACCTT	982	GGG	-	CCUACUUAGAAAUAUACCUU	4076
GCAGAGAACATCGTCTCTCC	983	AGG	+	GCAGAGAACAUCGUCUCUCC	4077
TGTCCCCTGGAGCATCCCTC	984	TGG	-	UGUCCCCUGGAGCAUCCCUC	4078
CTCTAAAGATTTGCCAGTTC	985	TGG	+	CUCUAAAGAUUUGCCAGUUC	4079
TTCTCAAGCAGATTGGAAGC	986	TGG	+	UUCUCAAGCAGAUUGGAAGC	4080
GGTAGAGTACCTGGGAGAGA	987	GGG	+	GGUAGAGUACCUGGGAGAGA	4081
CCAGGGATGAAGCAGGAAGC	988	AGG	-	CCAGGGAUGAAGCAGGAAGC	4082
CCAAACCCACGGCAGTGTCT	989	AGG	-	CCAAACCCACGGCAGUGUCU	4083
CAGGAGAGACAGCAGTGTGG	990	TGG	+	CAGGAGAGACAGCAGUGUGG	4084
GCCTCACTCTCTGCTCACAA	991	GGG	-	GCCUCACUCUCUGCUCACAA	4085
GAAAAATGACAGGAAATGAC	992	GGG	+	GAAAAAUGACAGGAAAUGAC	4086
CAAGCCACACTGGCTATTTT	993	TGG	-	CAAGCCACACUGGCUAUUUU	4087
TCGGATGACTGCACTCACCT	994	CGG	+	UCGGAUGACUGCACUCACCU	4088
AGTAGGTTGCCAAGCCACAC	995	TGG	-	AGUAGGUUGCCAAGCCACAC	4089
ACTCTCTTCAGTGACATACA	996	TGG	+	ACUCUCUUCAGUGACAUACA	4090
AAAAGGGCCACTCTGCTGTG	997	AGG	-	AAAAGGGCCACUCUGCUGUG	4091
ATGTTGGAGCAAAGATTCGA	998	AGG	-	AUGUUGGAGCAAAGAUUCGA	4092
CAACATCACCTTCTCAGTGA	999	GGG	+	CAACAUCACCUUCUCAGUGA	4093
TAATAATAAAGTGTCCTTCA	1000	AGG	-	UAAUAAUAAAGUGUCCUUCA	4094
AAAAAAGTGGTTGCAGAACA	1001	GGG	+	AAAAAAGUGGUUGCAGAACA	4095
AATGGAGTTTTGGTGGTGTA	1002	GGG	+	AAUGGAGUUUUGGUGGUGUA	4096
TTAAAGTAGTCAGAGTTACT	1003	GGG	-	UUAAAGUAGUCAGAGUUACU	4097
GGTCTAATTTTAAAATGCTT	1004	TGG	-	GGUCUAAUUUUAAAAUGCUU	4098
TAAATGAGAAAAGCATAACA	1005	AGG	+	UAAAUGAGAAAAGCAUAACA	4099
AATTAGGGTCTAGTTGGCTG	1006	GGG	-	AAUUAGGGUCUAGUUGGCUG	4100
GGGAGCGAGGGCTTAATGTT	1007	TGG	-	GGGAGCGAGGGCUUAAUGUU	4101
TGTCTTTCGCTTAGCATATG	1008	TGG	+	UGUCUUUCGCUUAGCAUAUG	4102
TTGGAGCAAAGATTCGAAGG	1009	AGG	-	UUGGAGCAAAGAUUCGAAGG	4103
TTAACACAATTAGCTGAGCG	1010	TGG	+	UUAACACAAUUAGCUGAGCG	4104
TTGTACGAAATAAATTTCTG	1011	TGG	-	UUGUACGAAAUAAAUUUCUG	4105
GAAAGCAGGCCTCTCTTCCT	1012	TGG	+	GAAAGCAGGCCUCUCUUCCU	4106
CATGAGATGCATCCACCCTG	1013	TGG	+	CAUGAGAUGCAUCCACCCUG	4107
TCAGCACTGTGGAAGAAACA	1014	AGG	-	UCAGCACUGUGGAAGAAACA	4108
CTTCTTCGCATCGCGGGGGT	1015	GGG	-	CUUCUUCGCAUCGCGGGGGU	4109
AACCAGTGGAACAAGGGCCC	1016	AGG	+	AACCAGUGGAACAAGGGCCC	4110

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CTTCCCTCCGGGTATAGGGC	1017	AGG	+	CUUCCCUCCGGGUAUAGGGC	4111
ATCCCTGACTATCTGCTAGG	1018	GGG	+	AUCCCUGACUAUCUGCUAGG	4112
TCGGCTTCATCTGTTTCCAT	1019	GGG	+	UCGGCUUCAUCUGUUUCCAU	4113
AGGCAAAGAAATTCTATGGA	1020	CGG	+	AGGCAAAGAAAUUCUAUGGA	4114
CCTGGTGGCCATAGGATGGT	1021	AGG	+	CCUGGUGGCCAUAGGAUGGU	4115
CAGCGCGTGGTCCCTGCCTC	1022	GGG	+	CAGCGCGUGGUCCCUGCCUC	4116
TGGGGGTGGAGCCCGAGGCA	1023	GGG	-	UGGGGGUGGAGCCCGAGGCA	4117
GAGAAACCTTGGGCCGGGCA	1024	TGG	+	GAGAAACCUUGGGCCGGGCA	4118
CTGACTACTTTAAGATGCTT	1025	TGG	+	CUGACUACUUUAAGAUGCUU	4119
GATGGATGGCGAAGCCACTC	1026	AGG	+	GAUGGAUGGCGAAGCCACUC	4120
GCTTTGGTGGTAAAAAATAC	1027	AGG	+	GCUUUGGUGGUAAAAAAUAC	4121
CCCAAGGTATATTTCTAAGT	1028	AGG	+	CCCAAGGUAUAUUUCUAAGU	4122
GGCTAGTGTGTGTGTTGGGT	1029	GGG	-	GGCUAGUGUGUGUGUUGGGU	4123
CCTCAGCCTCCCATGGTAGC	1030	TGG	-	CCUCAGCCUCCCAUGGUAGC	4124
GCAGCGCGTGGTCCCTGCCT	1031	CGG	+	GCAGCGCGUGGUCCCUGCCU	4125
TATTAGATTCCAGTGGTACT	1032	GGG	-	UAUUAGAUUCCAGUGGUACU	4126
GAAAACCTAGTTTAGTCTCT	1033	TGG	-	GAAAACCUAGUUUAGUCUCU	4127
CTGGAGTCGGGCTTGGTAGG	1034	TGG	-	CUGGAGUCGGGCUUGGUAGG	4128
ATTAATTAAAATTGGCCGGG	1035	CGG	-	AUUAAUUAAAAUUGGCCGGG	4129
AGATTCATTCATTCATTCCT	1036	TGG	+	AGAUUCAUUCAUUCAUUCCU	4130
TTCACTTAGGCGTTGGATGA	1037	AGG	+	UUCACUUAGGCGUUGGAUGA	4131
TTTGAGGCAAAGAAATTCTA	1038	TGG	+	UUUGAGGCAAAGAAAUUCUA	4132
GAGACAGTCTGGCACATTTG	1039	TGG	+	GAGACAGUCUGGCACAUUUG	4133
CTCAGCCTCCCATGGTAGCT	1040	GGG	-	CUCAGCCUCCCAUGGUAGCU	4134
CTCCCTTGCATGCCCTGAGA	1041	TGG	+	CUCCCUUGCAUGCCCUGAGA	4135
TTAATTAAAATTGGCCGGGC	1042	GGG	-	UUAAUUAAAAUUGGCCGGGC	4136
TAGTCATGACTAGTCCCATG	1043	TGG	-	UAGUCAUGACUAGUCCCAUG	4137
TAGTCACATTTCTCAGTATT	1044	TGG	+	UAGUCACAUUUCUCAGUAUU	4138
TGAGGAGACACTGCCACTGA	1045	AGG	-	UGAGGAGACACUGCCACUGA	4139
CTGAGCAAACCTAGAGTCCA	1046	AGG	-	CUGAGCAAACCUAGAGUCCA	4140
AGCTTCAGGAGGGAGGGGGC	1047	AGG	+	AGCUUCAGGAGGGAGGGGGC	4141
AACGTTTCTATCATCGCAGA	1048	AGG	-	AACGUUUCUAUCAUCGCAGA	4142
TGTATGACGGCGGGGCGCGG	1049	TGG	+	UGUAUGACGGCGGGGCGCGG	4143
TGGGCCAGAGGGATGCTCCA	1050	GGG	+	UGGGCCAGAGGGAUGCUCCA	4144
ATTAGGGTCTAGTTGGCTGG	1051	GGG	-	AUUAGGGUCUAGUUGGCUGG	4145
AGAAAAATGACAGGAAATGA	1052	CGG	+	AGAAAAAUGACAGGAAAUGA	4146
GTGTGATATTCCTTCCCTCC	1053	GGG	+	GUGUGAUAUUCCUUCCCUCC	4147
TTGTGTATGACGGCGGGGCG	1054	CGG	+	UUGUGUAUGACGGCGGGGCG	4148
CCAATCTTTGTGCATGGCTG	1055	GGG	+	CCAAUCUUUGUGCAUGGCUG	4149
TGCAAAGGAAATCAGCAATT	1056	AGG	-	UGCAAAGGAAAUCAGCAAUU	4150
AGAAAGCCCCTGGTGGCCAT	1057	AGG	+	AGAAAGCCCCUGGUGGCCAU	4151
GCTATTAAAAAGGATGAGGT	1058	CGG	+	GCUAUUAAAAAGGAUGAGGU	4152
TATGGCCAGCTTCAGGAGGG	1059	AGG	+	UAUGGCCAGCUUCAGGAGGG	4153
TTATCAGTCATTTTTTGTAT	1060	GGG	+	UUAUCAGUCAUUUUUUGUAU	4154
CCATAGGATGGTAGGGATTT	1061	AGG	+	CCAUAGGAUGGUAGGGAUUU	4155
CCACTGAAGGACAGAAGCAG	1062	TGG	-	CCACUGAAGGACAGAAGCAG	4156
AGGGTTTCCTCACAGCAGAG	1063	TGG	+	AGGGUUUCCUCACAGCAGAG	4157
GCCAGCTCGATTTCAACACT	1064	GGG	+	GCCAGCUCGAUUUCAACACU	4158
AAGTTCCACAAAGCCTCACA	1065	TGG	+	AAGUUCCACAAAGCCUCACA	4159
ATTATCAGTCATTTTTTGTA	1066	TGG	+	AUUAUCAGUCAUUUUUUGUA	4160
CTATCTCCATGACCCCTTGA	1067	AGG	+	CUAUCUCCAUGACCCCUUGA	4161
GACTACTTTAAGATGCTTTG	1068	GGG	+	GACUACUUUAAGAUGCUUUG	4162
GACTGGTCCTTTTGGGCTTA	1069	GGG	-	GACUGGUCCUUUUGGGCUUA	4163
ATGTGGTAGTAGTAAGATGT	1070	GGG	-	AUGUGGUAGUAGUAAGAUGU	4164
TACATGGCCTTTGAGCCAAG	1071	TGG	+	UACAUGGCCUUUGAGCCAAG	4165
CATCAACCGGCGGAACGAGG	1072	TGG	+	CAUCAACCGGCGGAACGAGG	4166
GGACTGGTCCTTTTGGGCTT	1073	AGG	-	GGACUGGUCCUUUUGGGCUU	4167
TGGTGTATCTGCTTCAGCAT	1074	TGG	+	UGGUGUAUCUGCUUCAGCAU	4168

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AAATATTGGGTGTGGTGGCA	1075	CGG	+	AAAUAUUGGGUGUGGUGGCA	4169
GAAACATAAATCCCGAGAGG	1076	TGG	+	GAAACAUAAAUCCCGAGAGG	4170
CTACCTCCTGCCCACCTCTC	1077	GGG	-	CUACCUCCUGCCCACCUCUC	4171
AGATGTCGAGAGGAGCACAT	1078	TGG	+	AGAUGUCGAGAGGAGCACAU	4172
CTCTGTAACACACGCCTGCT	1079	GGG	+	CUCUGUAACACACGCCUGCU	4173
CTGGGCCAGAGGGATGCTCC	1080	AGG	+	CUGGGCCAGAGGGAUGCUCC	4174
AAAATAGGTTTAAAAATATT	1081	GGG	+	AAAAUAGGUUUAAAAAUAUU	4175
AAACCTTGGGCCGGGCATGG	1082	TGG	+	AAACCUUGGGCCGGGCAUGG	4176
CAGAGCAAATGGTGAGCTGA	1083	GGG	+	CAGAGCAAAUGGUGAGCUGA	4177
ACCTTCATTGCTACTTGAGA	1084	AGG	+	ACCUUCAUUGCUACUUGAGA	4178
CTAGTTTAGTCTCTTGGATT	1085	GGG	-	CUAGUUUAGUCUCUUGGAUU	4179
AGTCTGGCACATTTGTGGCT	1086	TGG	+	AGUCUGGCACAUUUGUGGCU	4180
ACATATGAGCATTTCCAGTT	1087	TGG	+	ACAUAUGAGCAUUUCCAGUU	4181
CCCTACTTAGAAATATACCT	1088	TGG	-	CCCUACUUAGAAAUAUACCU	4182
ATATGGTACCTCAGAACCCC	1089	AGG	+	AUAUGGUACCUCAGAACCCC	4183
GAAACCCTTGTTGTCACAGC	1090	AGG	-	GAAACCCUUGUUGUCACAGC	4184
TGGTGGAAGCTAAAGGAAGA	1091	TGG	+	UGGUGGAAGCUAAAGGAAGA	4185
CATATGAGCATTTCCAGTTT	1092	GGG	+	CAUAUGAGCAUUUCCAGUUU	4186
TCGCCCCTAGACACTGCCGT	1093	GGG	+	UCGCCCCUAGACACUGCCGU	4187
CATCCCTGACTATCTGCTAG	1094	GGG	+	CAUCCCUGACUAUCUGCUAG	4188
GCAAAGGAAATCAGCAATTA	1095	GGG	-	GCAAAGGAAAUCAGCAAUUA	4189
CCAGAGCAAATGGTGAGCTG	1096	AGG	+	CCAGAGCAAAUGGUGAGCUG	4190
TTTGTTTTGTTCAAAATGTC	1097	TGG	+	UUUGUUUUGUUCAAAAUGUC	4191
GTGTCCTGCCCTATACCCGG	1098	AGG	-	GUGUCCUGCCCUAUACCCGG	4192
GTAGACAGCCTGGGGTTCTG	1099	AGG	-	GUAGACAGCCUGGGGUUCUG	4193
TAATTTTATGCTTTTCTTCT	1100	CGG	+	UAAUUUUAUGCUUUUCUUCU	4194
CCCCAGTGTTGAAATCGAGC	1101	TGG	-	CCCCAGUGUUGAAAUCGAGC	4195
TGGGGTTTGCAGAATGACCT	1102	TGG	-	UGGGGUUUGCAGAAUGACCU	4196
CCTAAATCCCTACCATCCTA	1103	TGG	-	CCUAAAUCCCUACCAUCCUA	4197
CAAACCCACGGCAGTGTCTA	1104	GGG	-	CAAACCCACGGCAGUGUCUA	4198
CAGTGGAAGTGTTAAGTGGC	1105	TGG	-	CAGUGGAAGUGUUAAGUGGC	4199
GTGATGATAAAGGCTTTGTG	1106	TGG	+	GUGAUGAUAAAGGCUUUGUG	4200
TATGGGTTTCTATAATCTGT	1107	GGG	+	UAUGGGUUUCUAUAAUCUGU	4201
ACTGCTGTGGAGAAAACACA	1108	AGG	-	ACUGCUGUGGAGAAAACACA	4202
CCCCATCTCAGGGCATGCAA	1109	GGG	-	CCCCAUCUCAGGGCAUGCAA	4203
AATGTGGTAGTAGTAAGATG	1110	TGG	-	AAUGUGGUAGUAGUAAGAUG	4204
TATTATTTCAAAGATTGAGA	1111	GGG	-	UAUUAUUUCAAAGAUUGAGA	4205
ATATTATTTCAAAGATTGAG	1112	AGG	-	AUAUUAUUUCAAAGAUUGAG	4206
AAACCCACGGCAGTGTCTAG	1113	GGG	-	AAACCCACGGCAGUGUCUAG	4207
AGGGATGCTCCAGGGGACAG	1114	AGG	+	AGGGAUGCUCCAGGGGACAG	4208
CAGAGGTGGGACTCAGCCCC	1115	TGG	+	CAGAGGUGGGACUCAGCCCC	4209
AGCAACATATGACACAGTTC	1116	AGG	+	AGCAACAUAUGACACAGUUC	4210
AGTGAGGCTTCCATTTCAGA	1117	AGG	+	AGUGAGGCUUCCAUUUCAGA	4211
TTCAGGGAAGAAGAGGTGAA	1118	AGG	+	UUCAGGGAAGAAGAGGUGAA	4212
TTTCAGGAGAGAAAGGGTCA	1119	AGG	+	UUUCAGGAGAGAAAGGGUCA	4213
TCCCCATCTCAGGGCATGCA	1120	AGG	-	UCCCCAUCUCAGGGCAUGCA	4214
AGCCCCTGGTGGCCATAGGA	1121	TGG	+	AGCCCCUGGUGGCCAUAGGA	4215
GAATCGTCTGATTGCTGGAG	1122	AGG	+	GAAUCGUCUGAUUGCUGGAG	4216
AAGACATAGGAAGCCAGGTG	1123	CGG	-	AAGACAUAGGAAGCCAGGUG	4217
GCCTCTCTTCCTTGGACTCT	1124	AGG	+	GCCUCUCUUCCUUGGACUCU	4218
GGAGCGAGGGCTTAATGTTT	1125	GGG	-	GGAGCGAGGGCUUAAUGUUU	4219
ACATTGCATAAATCTAAGAT	1126	TGG	+	ACAUUGCAUAAAUCUAAGAU	4220
GGGAGCCCAGACAGGCTGGA	1127	TGG	-	GGGAGCCCAGACAGGCUGGA	4221
AAACATAAATCCCGAGAGGT	1128	GGG	+	AAACAUAAAUCCCGAGAGGU	4222
TCTACCTCCTGCCCACCTCT	1129	CGG	-	UCUACCUCCUGCCCACCUCU	4223
GGCCATCAACCGGCGGAACG	1130	AGG	+	GGCCAUCAACCGGCGGAACG	4224
AGGCGTTGAGAGGAGTGCGC	1131	CGG	+	AGGCGUUGAGAGGAGUGCGC	4225
TGTCCTGCCCTATACCCGGA	1132	GGG	-	UGUCCUGCCCUAUACCCGGA	4226

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ATGCTTTGGTAAACATTTCT	1133	AGG	-	AUGCUUUGGUAAACAUUUCU	4227
GTGGGCCATGTGAGGCTTTG	1134	TGG	-	GUGGGCCAUGUGAGGCUUUG	4228
GGCGGGATAATCACTTGAGC	1135	TGG	-	GGCGGGAUAAUCACUUGAGC	4229
CTGGTGACAATATAATTCCA	1136	AGG	+	CUGGUGACAAUAUAAUUCCA	4230
GGCCAGCTTCAGGAGGGAGG	1137	GGG	+	GGCCAGCUUCAGGAGGGAGG	4231
TAGGACTGGGCCTTCTGAAA	1138	TGG	-	UAGGACUGGGCCUUCUGAAA	4232
TCCCTTGCATGCCCTGAGAT	1139	GGG	+	UCCCUUGCAUGCCCUGAGAU	4233
GTCCCCTTGTCCCCATCTCA	1140	GGG	-	GUCCCCUUGUCCCCAUCUCA	4234
TGTGTGATATTCCTTCCCTC	1141	CGG	+	UGUGUGAUAUUCCUUCCCUC	4235
CTGCCCTATACCCGGAGGGA	1142	AGG	-	CUGCCCUAUACCCGGAGGGA	4236
CTTAAAATCCAACAGAAAAC	1143	AGG	+	CUUAAAAUCCAACAGAAAAC	4237
ACATAGGAAGCCAGGTGCGG	1144	TGG	-	ACAUAGGAAGCCAGGUGCGG	4238
GTGGCAGTGGAAGTGTTAAG	1145	TGG	-	GUGGCAGUGGAAGUGUUAAG	4239
CCCTTGCATGCCCTGAGATG	1146	GGG	+	CCCUUGCAUGCCCUGAGAUG	4240
GGTCCCCTTGTCCCCATCTC	1147	AGG	-	GGUCCCCUUGUCCCCAUCUC	4241
ATAAATCCCGAGAGGTGGGC	1148	AGG	+	AUAAAUCCCGAGAGGUGGGC	4242
TATGAGCATTTCCAGTTTGG	1149	GGG	+	UAUGAGCAUUUCCAGUUUGG	4243
TATTTGTAATACCCCCAAAC	1150	TGG	-	UAUUUGUAAUACCCCCAAAC	4244
GCCCAGGAGAGACAGCAGTG	1151	TGG	+	GCCCAGGAGAGACAGCAGUG	4245
TCACTTTTTAAATAGCAAAG	1152	TGG	+	UCACUUUUUAAAUAGCAAAG	4246
TCTGTGCTCTGCAAATGACC	1153	TGG	+	UCUGUGCUCUGCAAAUGACC	4247
AGGTCATTCTGCAAACCCCA	1154	AGG	+	AGGUCAUUCUGCAAACCCCA	4248
TAGGTTTGTCTATAATGTAC	1155	AGG	-	UAGGUUUGUCUAUAAUGUAC	4249
ACCTTCTCAAGTAGCAATGA	1156	AGG	-	ACCUUCUCAAGUAGCAAUGA	4250
GTATGGGTTTCTATAATCTG	1157	TGG	+	GUAUGGGUUUCUAUAAUCUG	4251
TACCAATCTTTGTGCATGGC	1158	TGG	+	UACCAAUCUUUGUGCAUGGC	4252
GACGTGCAGAAGGCGTTGAG	1159	AGG	+	GACGUGCAGAAGGCGUUGAG	4253
CTCACTTATCTCAAGGTTCA	1160	TGG	+	CUCACUUAUCUCAAGGUUCA	4254
TTCAGGAGAGAAAGGGTCAA	1161	GGG	+	UUCAGGAGAGAAAGGGUCAA	4255
TAGGACTTCTTCGCATCGCG	1162	GGG	-	UAGGACUUCUUCGCAUCGCG	4256
CTGCTCTTCGTGGACATTTC	1163	TGG	-	CUGCUCUUCGUGGACAUUUC	4257
AGAAATAGAGAAAAGAGGCC	1164	AGG	+	AGAAAUAGAGAAAAGAGGCC	4258
ACTGGTTACTCACCCGCTAT	1165	GGG	-	ACUGGUUACUCACCCGCUAU	4259
AGGACTTCTTCGCATCGCGG	1166	GGG	-	AGGACUUCUUCGCAUCGCGG	4260
CAACACGAATCTGAACAAAC	1167	AGG	-	CAACACGAAUCUGAACAAAC	4261
AGAAGTGATATGCTTCAATT	1168	AGG	+	AGAAGUGAUAUGCUUCAAUU	4262
GATAATCACTTGAGCTGGGG	1169	AGG	-	GAUAAUCACUUGAGCUGGGG	4263
ATATGAGCATTTCCAGTTTG	1170	GGG	+	AUAUGAGCAUUUCCAGUUUG	4264
CGGGATAATCACTTGAGCTG	1171	GGG	-	CGGGAUAAUCACUUGAGCUG	4265
CGGGAGAATCGTCTGATTGC	1172	TGG	+	CGGGAGAAUCGUCUGAUUGC	4266
TCACCAAAGGAGAAGCAACA	1173	TGG	-	UCACCAAAGGAGAAGCAACA	4267
GGGGAGGAGGATGATCTGTT	1174	TGG	-	GGGGAGGAGGAUGAUCUGUU	4268
CGTTGGATGAAGGTTCATTT	1175	CGG	+	CGUUGGAUGAAGGUUCAUUU	4269
AGGTCAATTCTGCCCATAGC	1176	GGG	+	AGGUCAAUUCUGCCCAUAGC	4270
ATGGCCAGCTTCAGGAGGGA	1177	GGG	+	AUGGCCAGCUUCAGGAGGGA	4271
AAATTTATTTCGTACAATAC	1178	TGG	+	AAAUUUAUUUCGUACAAUAC	4272
GAAGAGCGCACGATAGACGC	1179	CGG	+	GAAGAGCGCACGAUAGACGC	4273
CCACTGCTTCTGTCCTTCAG	1180	TGG	+	CCACUGCUUCUGUCCUUCAG	4274
CAAAGAAATTCTATGGACGG	1181	AGG	+	CAAAGAAAUUCUAUGGACGG	4275
AAGGATGAGGTCGGGTGCAG	1182	TGG	+	AAGGAUGAGGUCGGGUGCAG	4276
GATCAAAGGGTATGATCTAA	1183	TGG	+	GAUCAAAGGGUAUGAUCUAA	4277
TTTTGTGTCCACTGTAGGCT	1184	TGG	-	UUUUGUGUCCACUGUAGGCU	4278
AGGGAAGGAATATCACACAG	1185	GGG	-	AGGGAAGGAAUAUCACACAG	4279
CTAGGACTTCTTCGCATCGC	1186	GGG	-	CUAGGACUUCUUCGCAUCGC	4280
ACCAATCTTTGTGCATGGCT	1187	GGG	+	ACCAAUCUUUGUGCAUGGCU	4281
TTGGCGACAACATATTGTAA	1188	TGG	-	UUGGCGACAACAUAUUGUAA	4282
TGGCCAGCTTCAGGAGGGAG	1189	GGG	+	UGGCCAGCUUCAGGAGGGAG	4283
GGGAGGAGGATGATCTGTTT	1190	GGG	-	GGGAGGAGGAUGAUCUGUUU	4284

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TAGGGAAGCCCTCACTGAGA	1191	AGG	-	UAGGGAAGCCCUCACUGAGA	4285
AAGGTCAATTCTGCCCATAG	1192	CGG	+	AAGGUCAAUUCUGCCCAUAG	4286
ATCTAATTGTGGCACAGTGA	1193	GGG	+	AUCUAAUUGUGGCACAGUGA	4287
TACTGGAGGGGGGCAGCGCG	1194	TGG	+	UACUGGAGGGGGGCAGCGCG	4288
CATCTAATTGTGGCACAGTG	1195	AGG	+	CAUCUAAUUGUGGCACAGUG	4289
GCTCTGAAGCACTTGAAATG	1196	TGG	+	GCUCUGAAGCACUUGAAAUG	4290
CTATGTCTTATAATTGAGTC	1197	AGG	+	CUAUGUCUUAUAAUUGAGUC	4291
TTTATTTCGTACAATACTGG	1198	AGG	+	UUUAUUUCGUACAAUACUGG	4292
AATCCCGAGAGGTGGGCAGG	1199	AGG	+	AAUCCCGAGAGGUGGGCAGG	4293
GTATAGCGCCAAGCCTACAG	1200	TGG	+	GUAUAGCGCCAAGCCUACAG	4294
AACCGGAATGCTATTGACGG	1201	TGG	+	AACCGGAAUGCUAUUGACGG	4295
TTGTTTTGTTCAAAATGTCT	1202	GGG	+	UUGUUUUGUUCAAAAUGUCU	4296
TCTAGGACTTCTTCGCATCG	1203	**CGG**	-	**UCUAGGACUUCUUCGCAUCG**	4297
CCTAGTTTAGTCTCTTGGAT	1204	TGG	-	CCUAGUUUAGUCUCUUGGAU	4298
TTTAAATTCCAATACCACAT	1205	GGG	+	UUUAAAUUCCAAUACCACAU	4299
AGCATCCTTTGAACTTTAGA	1206	AGG	-	AGCAUCCUUUGAACUUUAGA	4300
GCGGGATAATCACTTGAGCT	1207	GGG	-	GCGGGAUAAUCACUUGAGCU	4301
ACTCTGTAACACACGCCTGC	1208	TGG	+	ACUCUGUAACACACGCCUGC	4302
AAGCGTTTTGCGCAGGAGAG	1209	TGG	+	AAGCGUUUUGCGCAGGAGAG	4303
AGAGCTTTGGCCGAGGACGA	1210		+	**AGAGCUUUGGCCGAGGACGA**	4304
AGAGACAGAAAGTCGATCCG	1211	TGG	-	AGAGACAGAAAGUCGAUCCG	4305
CTATTAAAAAGGATGAGGTC	1212	GGG	+	CUAUUAAAAAGGAUGAGGUC	4306
TGAAGGACAGAAGCAGTGGA	1213	GGG	-	UGAAGGACAGAAGCAGUGGA	4307
CTGAAGGACAGAAGCAGTGG	1214	AGG	-	CUGAAGGACAGAAGCAGUGG	4308
TACCTTATTTCACTGTAATG	1215	AGG	-	UACCUUAUUUCACUGUAAUG	4309
AATTAGACCTGCCCAGTTAG	1216	TGG	+	AAUUAGACCUGCCCAGUUAG	4310
CTGATATCCACTAACTGGGC	1217	AGG	-	CUGAUAUCCACUAACUGGGC	4311
ATTGCTGATATCCACTAACT	1218	GGG	-	AUUGCUGAUAUCCACUAACU	4312
CAGGCTGTCAGGAGGCATGA	1219	AGG	+	CAGGCUGUCAGGAGGCAUGA	4313
AAATATCTTACTTCATTACT	1220	TGG	+	AAAUAUCUUACUUCAUUACU	4314
TTTTCTGGTATGATACTATT	1221	AGG	+	UUUUCUGGUAUGAUACUAUU	4315
CTGGTATGATACTATTAGGT	1222	TGG	+	CUGGUAUGAUACUAUUAGGU	4316
ATCTCTTGATGAACAGCTAC	1223	AGG	+	AUCUCUUGAUGAACAGCUAC	4317
GATGAACAGCTACAGGCCTG	1224	AGG	+	GAUGAACAGCUACAGGCCUG	4318
ACAGCTACAGGCCTGAGGTT	1225	AGG	+	ACAGCUACAGGCCUGAGGUU	4319
CTACATGAACTCCTAACCTC	1226	AGG	-	CUACAUGAACUCCUAACCUC	4320
GTCCTTCAGCCTCAACTTAT	1227	AGG	+	GUCCUUCAGCCUCAACUUAU	4321
CACCTATAAGTTGAGGCTGA	1228	AGG	-	CACCUAUAAGUUGAGGCUGA	4322
ACACAGTCACCTATAAGTTG	1229	AGG	-	ACACAGUCACCUAUAAGUUG	4323
TCGTTAACTCCGCAGAGCAC	1230	AGG	+	UCGUUAACUCCGCAGAGCAC	4324
CGTTAACTCCGCAGAGCACA	1231	GGG	+	CGUUAACUCCGCAGAGCACA	4325
GGATGGTGCCCTGTGCTCTG	1232	CGG	-	GGAUGGUGCCCUGUGCUCUG	4326
CTATCCCCAGCACCTAAAGC	1233	TGG	+	CUAUCCCCAGCACCUAAAGC	4327
TATCCCCAGCACCTAAAGCT	1234	GGG	+	UAUCCCCAGCACCUAAAGCU	4328
GGTAGGGATTTAGGAAAAAG	1235	AGG	+	GGUAGGGAUUUAGGAAAAAG	4329
AGGGATTTAGGAAAAAGAGG	1236	AGG	+	AGGGAUUUAGGAAAAAGAGG	4330
TTTAGGAAAAAGAGGAGGCT	1237	TGG	+	UUUAGGAAAAAGAGGAGGCU	4331
AGGAAAAAGAGGAGGCTTGG	1238	AGG	+	AGGAAAAAGAGGAGGCUUGG	4332
GATCATCTAGCACATGTTTT	1239	TGG	+	GAUCAUCUAGCACAUGUUUU	4333
CTAGCACATGTTTTTGGTTT	1240	TGG	+	CUAGCACAUGUUUUUGGUUU	4334
TATCTGGTGGGTAGCTACTT	1241	AGG	+	UAUCUGGUGGGUAGCUACUU	4335
GGTGGGTAGCTACTTAGGAG	1242	TGG	+	GGUGGGUAGCUACUUAGGAG	4336
CCTGCTTCCTGCTTCATCCC	1243	TGG	+	CCUGCUUCCUGCUUCAUCCC	4337
GAAGGTGCCAGGGATGAAGC	1244	AGG	-	GAAGGUGCCAGGGAUGAAGC	4338
TTGCCCCTTCCGCCATGGGA	1245	GGG	-	UUGCCCCUUCCGCCAUGGGA	4339
CTTGCCCCTTCCGCCATGGG	1246	AGG	-	CUUGCCCCUUCCGCCAUGGG	4340
TAGCTTGCCCCTTCCGCCAT	1247	GGG	-	UAGCUUGCCCCUUCCGCCAU	4341
CTAGCTTGCCCCTTCCGCCA	1248	TGG	-	CUAGCUUGCCCCUUCCGCCA	4342

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ACTAACATTCACATCATAGC	1249	AGG	+	ACUAACAUUCACAUCAUAGC	4343
CTAACATTCACATCATAGCA	1250	GGG	+	CUAACAUUCACAUCAUAGCA	4344
TCACATCATAGCAGGGACTC	1251	TGG	+	UCACAUCAUAGCAGGGACUC	4345
CATCATAGCAGGGACTCTGG	1252	TGG	+	CAUCAUAGCAGGGACUCUGG	4346
GGGAGCGCCATCTTTGTAGC	1253	AGG	-	GGGAGCGCCAUCUUUGUAGC	4347
TCAAGTAGCAATGAAGGTTA	1254	GGG	-	UCAAGUAGCAAUGAAGGUUA	4348
CTCAAGTAGCAATGAAGGTT	1255	AGG	-	CUCAAGUAGCAAUGAAGGUU	4349
GGAAGACCTGTGCATTTTTG	1256	TGG	+	GGAAGACCUGUGCAUUUUUG	4350
AACTGTCCACAAAAATGCAC	1257	AGG	-	AACUGUCCACAAAAAUGCAC	4351
ATTTATTTTTAGCAGAGACA	1258	GGG	+	AUUUAUUUUUAGCAGAGACA	4352
GGTTGGTGCAAGAGTAACTG	1259	CGG	+	GGUUGGUGCAAGAGUAACUG	4353
ATATCGGCTCACTGCAACCC	1260	GGG	+	AUAUCGGCUCACUGCAACCC	4354
AGCCAGCATCTTCTCTCCCT	1261	CGG	+	AGCCAGCAUCUUCUCUCCCU	4355
CACCTGTGATCCGAGCTACT	1262	TGG	-	CACCUGUGAUCCGAGCUACU	4356
TACTCGGGGGAGGCTGAAGC	1263	GGG	+	UACUCGGGGGAGGCUGAAGC	4357
GAACGAGGTGGAGTTTGGCC	1264	AGG	+	GAACGAGGUGGAGUUUGGCC	4358
GCATCACTGCACCTCAGTCT	1265	GGG	-	GCAUCACUGCACCUCAGUCU	4359
TGGGTTTTGCCATATTGCTC	1266	AGG	-	UGGGUUUUGCCAUAUUGCUC	4360
CTACTTAGGAGTGGAATTGC	1267	TGG	+	CUACUUAGGAGUGGAAUUGC	4361
TTCAGCCTCCCCCGAGTAGC	1268	TGG	-	UUCAGCCUCCCCCGAGUAGC	4362
CACTTCCACTGCCACCACCC	1269	TGG	+	CACUUCCACUGCCACCACCC	4363
TGCATCACTGCACCTCAGTC	1270	TGG	-	UGCAUCACUGCACCUCAGUC	4364
TCCACAGCCTTGTCAACACT	1271	AGG	+	UCCACAGCCUUGUCAACACU	4365
CTCTGGGGGAGCATACAGAC	1272	GGG	-	CUCUGGGGGAGCAUACAGAC	4366
TCCCCCAGAGGTTTGAGCAG	1273	CGG	+	UCCCCCAGAGGUUUGAGCAG	4367
AGGGAGAGAAGATGCTGGCT	1274	TGG	-	AGGGAGAGAAGAUGCUGGCU	4368
TCTTAGCCTAGGAAGATTCA	1275	GGG	-	UCUUAGCCUAGGAAGAUUCA	4369
GTATCTCAGGGTTCTTGCCT	1276	TGG	-	GUAUCUCAGGGUUCUUGCCU	4370
CTCAAGTGGTTTGCCCGCCT	1277	CGG	+	CUCAAGUGGUUUGCCCGCCU	4371
CAAAACCAGCCTGAGCAATA	1278	TGG	+	CAAAACCAGCCUGAGCAAUA	4372
TGAGGCGGGTCTATCACCTG	1279	AGG	+	UGAGGCGGGUCUAUCACCUG	4373
TGCCCAGGGGCTGGGGGAGG	1280	GGG	-	UGCCCAGGGGCUGGGGGAGG	4374
CAGCCATGAGCCACTGCGTC	1281	CGG	+	CAGCCAUGAGCCACUGCGUC	4375
TAAGATGTGGGGCCTTTGGG	1282	AGG	-	UAAGAUGUGGGGCCUUUGGG	4376
CAAAAAGTATCTGGGCATGA	1283	TGG	+	CAAAAAGUAUCUGGGCAUGA	4377
TTAAATTAATTAAAATTGGC	1284	CGG	-	UUAAAUUAAUUAAAAUUGGC	4378
TGGAAGTGAGCAGAGAGAGA	1285	AGG	-	UGGAAGUGAGCAGAGAGAGA	4379
CCGTCTGTATGCTCCCCCAG	1286	AGG	+	CCGUCUGUAUGCUCCCCCAG	4380
CAGCATTTGGGCACGAAGGC	1287	AGG	-	CAGCAUUUGGGCACGAAGGC	4381
CATGCCCTGAGATGGGGACA	1288	AGG	+	CAUGCCCUGAGAUGGGGACA	4382
ACTTCCACTGCCACCACCCT	1289	GGG	+	ACUUCCACUGCCACCACCCU	4383
TTTACAGCTGAGGCCCCAGC	1290	AGG	-	UUUACAGCUGAGGCCCCAGC	4384
ATGCCCTGAGATGGGGACAA	1291	GGG	+	AUGCCCUGAGAUGGGGACAA	4385
TTGAATGAATGAATGCTTTG	1292	AGG	+	UUGAAUGAAUGAAUGCUUUG	4386
AATGCAGCATTTGGGCACGA	1293	AGG	-	AAUGCAGCAUUUGGGCACGA	4387
TAAAATTACAAAAATGATCC	1294	GGG	-	UAAAAUUACAAAAAUGAUCC	4388
GGAAGGAGCTCTCAGCAGAT	1295	AGG	-	GGAAGGAGCUCUCAGCAGAU	4389
AAGTATCTGGGCATGATGGC	1296	AGG	+	AAGUAUCUGGGCAUGAUGGC	4390
TGCCCCGCTGCTCAAACCTC	1297	TGG	-	UGCCCCGCUGCUCAAACCUC	4391
TGCAGCTATTAAAAAGGATG	1298	AGG	+	UGCAGCUAUUAAAAAGGAUG	4392
ACGCCACTGTACTCCCAGCC	1299	TGG	-	ACGCCACUGUACUCCCAGCC	4393
TATTGTATTTCTTGTAGAGA	1300	GGG	+	UAUUGUAUUUCUUGUAGAGA	4394
TGAGTCTCGCTCAGTCACCC	1301	AGG	-	UGAGUCUCGCUCAGUCACCC	4395
TTGGCGGAAGAAGACACAAG	1302	TGG	+	UUGGCGGAAGAAGACACAAG	4396
CCGAGCTACTTGGAAGACTG	1303	AGG	-	CCGAGCUACUUGGAAGACUG	4397
AAGGAGCTCTCAGCAGATAG	1304	GGG	-	AAGGAGCUCUCAGCAGAUAG	4398
TGAAGCACTTGAAATGTGGC	1305	TGG	+	UGAAGCACUUGAAAUGUGGC	4399
GAAGGAGCTCTCAGCAGATA	1306	GGG	-	GAAGGAGCUCUCAGCAGAUA	4400

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGAGGGAAGGAATATCACAC	1307	AGG	-	GGAGGGAAGGAAUAUCACAC	4401
GAGGGAAGGAATATCACACA	1308	GGG	-	GAGGGAAGGAAUAUCACACA	4402
TGGCCGGACGCAGTGGCTCA	1309	TGG	-	UGGCCGGACGCAGUGGCUCA	4403
CGGGTCTATCACCTGAGGTC	1310	AGG	+	CGGGUCUAUCACCUGAGGUC	4404
TGGCTGTAATTCTAACACTT	1311	TGG	-	UGGCUGUAAUUCUAACACUU	4405
GGCTGTAATTCTAACACTTT	1312	GGG	-	GGCUGUAAUUCUAACACUUU	4406
GGCTTGAGCCCTGGAGTTCA	1313	AGG	+	GGCUUGAGCCCUGGAGUUCA	4407
CCTCTGGGGGAGCATACAGA	1314	CGG	-	CCUCUGGGGGAGCAUACAGA	4408
GGGGGAGCATACAGACGGGC	1315	AGG	-	GGGGGAGCAUACAGACGGGC	4409
AGGGTCTCGCCATGCTGCCC	1316	AGG	+	AGGGUCUCGCCAUGCUGCCC	4410
ATGAGCCACTGCGTCCGGCC	1317	AGG	+	AUGAGCCACUGCGUCCGGCC	4411
GAGGAGAATCGATTGAACCC	1318	AGG	-	GAGGAGAAUCGAUUGAACCC	4412
CAAGGCAGGAGTATCACCTG	1319	AGG	+	CAAGGCAGGAGUAUCACCUG	4413
ACAAAAGGGGCCGGGCGCGG	1320	TGG	-	ACAAAAGGGGCCGGGCGCGG	4414
AAAAAGGATGAGTTCATGTA	1321	GGG	+	AAAAAGGAUGAGUUCAUGUA	4415
CTGTCGTGGGGTGGGGGAGC	1322	GGG	+	CUGUCGUGGGGUGGGGGAGC	4416
CGCCACTGTACTCCCAGCCT	1323	GGG	-	CGCCACUGUACUCCCAGCCU	4417
TGCCCAGGCTGGGAGTACAG	1324	TGG	+	UGCCCAGGCUGGGAGUACAG	4418
CAAAAATACAAAAAGTATCT	1325	GGG	+	CAAAAAUACAAAAAGUAUCU	4419
ACAAAAATACAAAAAGTATC	1326	TGG	+	ACAAAAAUACAAAAAGUAUC	4420
CGGGCAAACCACTTGAGGTC	1327	AGG	-	CGGGCAAACCACUUGAGGUC	4421
TTGTATCTTTAGTAGAGCCA	1328	GGG	+	UUGUAUCUUUAGUAGAGCCA	4422
AATAAATTAGCCGGATGTGG	1329	TGG	-	AAUAAAUUAGCCGGAUGUGG	4423
GAGACAGGGTTTCAGCATGC	1330	TGG	+	GAGACAGGGUUUCAGCAUGC	4424
CCCCCAGAGGTTTGAGCAGC	1331	GGG	+	CCCCCAGAGGUUUGAGCAGC	4425
AAAAAAGGATGAGTTCATGT	1332	AGG	+	AAAAAAGGAUGAGUUCAUGU	4426
AGCACCACTGCACTCCAGTG	1333	TGG	+	AGCACCACUGCACUCCAGUG	4427
CAGGTGTCCTGCCCTATACC	1334	CGG	-	CAGGUGUCCUGCCCUAUACC	4428
GCTTGTAGTCCCAGCTACCA	1335	TGG	+	GCUUGUAGUCCCAGCUACCA	4429
GATGAGTTCATGTAGGGACA	1336	TGG	+	GAUGAGUUCAUGUAGGGACA	4430
CCATGGGAGGCTGAGGTGAG	1337	AGG	+	CCAUGGGAGGCUGAGGUGAG	4431
TATTTATTTTTAGCAGAGAC	1338	AGG	+	UAUUUAUUUUUAGCAGAGAC	4432
TTTGTATCTTTAGTAGAGCC	1339	AGG	+	UUUGUAUCUUUAGUAGAGCC	4433
AGACGGGGTTTCACCAGGTT	1340	GGG	-	AGACGGGGUUUCACCAGGUU	4434
GGGCTTGCAGAATGAGTGCA	1341	AGG	-	GGGCUUGCAGAAUGAGUGCA	4435
GGCCTGCTTCAGGGAAGAAG	1342	AGG	+	GGCCUGCUUCAGGGAAGAAG	4436
AGGGTTTCAGCATGCTGGCC	1343	AGG	+	AGGGUUUCAGCAUGCUGGCC	4437
TGAGACCAGCCTGCCCAACC	1344	TGG	+	UGAGACCAGCCUGCCCAACC	4438
CAGGCATGAGCTACCCCGCC	1345	CGG	+	CAGGCAUGAGCUACCCCGCC	4439
AAAAAAAAAAAAAACAAGTCT	1346	GGG	+	AAAAAAAAAAAAAACAAGUCU	4440
ATAAAATACCATAAACTAGG	1347	TGG	+	AUAAAAUACCAUAAACUAGG	4441
GCCGGTAATCCCAGTTACTC	1348	AGG	+	GCCGGUAAUCCCAGUUACUC	4442
TGTTAATTTTTTTGTAGAGA	1349	CGG	-	UGUUAAUUUUUUUGUAGAGA	4443
CTCAAACTTCTGAGCTCAAG	1350	GGG	+	CUCAAACUUCUGAGCUCAAG	4444
ATACTATGCAGCTATTAAAA	1351	AGG	+	AUACUAUGCAGCUAUUAAAA	4445
AGAAAAGAGGCCAGGTGCAG	1352	GGG	+	AGAAAAGAGGCCAGGUGCAG	4446
GTTAATTTTTTTGTAGAGAC	1353	GGG	-	GUUAAUUUUUUUGUAGAGAC	4447
CTTCAGGAGGCCAAGGCCAG	1354	AGG	+	CUUCAGGAGGCCAAGGCCAG	4448
CAAAAATGATCCGGGCGTGG	1355	TGG	-	CAAAAAUGAUCCGGGCGUGG	4449
GCACAGGATGGGGGCGTGGT	1356	GGG	-	GCACAGGAUGGGGGCGUGGU	4450
GGTCTGGAACTCTCGACCTC	1357	AGG	-	GGUCUGGAACUCUCGACCUC	4451
TGCCAAATAGTTTTCCAAAG	1358	AGG	+	UGCCAAAUAGUUUUCCAAAG	4452
CCTGTCACATGAGGGTCTTC	1359	AGG	+	CCUGUCACAUGAGGGUCUUC	4453
CCTCTAATCCCAGCTACTCG	1360	GGG	+	CCUCUAAUCCCAGCUACUCG	4454
GGCTGGGAAGTCCACGATCA	1361	AGG	+	GGCUGGGAAGUCCACGAUCA	4455
CCTGAAGACCCTCATGTGAC	1362	AGG	-	CCUGAAGACCCUCAUGUGAC	4456
CGGAAGAAGACACAAGTGGC	1363	TGG	+	CGGAAGAAGACACAAGUGGC	4457
GCAGGACACCTGTCACATGA	1364	GGG	+	GCAGGACACCUGUCACAUGA	4458

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TGTCACATGAGGGTCTTCAG	1365	GGG	+	UGUCACAUGAGGGUCUUCAG	4459
CAGCAGATAGGGGAGCCAGA	1366	AGG	-	CAGCAGAUAGGGGAGCCAGA	4460
GGGTTTTCACCATGTTTCCC	1367	AGG	+	GGGUUUUCACCAUGUUUCCC	4461
CCCCGAGTAGCTGGGATTAG	1368	AGG	-	CCCCGAGUAGCUGGGAUUAG	4462
CACTTGAGCTGGGGAGGCGG	1369	AGG	-	CACUUGAGCUGGGGAGGCGG	4463
ATCAAGGTGCCAGCAGATTT	1370	GGG	+	AUCAAGGUGCCAGCAGAUUU	4464
CTGTCACATGAGGGTCTTCA	1371	GGG	+	CUGUCACAUGAGGGUCUUCA	4465
GTCCGTGGGCACAGGCCTGG	1372	GGG	-	GUCCGUGGGCACAGGCCUGG	4466
GGCAGGACACCTGTCACATG	1373	AGG	+	GGCAGGACACCUGUCACAUG	4467
AGCAGATAGGGGAGCCAGAA	1374	GGG	-	AGCAGAUAGGGGAGCCAGAA	4468
CGCTTGTGTGTCTGCCTGCT	1375	AGG	-	CGCUUGUGUGUCUGCCUGCU	4469
CCGGCATGCGCCACCATGCC	1376	TGG	-	CCGGCAUGCGCCACCAUGCC	4470
CCAGACCAGCCTGGCCAAGG	1377	TGG	-	CCAGACCAGCCUGGCCAAGG	4471
CGTGGGCACAGGCCTGGGGG	1378	TGG	-	CGUGGGCACAGGCCUGGGGG	4472
AGAAAACTGCAGAAGCAGGA	1379	AGG	-	AGAAAACUGCAGAAGCAGGA	4473
CTCTAATCCCAGCTACTCGG	1380	GGG	+	CUCUAAUCCCAGCUACUCGG	4474
GGATGGGGGCGTGGTGGGCC	1381	AGG	-	GGAUGGGGGCGUGGUGGGCC	4475
CTCAGGTGATACTCCTGCCT	1382	TGG	-	CUCAGGUGAUACUCCUGCCU	4476
CCACCTTGGCCAGGCTGGTC	1383	TGG	+	CCACCUUGGCCAGGCUGGUC	4477
GTCTTGGGAAATGCAGCATT	1384	TGG	-	GUCUUGGGAAAUGCAGCAUU	4478
CCAGGCATGGTGGCGCATGC	1385	CGG	+	CCAGGCAUGGUGGCGCAUGC	4479
CGGAAGAATCAGATCACACG	1386	TGG	-	CGGAAGAAUCAGAUCACACG	4480
GGGGTTTCACCAGGTTGGGC	1387	AGG	-	GGGGUUUCACCAGGUUGGGC	4481
TCACTGATGGACGTTTGGGT	1388	TGG	-	UCACUGAUGGACGUUUGGGU	4482
AACGTCCATCAGTGATAGAC	1389	TGG	+	AACGUCCAUCAGUGAUAGAC	4483
TCTATCACTGATGGACGTTT	1390	GGG	-	UCUAUCACUGAUGGACGUUU	4484
GATGGGGGCGTGGTGGGCCA	1391	GGG	-	GAUGGGGGCGUGGUGGGCCA	4485
GCGAGGAACATCACACACTG	1392	GGG	+	GCGAGGAACAUCACACACUG	4486
AATCACTTGAGCTGGGGAGG	1393	CGG	-	AAUCACUUGAGCUGGGGAGG	4487
CAGGAGTATCACCTGAGGTC	1394	AGG	+	CAGGAGUAUCACCUGAGGUC	4488
GTGGGGTGGGGGAGCGGGGA	1395	GGG	+	GUGGGGUGGGGGAGCGGGGA	4489
TTTCACCAGGTTGGGCAGGC	1396	TGG	-	UUUCACCAGGUUGGGCAGGC	4490
TCTTGGGAAATGCAGCATTT	1397	GGG	-	UCUUGGGAAAUGCAGCAUUU	4491
GTTCCAGACCAGCCTGGCCA	1398	AGG	-	GUUCCAGACCAGCCUGGCCA	4492
TCTCGCCATGCTGCCCAGGC	1399	TGG	+	UCUCGCCAUGCUGCCCAGGC	4493
TTTCAGCATGCTGGCCAGGC	1400	TGG	+	UUUCAGCAUGCUGGCCAGGC	4494
GGGGGCGTGGTGGGCCAGGG	1401	TGG	-	GGGGGCGUGGUGGGCCAGGG	4495
GTCTATCACTGATGGACGTT	1402	TGG	-	GUCUAUCACUGAUGGACGUU	4496
TAACACAAGCCGCCTACAGA	1403	CGG	+	UAACACAAGCCGCCUACAGA	4497
AATAGCTGCATAGTATTCCA	1404	TGG	-	AAUAGCUGCAUAGUAUUCCA	4498
TCCTGCCTCAGGCTCCCGAG	1405	TGG	+	UCCUGCCUCAGGCUCCCGAG	4499
CTAGCAGGCAGACACACAAG	1406	CGG	+	CUAGCAGGCAGACACACAAG	4500
GCCACTCGGGAGCCTGAGGC	1407	AGG	-	GCCACUCGGGAGCCUGAGGC	4501
AGGTCCGTGGGCACAGGCCT	1408	GGG	-	AGGUCCGUGGGCACAGGCCU	4502
GCCTCAGGCTCCCGAGTGGC	1409	TGG	+	GCCUCAGGCUCCCGAGUGGC	4503
CCCAGCCACTCGGGAGCCTG	1410	AGG	-	CCCAGCCACUCGGGAGCCUG	4504
TGTAGAGACGGGGTTTCACC	1411	AGG	-	UGUAGAGACGGGGUUUCACC	4505
ACTGCCACTGTACTCCAGCC	1412	TGG	+	ACUGCCACUGUACUCCAGCC	4506
TCTCAAACTTCTGAGCTCAA	1413	GGG	+	UCUCAAACUUCUGAGCUCAA	4507
GTCTCAAACTTCTGAGCTCA	1414	AGG	+	GUCUCAAACUUCUGAGCUCA	4508
CCTCAGGCTCCCGAGTGGCT	1415	GGG	+	CCUCAGGCUCCCGAGUGGCU	4509
AGGCCTGTGCCCACGGACCT	1416	AGG	+	AGGCCUGUGCCCACGGACCU	4510
ACCTGTAATCCCAGCCACCT	1417	GGG	-	ACCUGUAAUCCCAGCCACCU	4511
AGAGTCTCGCTGTGTTGCTC	1418	AGG	+	AGAGUCUCGCUGUGUUGCUC	4512
TAGGTCCGTGGGCACAGGCC	1419	TGG	-	UAGGUCCGUGGGCACAGGCC	4513
CACCCCCAGGCCTGTGCCCA	1420	CGG	+	CACCCCCAGGCCUGUGCCCA	4514
TCAGCCTCCCCCGAGTAGCT	1421	GGG	-	UCAGCCUCCCCCGAGUAGCU	4515
GGCACAGGATGGGGGCGTGG	1422	TGG	-	GGCACAGGAUGGGGGCGUGG	4516

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GCTTGTGTGTCTGCCTGCTA	1423	GGG	-	GCUUGUGUGUCUGCCUGCUA	4517
CCTCTCACCTCAGCCTCCCA	1424	TGG	-	CCUCUCACCUCAGCCUCCCA	4518
ATAATAAAATACCATAAACT	1425	AGG	+	AUAAUAAAAUACCAUAAACU	4519
CACCTGTAATCCCAGCCACC	1426	TGG	-	CACCUGUAAUCCCAGCCACC	4520
CGTCTGTAATCCCAGCCACT	1427	CGG	-	CGUCUGUAAUCCCAGCCACU	4521
AGGAGAATCACTTGAAACCC	1428	GGG	-	AGGAGAAUCACUUGAAACCC	4522
TAATCCCAGCTACTCGGGGG	1429	AGG	+	UAAUCCCAGCUACUCGGGGG	4523
GGGATTACAGCCACCATGCC	1430	TGG	-	GGGAUUACAGCCACCAUGCC	4524
CTGGAACTCCTGACCTCAAG	1431	TGG	+	CUGGAACUCCUGACCUCAAG	4525
TACTTAGGAGTGGAATTGCT	1432	GGG	+	UACUUAGGAGUGGAAUUGCU	4526
GGTCCGTGGGCACAGGCCTG	1433	GGG	-	GGUCCGUGGGCACAGGCCUG	4527
GAGCCACCATGCCCGGCCCA	1434	AGG	-	GAGCCACCAUGCCCGGCCCA	4528
CTTACTCTTGTCGCCCAGGC	1435	TGG	-	CUUACUCUUGUCGCCCAGGC	4529
CCTGTCGTGGGGTGGGGGAG	1436	CGG	+	CCUGUCGUGGGGUGGGGGAG	4530
AGGAGGTCGAGGCTGCAGTG	1437	AGG	+	AGGAGGUCGAGGCUGCAGUG	4531
GGAAGAATCAGATCACACGT	1438	GGG	-	GGAAGAAUCAGAUCACACGU	4532
ATACAGACGGGCAGGCTGTG	1439	GGG	-	AUACAGACGGGCAGGCUGUG	4533
GAGTGGAATTGCTGGGTCAT	1440	AGG	+	GAGUGGAAUUGCUGGGUCAU	4534
GCCTGTCATCCCAGCTACTA	1441	GGG	-	GCCUGUCAUCCCAGCUACUA	4535
TTTATAAGCCACCTAGTTTA	1442	TGG	-	UUUAUAAGCCACCUAGUUUA	4536
GCATACAGACGGGCAGGCTG	1443	TGG	-	GCAUACAGACGGGCAGGCUG	4537
TGGTGGGCCAGGGTGGTCTT	1444	GGG	-	UGGUGGGCCAGGGUGGUCUU	4538
TCACTCTGTCACCCAGACTG	1445	AGG	+	UCACUCUGUCACCCAGACUG	4539
CATACAGACGGGCAGGCTGT	1446	GGG	-	CAUACAGACGGGCAGGCUGU	4540
AACTGAACAATGAAAACACT	1447	TGG	+	AACUGAACAAUGAAAACACU	4541
CTTACTCTGTTGCCCAGGCT	1448	GGG	+	CUUACUCUGUUGCCCAGGCU	4542
GGTTTTGAACTCCTGACCTT	1449	AGG	-	GGUUUUGAACUCCUGACCUU	4543
GTGGTGGGCCAGGGTGGTCT	1450	TGG	-	GUGGUGGGCCAGGGUGGUCU	4544
CAGGTGTGCACCACCATGGC	1451	CGG	+	CAGGUGUGCACCACCAUGGC	4545
TCCCTAGTAGCTGGGATGAC	1452	AGG	+	UCCCUAGUAGCUGGGAUGAC	4546
TTTTGCCATATTGCTCAGGC	1453	TGG	-	UUUUGCCAUAUUGCUCAGGC	4547
ACTTGGAAGACTGAGGTGGG	1454	AGG	-	ACUUGGAAGACUGAGGUGGG	4548
CTCAGCACTTTGGGAGGGCG	1455	AGG	+	CUCAGCACUUUGGGAGGGCG	4549
GTGTCTGCCTGCTAGGGTCT	1456	TGG	-	GUGUCUGCCUGCUAGGGUCU	4550
TGTCATCCCAGCTACTAGGG	1457	AGG	-	UGUCAUCCCAGCUACUAGGG	4551
TGTGCCCACGGACCTAGGTG	1458	AGG	+	UGUGCCCACGGACCUAGGUG	4552
GCTACTTGGAAGACTGAGGT	1459	GGG	-	GCUACUUGGAAGACUGAGGU	4553
GCCCCGCTGCTCAAACCTCT	1460	GGG	-	GCCCCGCUGCUCAAACCUCU	4554
TCTAACACTTTGGGAGGCTG	1461	AGG	-	UCUAACACUUUGGGAGGCUG	4555
TCACCTAGGTCCGTGGGCAC	1462	AGG	-	UCACCUAGGUCCGUGGGCAC	4556
TCCCAGGTGGCTGGGATTAC	1463	AGG	+	UCCCAGGUGGCUGGGAUUAC	4557
AGCTACTTGGAAGACTGAGG	1464	TGG	-	AGCUACUUGGAAGACUGAGG	4558
CAGGCCGATCACTTGAGGTC	1465	AGG	-	CAGGCCGAUCACUUGAGGUC	4559
CAGACGTGTGCCACCACGCC	1466	CGG	+	CAGACGUGUGCCACCACGCC	4560
GTCTCAAATTCCTGGGCTCA	1467	AGG	-	GUCUCAAAUUCCUGGGCUCA	4561
ACTACAGGTGTGCACCACCA	1468	TGG	+	ACUACAGGUGUGCACCACCA	4562
GAGACAGGGTTTCACCACCT	1469	TGG	+	GAGACAGGGUUUCACCACCU	4563
TGTAATCCCAGCCACCTGGG	1470	AGG	-	UGUAAUCCCAGCCACCUGGG	4564
GACTGTAATCCCAGCACTTC	1471	AGG	+	GACUGUAAUCCCAGCACUUC	4565
CTCAAGCAATCCTCTGGCCT	1472	TGG	-	CUCAAGCAAUCCUCUGGCCU	4566
TCTCAAATTCCTGGGCTCAA	1473	GGG	-	UCUCAAAUUCCUGGGCUCAA	4567
AGGGTTTCACCACCTTGGCC	1474	AGG	+	AGGGUUUCACCACCUUGGCC	4568
CAGGCGTGAGCCCCTGCACC	1475	TGG	-	CAGGCGUGAGCCCCUGCACC	4569
TTGCTCAGGGTGGAGTGCAG	1476	TGG	+	UUGCUCAGGGUGGAGUGCAG	4570
ATAGGCACAGGATGGGGGCG	1477	TGG	-	AUAGGCACAGGAUGGGGGCG	4571
CACTGCAGCCTTGAACTCCA	1478	GGG	-	CACUGCAGCCUUGAACUCCA	4572
GCTACTAGGGAGGCTGAGGG	1479	AGG	-	GCUACUAGGGAGGCUGAGGG	4573
CAGGCACGCACCACCACATC	1480	CGG	+	CAGGCACGCACCACCACAUC	4574

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GCCACCTGGGAGGCTGAGGC	1481	AGG	-	GCCACCUGGGAGGCUGAGGC	4575
GAAGACTGCTTGAGCCCAGG	1482	AGG	+	GAAGACUGCUUGAGCCCAGG	4576
TCCTGCCTCAGCCTCCCAGG	1483	TGG	+	UCCUGCCUCAGCCUCCCAGG	4577
TAAATAAATAAAAATTAGCC	1484	AGG	-	UAAAUAAAUAAAAAUUAGCC	4578
TTAATTTTTTTGTAGAGACG	1485	GGG	-	UUAAUUUUUUUGUAGAGACG	4579
GCCTCAGCCTCCCAGGTGGC	1486	TGG	+	GCCUCAGCCUCCCAGGUGGC	4580
CCCTCAGCCTCCCTAGTAGC	1487	TGG	+	CCCUCAGCCUCCCUAGUAGC	4581
AAAAAAAAAAAAAAAAGACAT	1488	AGG	-	AAAAAAAAAAAAAAAAGACAU	4582
AAAAAAAAAGCCAGGCACAG	1489	TGG	+	AAAAAAAAAGCCAGGCACAG	4583
CCTGTCCTCACCTAGGTCCG	1490	TGG	-	CCUGUCCUCACCUAGGUCCG	4584
AACCCGGGAGATGGAGGTTG	1491	TGG	-	AACCCGGGAGAUGGAGGUUG	4585
GTCTGTAATCCCAGCCACTC	1492	GGG	-	GUCUGUAAUCCCAGCCACUC	4586
GGGTTTCAACATATGAATTT	1493	TGG	+	GGGUUUCAACAUAUGAAUUU	4587
CTGTCCTCACCTAGGTCCGT	1494	GGG	-	CUGUCCUCACCUAGGUCCGU	4588
CCACGGACCTAGGTGAGGAC	1495	AGG	+	CCACGGACCUAGGUGAGGAC	4589
TCTTGCTCTGTCACCCACAC	1496	TGG	-	UCUUGCUCUGUCACCCACAC	4590
TCTTAAGTAGCTGGGACTAC	1497	AGG	-	UCUUAAGUAGCUGGGACUAC	4591
TCACCACAACCTCCATCTCC	1498	CGG	+	UCACCACAACCUCCAUCUCC	4592
CCAGCTACTAGGGAGGCTGA	1499	GGG	-	CCAGCUACUAGGGAGGCUGA	4593
AGGAGTGCCTGTCCTCACCT	1500	AGG	-	AGGAGUGCCUGUCCUCACCU	4594
CACCACAACCTCCATCTCCC	1501	GGG	+	CACCACAACCUCCAUCUCCC	4595
GTTACTCAGGAAGCTGAGGC	1502	AGG	+	GUUACUCAGGAAGCUGAGGC	4596
TGTAGTCCCAGCTACTTAAG	1503	AGG	+	UGUAGUCCCAGCUACUUAAG	4597
CCAGAGGATTGCTTGAGCCC	1504	AGG	+	CCAGAGGAUUGCUUGAGCCC	4598
GGCTTGAGCCTGGGAGGTTG	1505	AGG	-	GGCUUGAGCCUGGGAGGUUG	4599
GATCAAGGTGCCAGCAGATT	1506	TGG	+	GAUCAAGGUGCCAGCAGAUU	4600
CCTCAGCCTCCCAGGTGGCT	1507	GGG	+	CCUCAGCCUCCCAGGUGGCU	4601
GGGAGGCTGAGGTGAGAGGA	1508	TGG	+	GGGAGGCUGAGGUGAGAGGA	4602
CCCAGCCACCTGGGAGGCTG	1509	AGG	-	CCCAGCCACCUGGGAGGCUG	4603
ACAGGTGCAGCACACCAACA	1510	TGG	+	ACAGGUGCAGCACACCAACA	4604
GCACCACTGCACTCCAGTGT	1511	GGG	+	GCACCACUGCACUCCAGUGU	4605
GCCTCAGCTTCCTGAGTAAC	1512	TGG	-	GCCUCAGCUUCCUGAGUAAC	4606
TGAGAGGATGGCTTGAGCCC	1513	TGG	+	UGAGAGGAUGGCUUGAGCCC	4607
TGTAATTCTAACACTTTGGG	1514	AGG	-	UGUAAUUCUAACACUUUGGG	4608
CCTGGGCTCAAGCAATCCTC	1515	TGG	-	CCUGGGCUCAAGCAAUCCUC	4609
GAGCCAGGGTTTCACCATGT	1516	TGG	+	GAGCCAGGGUUUCACCAUGU	4610
GAGAATCGATTGAACCCAGG	1517	CGG	-	GAGAAUCGAUUGAACCCAGG	4611
GGTTTCAACATATGAATTTT	1518	GGG	+	GGUUUCAACAUAUGAAUUUU	4612
GGAGTGCAGTGGTGCAATAT	1519	CGG	+	GGAGUGCAGUGGUGCAAUAU	4613
ATACAAAAATTAGCCGGCCA	1520	TGG	-	AUACAAAAAUUAGCCGGCCA	4614
CCCAGTTACTCAGGAAGCTG	1521	AGG	+	CCCAGUUACUCAGGAAGCUG	4615
CAAAAATTAGCCGGCCATGG	1522	TGG	-	CAAAAAUUAGCCGGCCAUGG	4616
AAATAAAAATTAGCCAGGTG	1523	TGG	-	AAAUAAAAAUUAGCCAGGUG	4617
CAGGTGCATACCACCACACC	1524	TGG	-	CAGGUGCAUACCACCACACC	4618
GCACTTTGGGAAGCTGAGAC	1525	AGG	-	GCACUUUGGGAAGCUGAGAC	4619
CCTCAGCTTCCTGAGTAACT	1526	GGG	-	CCUCAGCUUCCUGAGUAACU	4620
CTTTGGGAGGGCGAGGTGGG	1527	AGG	+	CUUUGGGAGGGCGAGGUGGG	4621
GCTACTTAAGAGGCTGAGGC	1528	AGG	+	GCUACUUAAGAGGCUGAGGC	4622
TGGGAAGACTGCTTGAGCCC	1529	AGG	+	UGGGAAGACUGCUUGAGCCC	4623
GTTTCAACATATGAATTTTG	1530	GGG	+	GUUUCAACAUAUGAAUUUUG	4624
GCCTCAGCCTCTTAAGTAGC	1531	TGG	-	GCCUCAGCCUCUUAAGUAGC	4625
CAAGGCAGGTGGATCACCTA	1532	AGG	+	CAAGGCAGGUGGAUCACCUA	4626
TTCAACATATGAATTTTGGG	1533	GGG	+	UUCAACAUAUGAAUUUUGGG	4627
CTGCCACTGTACTCCAGCCT	1534	GGG	+	CUGCCACUGUACUCCAGCCU	4628
TTGTGTTTTTTGTAGAGACA	1535	GGG	+	UUGUGUUUUUUGUAGAGACA	4629
TTTCACCACCTTGGCCAGGC	1536	TGG	+	UUUCACCACCUUGGCCAGGC	4630
TCTCGCTCAGTCACCCAGGC	1537	TGG	-	UCUCGCUCAGUCACCCAGGC	4631
TGCATTTCCCAAGACCACCC	1538	TGG	+	UGCAUUUCCCAAGACCACCC	4632

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TCTTTCTTTCTTTTTTGAGA	1539	TGG	-	UCUUUCUUUCUUUUUUGAGA	4633
CCTCAGTCTTCCAAGTAGCT	1540	CGG	+	CCUCAGUCUUCCAAGUAGCU	4634
CTTTGGGAGGACAAGGCAGG	1541	TGG	+	CUUUGGGAGGACAAGGCAGG	4635
GAGTGCAAGGTTTTATTGAG	1542	TGG	-	GAGUGCAAGGUUUUAUUGAG	4636
GTAATCTCAGCACTTTGGGA	1543	GGG	+	GUAAUCUCAGCACUUUGGGA	4637
CAAACATTAGCCAGGCATGG	1544	TGG	+	CAAACAUUAGCCAGGCAUGG	4638
TGAGACCAGCCTGGGCAGCA	1545	TGG	-	UGAGACCAGCCUGGGCAGCA	4639
ATACAAACATTAGCCAGGCA	1546	TGG	+	AUACAAACAUUAGCCAGGCA	4640
TATTATTATTATTTTGAGAC	1547	AGG	-	UAUUAUUAUUAUUUUGAGAC	4641
CCCAGCTACTTAAGAGGCTG	1548	AGG	+	CCCAGCUACUUAAGAGGCUG	4642
TCACCCACACTGGAGTGCAG	1549	TGG	-	UCACCCACACUGGAGUGCAG	4643
GCACTTTGGGAGGGCGAGGT	1550	GGG	+	GCACUUUGGGAGGGCGAGGU	4644
GAGACAGGGTTTTGCTATGT	1551	TGG	-	GAGACAGGGUUUUGCUAUGU	4645
CCTCAGCCTCTTAAGTAGCT	1552	GGG	-	CCUCAGCCUCUUAAGUAGCU	4646
AGGGTTTTGCTATGTTGGCC	1553	AGG	-	AGGGUUUUGCUAUGUUGGCC	4647
TTTGTGTTTTTTGTAGAGAC	1554	AGG	+	UUUGUGUUUUUUGUAGAGAC	4648
TTTCAACATATGAATTTTGG	1555	GGG	+	UUUCAACAUAUGAAUUUUGG	4649
GGGGCCTTTGGGAGGTGATT	1556	AGG	-	GGGGCCUUUGGGAGGUGAUU	4650
AGTGGAATTGCTGGGTCATA	1557	GGG	+	AGUGGAAUUGCUGGGUCAUA	4651
CACTGTAGCCTCAACCTCCC	1558	AGG	+	CACUGUAGCCUCAACCUCCC	4652
CAAAAAACACAAAAATTAGC	1559	TGG	-	CAAAAAACACAAAAAUUAGC	4653
GGAGTACAATGGCGCGATCT	1560	CGG	-	GGAGUACAAUGGCGCGAUCU	4654
TTTTTTTTTTCTTTTGAGAC	1561	TGG	-	UUUUUUUUUUCUUUUGAGAC	4655
TGGCCAACATGGTGAAACCC	1562	TGG	-	UGGCCAACAUGGUGAAACCC	4656
CGCTTGAACCCGGAAGGCAG	1563	AGG	+	CGCUUGAACCCGGAAGGCAG	4657
GAGACGGGGTTTCACCAGGT	1564	TGG	-	GAGACGGGGUUUCACCAGGU	4658
TGGGGCCTGTCGTGGGGTGG	1565	GGG	+	UGGGGCCUGUCGUGGGGUGG	4659
TCTCAGCTTCCCAAAGTGCT	1566	AGG	+	UCUCAGCUUCCCAAAGUGCU	4660
CTGGGGCCTGTCGTGGGGTG	1567	GGG	+	CUGGGGCCUGUCGUGGGGUG	4661
CGTTTGAACCTGGGAGGCGG	1568	AGG	-	CGUUUGAACCUGGGAGGCGG	4662
CACTGGGGCCTGTCGTGGGG	1569	TGG	+	CACUGGGGCCUGUCGUGGGG	4663
AACTCCTGACCTCAAGTGAT	1570	CGG	+	AACUCCUGACCUCAAGUGAU	4664
CAGGCTGGTCTTGAGCTCCT	1571	GGG	-	CAGGCUGGUCUUGAGCUCCU	4665
CGCGCCATTGTACTCCAGCC	1572	TGG	+	CGCGCCAUUGUACUCCAGCC	4666
CGCTTGAACCCGGGAGATGG	1573	AGG	-	CGCUUGAACCCGGGAGAUGG	4667
AGAGTCTTACTCTGTCGCCC	1574	AGG	+	AGAGUCUUACUCUGUCGCCC	4668
AAGAGGCTGAGGCAGGAGAA	1575	TGG	+	AAGAGGCUGAGGCAGGAGAA	4669
AAAAAACACAAAAATTAGCT	1576	GGG	-	AAAAAACACAAAAAUUAGCU	4670
ACTGGGGCCTGTCGTGGGGT	1577	GGG	+	ACUGGGGCCUGUCGUGGGGU	4671
GCACTTTGGGAGGACAAGGC	1578	AGG	+	GCACUUUGGGAGGACAAGGC	4672
GCCTTGGCCTCCTGAAGTGC	1579	TGG	-	GCCUUGGCCUCCUGAAGUGC	4673
GCCTTGTCCTCCCAAAGTGC	1580	TGG	-	GCCUUGUCCUCCCAAAGUGC	4674
AGCACTTTGGGAGGGCGAGG	1581	TGG	+	AGCACUUUGGGAGGGCGAGG	4675
ACACACTGGGGCCTGTCGTG	1582	GGG	+	ACACACUGGGGCCUGUCGUG	4676
TGGCTGTAATCCCAGCTACT	1583	CGG	+	UGGCUGUAAUCCCAGCUACU	4677
CAGGAGAATCACTTGAAACC	1584	CGG	-	CAGGAGAAUCACUUGAAACC	4678
TGCCTGTCATCCCAGCTACT	1585	AGG	-	UGCCUGUCAUCCCAGCUACU	4679
CACACACTGGGGCCTGTCGT	1586	GGG	+	CACACACUGGGGCCUGUCGU	4680
CAGGTGGATCACCTAAGGTC	1587	AGG	+	CAGGUGGAUCACCUAAGGUC	4681
TGTTGTTGTTGTTTTTGAGA	1588	TGG	+	UGUUGUUGUUGUUUUUGAGA	4682
TGCCTCTAATCCCAGCTACT	1589	CGG	+	UGCCUCUAAUCCCAGCUACU	4683
GGAGTGCAGTGGAGCGATCT	1590	TGG	+	GGAGUGCAGUGGAGCGAUCU	4684
CCCAGCACTTCAGGAGGCCA	1591	AGG	+	CCCAGCACUUCAGGAGGCCA	4685
GGCTGTAATCCCAGCTACTC	1592	GGG	+	GGCUGUAAUCCCAGCUACUC	4686
TGCTTGAGCCCAGGAGGTCG	1593	AGG	+	UGCUUGAGCCCAGGAGGUCG	4687
TTTGTATTTTTGTAGAGACG	1594	GGG	-	UUUGUAUUUUUGUAGAGACG	4688
GGAGTCTTACTCTGTTGCCC	1595	AGG	+	GGAGUCUUACUCUGUUGCCC	4689
CCTTGGCCTCCTGAAGTGCT	1596	GGG	-	CCUUGGCCUCCUGAAGUGCU	4690

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CAGGAGCTCAAGACCAGCCT	1597	GGG	+	CAGGAGCUCAAGACCAGCCU	4691
CCAGGCTGGTCTTGAGCTCC	1598	TGG	-	CCAGGCUGGUCUUGAGCUCC	4692
CCAGGAGCTCAAGACCAGCC	1599	TGG	+	CCAGGAGCUCAAGACCAGCC	4693
GAATTTCACTCTTGTTGCCC	1600	AGG	+	GAAUUUCACUCUUGUUGCCC	4694
CGATAGTTTGCTCAGAATGA	1601	TGG	-	CGAUAGUUUGCUCAGAAUGA	4695
CCCAGCACTTTGGGAGGACA	1602	AGG	+	CCCAGCACUUUGGGAGGACA	4696
ATTCTGAGCAAACTATCGCA	1603	AGG	+	AUUCUGAGCAAACUAUCGCA	4697
CTAAAGATACAAAAATTAGC	1604	CGG	-	CUAAAGAUACAAAAAUUAGC	4698
CCTTGTCCTCCCAAAGTGCT	1605	GGG	-	CCUUGUCCUCCCAAAGUGCU	4699
CGCTCCACTGCACTCCAGCC	1606	TGG	-	CGCUCCACUGCACUCCAGCC	4700
GCGCCATTGTACTCCAGCCT	1607	GGG	+	GCGCCAUUGUACUCCAGCCU	4701
ATCTCAAAAAAAAAAAAAAA	1608	AGG	+	AUCUCAAAAAAAAAAAAAAA	4702
GAGCGGGGAGGGATAGCATT	1609	AGG	+	GAGCGGGGAGGGAUAGCAUU	4703
TCAAGCGATTCTCCTGCCTC	1610	AGG	+	UCAAGCGAUUCUCCUGCCUC	4704
TTAATCCAGTCTATCACTGA	1611	TGG	-	UUAAUCCAGUCUAUCACUGA	4705
GAGAATCGCTTGAACCCGGA	1612	AGG	+	GAGAAUCGCUUGAACCCGGA	4706
GCCTCTAATCCCAGCTACTC	1613	GGG	+	GCCUCUAAUCCCAGCUACUC	4707
TTGTAATTTTAGTAGAGACG	1614	GGG	+	UUGUAAUUUUAGUAGAGACG	4708
AATCGCTTGAACCCGGGAGA	1615	TGG	-	AAUCGCUUGAACCCGGGAGA	4709
TTTTGCTATGTTGGCCAGGC	1616	TGG	-	UUUUGCUAUGUUGGCCAGGC	4710
TAAAAATACAAACATTAGCC	1617	AGG	+	UAAAAAUACAAACAUUAGCC	4711
TCACACACTGGGGCCTGTCG	1618	TGG	+	UCACACACUGGGGCCUGUCG	4712
CCATGTTGGTCAGGCTGGTC	1619	TGG	-	CCAUGUUGGUCAGGCUGGUC	4713
CCAGACCAGCCTGACCAACA	1620	TGG	+	CCAGACCAGCCUGACCAACA	4714
TGACTGTAATCCCAGCACTT	1621	TGG	+	UGACUGUAAUCCCAGCACUU	4715
CAGGCTGGTCTCAAATTCCT	1622	GGG	-	CAGGCUGGUCUCAAAUUCCU	4716
TGGGAGGATCCCTTGAGCCC	1623	AGG	+	UGGGAGGAUCCCUUGAGCCC	4717
TGCACCACTGCACTCCAGTC	1624	TGG	-	UGCACCACUGCACUCCAGUC	4718
TCTTACTCTGTCGCCCAGGC	1625	TGG	+	UCUUACUCUGUCGCCCAGGC	4719
TCTCACTCTGTTGCCCAGAC	1626	TGG	+	UCUCACUCUGUUGCCCAGAC	4720
AACTGCTTGAACCCAGGAGG	1627	CGG	+	AACUGCUUGAACCCAGGAGG	4721
ACACAAAAATTAGCTGGGCA	1628	TGG	-	ACACAAAAAUUAGCUGGGCA	4722
GGATTACAGGCGTGAGCCAC	1629	GGG	+	GGAUUACAGGCGUGAGCCAC	4723
GCCGAGGTGGGCGGATCATG	1630	AGG	+	GCCGAGGUGGGCGGAUCAUG	4724
CAGAAGTTTGAGACCAGCCT	1631	GGG	-	CAGAAGUUUGAGACCAGCCU	4725
GAGGTCTCACTATGTTGCCC	1632	AGG	-	GAGGUCUCACUAUGUUGCCC	4726
TTTTGTATTTTTGTAGAGAC	1633	GGG	-	UUUUGUAUUUUUGUAGAGAC	4727
TCGGGAGTTCGAGACCAGCC	1634	TGG	-	UCGGGAGUUCGAGACCAGCC	4728
TGCCTGTAACCCCAGCACTT	1635	TGG	+	UGCCUGUAACCCCAGCACUU	4729
TTTGTAATTTTAGTAGAGAC	1636	GGG	+	UUUGUAAUUUUAGUAGAGAC	4730
GCTCCACTGCACTCCAGCCT	1637	GGG	-	GCUCCACUGCACUCCAGCCU	4731
GCAGGCAGATCACCTGAGGT	1638	CGG	-	GCAGGCAGAUCACCUGAGGU	4732
TCCTGAGTAACTGGGATTAC	1639	CGG	-	UCCUGAGUAACUGGGAUUAC	4733
CTTGGCCTCCCAAAGTGCTG	1640	GGG	-	CUUGGCCUCCCAAAGUGCUG	4734
CAGGTGTGTGCCACCACACC	1641	TGG	+	CAGGUGUGUGCCACCACACC	4735
CCAGGCTGGTCTCAAATTCC	1642	TGG	-	CCAGGCUGGUCUCAAAUUCC	4736
CCAGGAATTTGAGACCAGCC	1643	TGG	+	CCAGGAAUUUGAGACCAGCC	4737
TTTTTGTATTTTTGTAGAGA	1644	CGG	-	UUUUUGUAUUUUUGUAGAGA	4738
TGTAATCCCAGCACTTCAGG	1645	AGG	+	UGUAAUCCCAGCACUUCAGG	4739
GAGAACTGCTTGAACCCAGG	1646	AGG	+	GAGAACUGCUUGAACCCAGG	4740
CAGGAATTTGAGACCAGCCT	1647	GGG	+	CAGGAAUUUGAGACCAGCCU	4741
TCAGAAGTTTGAGACCAGCC	1648	TGG	-	UCAGAAGUUUGAGACCAGCC	4742
GACTGTAATCCCAGCACTTT	1649	GGG	+	GACUGUAAUCCCAGCACUUU	4743
GCACCACTGCACTCCAGTCT	1650	GGG	-	GCACCACUGCACUCCAGUCU	4744
TAAAAATTAGCCAGGTGTGG	1651	TGG	-	UAAAAAUUAGCCAGGUGUGG	4745
TTTTGTAATTTTAGTAGAGA	1652	CGG	+	UUUUGUAAUUUUAGUAGAGA	4746
TAAAAATACAAAAATCAGCT	1653	GGG	-	UAAAAAUACAAAAAUCAGCU	4747
GCCTCGGTCTCCCAAAGTGC	1654	TGG	+	GCCUCGGUCUCCCAAAGUGC	4748

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GCACTTTGGGAGACCGAGGC	1655	GGG	-	GCACUUUGGGAGACCGAGGC	4749
AGCACTTTGGGAGACCGAGG	1656	CGG	-	AGCACUUUGGGAGACCGAGG	4750
ACCTCATGATCCGCCCACCT	1657	CGG	-	ACCUCAUGAUCCGCCCACCU	4751
CACTGCAACCTCTGCCTTCC	1658	GGG	-	CACUGCAACCUCUGCCUUCC	4752
TCTTACTCTGTTGCCCAGGC	1659	TGG	+	UCUUACUCUGUUGCCCAGGC	4753
CACTGCAGCCTCGACCTCCT	1660	GGG	-	CACUGCAGCCUCGACCUCCU	4754
AAAAAAAAAAAAAAAAAAGCC	1661	AGG	+	AAAAAAAAAAAAAAAAAAGCC	4755
GGGGTTTCTCCATGTTGGCC	1662	AGG	+	GGGGUUUCUCCAUGUUGGCC	4756
CAGGAGAACTGCTTGAACCC	1663	AGG	+	CAGGAGAACUGCUUGAACCC	4757
GGTGGGCGGATCATGAGGTC	1664	AGG	+	GGUGGGCGGAUCAUGAGGUC	4758
TTGCCCAGGCTGGAGTACAA	1665	TGG	-	UUGCCCAGGCUGGAGUACAA	4759
TCACTGCAGCCTCGACCTCC	1666	TGG	-	UCACUGCAGCCUCGACCUCC	4760
TCACTGCAACCTCTGCCTTC	1667	CGG	-	UCACUGCAACCUCUGCCUUC	4761
GGGATTACAGGCGTGAGCCA	1668	CGG	+	GGGAUUACAGGCGUGAGCCA	4762
GCCTGTAGTCCCAGCTACTA	1669	GGG	-	GCCUGUAGUCCCAGCUACUA	4763
CTAAAAATACAAAAATCAGC	1670	TGG	-	CUAAAAAUACAAAAAUCAGC	4764
CAGGCGCCCGCCACCACACC	1671	CGG	-	CAGGCGCCCGCCACCACACC	4765
CCCAGCACTTTGGGAGACCG	1672	AGG	-	CCCAGCACUUUGGGAGACCG	4766
TTGCCCAGACTGGAGTGCAG	1673	TGG	+	UUGCCCAGACUGGAGUGCAG	4767
CAAAAAAAAAAAAAAAAAAA	1674	AGG	+	CAAAAAAAAAAAAAAAAAAA	4768
ACACTTTGGGAGGCTGAGGT	1675	GGG	-	ACACUUUGGGAGGCUGAGGU	4769
CCTCGGTCTCCCAAAGTGCT	1676	GGG	+	CCUCGGUCUCCCAAAGUGCU	4770
TCACTGCAGCCTTGAACTCC	1677	AGG	-	UCACUGCAGCCUUGAACUCC	4771
AAAAAAAAAAAAAAAAAAGA	1678	GGG	-	AAAAAAAAAAAAAAAAAAGA	4772
GCCTGTAACCCCAGCACTTT	1679	GGG	+	GCCUGUAACCCCAGCACUUU	4773
ATTATTATACTTTAAGTTCT	1680	AGG	-	AUUAUUAUACUUUAAGUUCU	4774
TTGTATTTTTAGTAGAGACT	1681	GGG	-	UUGUAUUUUUAGUAGAGACU	4775
TCGCCCAGGCTGGAGTACAG	1682	TGG	-	UCGCCCAGGCUGGAGUACAG	4776
CGAGGCAGGCAGATCACCTG	1683	AGG	-	CGAGGCAGGCAGAUCACCUG	4777
CGAGGCAGGCAGATCACCTG	1684	AGG	-	CGAGGCAGGCAGAUCACCUG	4778
TCCCTAGTAGCTGGGACTAC	1685	AGG	+	UCCCUAGUAGCUGGGACUAC	4779
TTTCTCCATGTTGGCCAGGC	1686	TGG	+	UUUCUCCAUGUUGGCCAGGC	4780
AATACAAAATTAGCCAGGCA	1687	TGG	+	AAUACAAAAUUAGCCAGGCA	4781
TGTAGTCCCAGCTACTAGGG	1688	AGG	-	UGUAGUCCCAGCUACUAGGG	4782
GGAGTGCAATGGCGCAATCT	1689	CGG	-	GGAGUGCAAUGGCGCAAUCU	4783
ACAAAATTAGCCAGGCATGG	1690	TGG	+	ACAAAAUUAGCCAGGCAUGG	4784
AATGGTGTGAACCCGGGAGG	1691	CGG	+	AAUGGUGUGAACCCGGGAGG	4785
TTCTCCTGCCTCAGCCTCCC	1692	AGG	+	UUCUCCUGCCUCAGCCUCCC	4786
TCAGGAGTTCCAGACCAGCC	1693	TGG	-	UCAGGAGUUCCAGACCAGCC	4787
TCCCAAAGTGCTGGGGTTAC	1694	AGG	-	UCCCAAAGUGCUGGGGUUAC	4788
TGTAACCCCAGCACTTTGGG	1695	AGG	+	UGUAACCCCAGCACUUUGGG	4789
AAAAAAAAAAAAAAAAAAAG	1696	AGG	-	AAAAAAAAAAAAAAAAAAAG	4790
TACAAAAAATTAGCCGGGTG	1697	TGG	+	UACAAAAAAUUAGCCGGGUG	4791
CAGGTGTGAGCCACCACACC	1698	CGG	-	CAGGUGUGAGCCACCACACC	4792
AACACTTTGGGAGGCTGAGG	1699	TGG	-	AACACUUUGGGAGGCUGAGG	4793
GGTCTCGAACTCCCGACCTC	1700	AGG	+	GGUCUCGAACUCCCGACCUC	4794
TACAAAAAATTAGCCAGGTG	1701	TGG	+	UACAAAAAAUUAGCCAGGUG	4795
CAGGCATGAGCCACCGCACC	1702	TGG	+	CAGGCAUGAGCCACCGCACC	4796
TGCGCCATTGCACTCCAGCC	1703	TGG	+	UGCGCCAUUGCACUCCAGCC	4797
TTATTATACTTTAAGTTCTA	1704	GGG	-	UUAUUAUACUUUAAGUUCUA	4798
GAGAATGGTGTGAACCCGGG	1705	AGG	+	GAGAAUGGUGUGAACCCGGG	4799
AATTAGCCGGGTGTGGTGGC	1706	GGG	+	AAUUAGCCGGGUGUGGUGGC	4800
CACCGCATGTTCTCACTCAT	1707	AGG	+	CACCGCAUGUUCUCACUCAU	4801
CAAGGCAGGTGGATCACCTG	1708	AGG	+	CAAGGCAGGUGGAUCACCUG	4802
CGCATGTTCTCACTCATAGG	1709	TGG	+	CGCAUGUUCUCACUCAUAGG	4803
AAATTAGCCGGGTGTGGTGG	1710	CGG	+	AAAUUAGCCGGGUGUGGUGG	4804
CGCCTGTAATCTCAGCACTT	1711	TGG	+	CGCCUGUAAUCUCAGCACUU	4805
CTCAGGTGATCTGCCTGCCT	1712	CGG	+	CUCAGGUGAUCUGCCUGCCU	4806

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CTCAGGTGATCTGCCTGCCT	1713	CGG	+	CUCAGGUGAUCUGCCUGCCU	4807
GCTACTAGGGAGGCTGAGGC	1714	AGG	-	GCUACUAGGGAGGCUGAGGC	4808
TGCTTGAACCCAGGAGGCGG	1715	AGG	+	UGCUUGAACCCAGGAGGCGG	4809
GCCTCAGCCTCCCTAGTAGC	1716	TGG	+	GCCUCAGCCUCCCUAGUAGC	4810
GAGACGGGGTTTCTCCATGT	1717	TGG	+	GAGACGGGGUUUCUCCAUGU	4811
GAGTGAGAACATGCGGTGTT	1718	TGG	-	GAGUGAGAACAUGCGGUGUU	4812
GGTACATGTGCACAACGTGC	1719	AGG	-	GGUACAUGUGCACAACGUGC	4813
AAAAAATTAGCCGGGTGTGG	1720	TGG	+	AAAAAAUUAGCCGGGUGUGG	4814
CCTAGCACTTTGGGAGGCCG	1721	AGG	+	CCUAGCACUUUGGGAGGCCG	4815
CAGGCGTGAGCCACTGTGCC	1722	TGG	-	CAGGCGUGAGCCACUGUGCC	4816
CCCAGCTACTAGGGAGGCTG	1723	AGG	-	CCCAGCUACUAGGGAGGCUG	4817
CCCAGCTACTAGGGAGGCTG	1724	AGG	-	CCCAGCUACUAGGGAGGCUG	4818
CGCCTGTAATCCTAGCACTT	1725	TGG	+	CGCCUGUAAUCCUAGCACUU	4819
TGTAGGGACATGGATGAAGC	1726	TGG	+	UGUAGGGACAUGGAUGAAGC	4820
CCTCAGCCTCCCTAGTAGCT	1727	GGG	+	CCUCAGCCUCCCUAGUAGCU	4821
CCTCAGCCTCCCTAGTAGCT	1728	GGG	+	CCUCAGCCUCCCUAGUAGCU	4822
TGCCTGTAATCCTAGCACTT	1729	TGG	-	UGCCUGUAAUCCUAGCACUU	4823
CAGGCAGATCACCTGAGGTC	1730	AGG	-	CAGGCAGAUCACCUGAGGUC	4824
CAGGCAGATCACCTGAGGTC	1731	GGG	-	CAGGCAGAUCACCUGAGGUC	4825
GCATGTTCTCACTCATAGGT	1732	GGG	+	GCAUGUUCUCACUCAUAGGU	4826
CACCTATGAGTGAGAACATG	1733	CGG	-	CACCUAUGAGUGAGAACAUG	4827
GCAGGAGAATGGTGTGAACC	1734	CGG	+	GCAGGAGAAUGGUGUGAACC	4828
CAGGCATGAGCCACCATGCC	1735	CGG	-	CAGGCAUGAGCCACCAUGCC	4829
CAGGAGAATGGTGTGAACCC	1736	GGG	+	CAGGAGAAUGGUGUGAACCC	4830
CATGCCATTGCACTCCAGCC	1737	TGG	+	CAUGCCAUUGCACUCCAGCC	4831
TCTCACTATGTTGCCCAGGC	1738	TGG	-	UCUCACUAUGUUGCCCAGGC	4832
ATGCCATTGCACTCCAGCCT	1739	GGG	+	AUGCCAUUGCACUCCAGCCU	4833
AAAAAATTAGCCAGGTGTGG	1740	TGG	+	AAAAAAUUAGCCAGGUGUGG	4834
TATGTATACATGTGCCATGT	1741	TGG	-	UAUGUAUACAUGUGCCAUGU	4835
GGGGTTTCACTGTGTTAGCC	1742	AGG	-	GGGGUUUCACUGUGUUAGCC	4836
GAGTTTCACTCTTGTTGCCC	1743	AGG	-	GAGUUUCACUCUUGUUGCCC	4837
CTCAGGTGATCCACCTGCCT	1744	TGG	-	CUCAGGUGAUCCACCUGCCU	4838
TTCACTCTTGTTGCCCAGGC	1745	TGG	+	UUCACUCUUGUUGCCCAGGC	4839
TTCACTCTTGTTGCCCAGGC	1746	TGG	-	UUCACUCUUGUUGCCCAGGC	4840
GCCTGTAATCTCAGCACTTT	1747	GGG	+	GCCUGUAAUCUCAGCACUUU	4841
GCGCCATTGCACTCCAGCCT	1748	GGG	+	GCGCCAUUGCACUCCAGCCU	4842
GGGGTTTCACCATGTTGGTC	1749	AGG	-	GGGGUUUCACCAUGUUGGUC	4843
ACCTCAGCCTCCTGAGTAGC	1750	TGG	-	ACCUCAGCCUCCUGAGUAGC	4844
AGCTACTCAGGAGGCTGAGG	1751	CGG	-	AGCUACUCAGGAGGCUGAGG	4845
AGCTACTCAGGAGGCTGAGG	1752	TGG	+	AGCUACUCAGGAGGCUGAGG	4846
GCTACTCAGGAGGCTGAGGT	1753	GGG	+	GCUACUCAGGAGGCUGAGGU	4847
TTTTTTTTTTTTTTTGAGAC	1754	AGG	+	UUUUUUUUUUUUUUUGAGAC	4848
TTTTTTTTTTTTTTTGAGAC	1755	AGG	-	UUUUUUUUUUUUUUUGAGAC	4849
TTTTTTTTTTTTTTGAGACA	1756	GGG	+	UUUUUUUUUUUUUUGAGACA	4850
TTTTTTTTTTTTTTGAGACA	1757	GGG	-	UUUUUUUUUUUUUUGAGACA	4851
TTTCACTGTGTTAGCCAGGA	1758	TGG	-	UUUCACUGUGUUAGCCAGGA	4852
TCACCCAGGCTGGAGTGCAA	1759	TGG	-	UCACCCAGGCUGGAGUGCAA	4853
ACCTGTAATCCCAGCTACTT	1760	GGG	+	ACCUGUAAUCCCAGCUACUU	4854
CTAAAAATACAAAATTAGCC	1761	AGG	+	CUAAAAAUACAAAAUUAGCC	4855
GCCTGTAATCCTAGCACTTT	1762	GGG	-	GCCUGUAAUCCUAGCACUUU	4856
GCCTGTAATCCTAGCACTTT	1763	GGG	+	GCCUGUAAUCCUAGCACUUU	4857
GGAGTGCAGTGGCGTGATCT	1764	TGG	+	GGAGUGCAGUGGCGUGAUCU	4858
GGAGTGCAGTGGCGTGATCT	1765	CGG	+	GGAGUGCAGUGGCGUGAUCU	4859
TCCCAAAGTGCTGAGATTAC	1766	AGG	-	UCCCAAAGUGCUGAGAUUAC	4860
TGTAATCTCAGCACTTTGGG	1767	AGG	+	UGUAAUCUCAGCACUUUGGG	4861
TAGACTGGATTAAGAAAATG	1768	TGG	+	UAGACUGGAUUAAGAAAAUG	4862
TTTCACCATGTTGGTCAGGC	1769	TGG	-	UUUCACCAUGUUGGUCAGGC	4863
CACTGCAACCTCCGCCTCCT	1770	GGG	-	CACUGCAACCUCCGCCUCCU	4864

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGAGTCTCGCTCTGTCGCCC	1771	AGG	-	GGAGUCUCGCUCUGUCGCCC	4865
AATGTGGCACATATACACCA	1772	TGG	+	AAUGUGGCACAUAUACACCA	4866
ACGCCACTGCACTCCAGCCT	1773	GGG	-	ACGCCACUGCACUCCAGCCU	4867
TCCCAAAGTGCTAGGATTAC	1774	AGG	+	UCCCAAAGUGCUAGGAUUAC	4868
TCCCAAAGTGCTAGGATTAC	1775	AGG	-	UCCCAAAGUGCUAGGAUUAC	4869
GGAGTGCAGTGGCGCGATCT	1776	TGG	-	GGAGUGCAGUGGCGCGAUCU	4870
CACGCCACTGCACTCCAGCC	1777	TGG	-	CACGCCACUGCACUCCAGCC	4871
TGTAATCCTAGCACTTTGGG	1778	AGG	+	UGUAAUCCUAGCACUUUGGG	4872
CAAAAATTAGCTGGGCATGG	1779	TGG	-	CAAAAAUUAGCUGGGCAUGG	4873
CTTTGGGAGGCTGAGGTGGG	1780	AGG	-	CUUUGGGAGGCUGAGGUGGG	4874
GGTCTCAAACTCCTGACCTC	1781	AGG	-	GGUCUCAAACUCCUGACCUC	4875
GAGAATCGCTTGAACCCAGG	1782	AGG	+	GAGAAUCGCUUGAACCCAGG	4876
CAGGCGTGAGCCACCGCGCC	1783	CGG	+	CAGGCGUGAGCCACCGCGCC	4877
CTTTGGGAGGCCAAGGCAGG	1784	TGG	+	CUUUGGGAGGCCAAGGCAGG	4878
GGTCTTGAACTCCTGACCTC	1785	AGG	+	GGUCUUGAACUCCUGACCUC	4879
TCTCGCTCTGTCGCCCAGGC	1786	TGG	-	UCUCGCUCUGUCGCCCAGGC	4880
CTTTGGGAGGCCGAGGTGGG	1787	CGG	+	CUUUGGGAGGCCGAGGUGGG	4881
CACCTGTAATCCCAGCTACT	1788	TGG	+	CACCUGUAAUCCCAGCUACU	4882
CGCGCCACTGCACTCCAGCC	1789	TGG	+	CGCGCCACUGCACUCCAGCC	4883
ACCTGTAGTCCCAGCTACTC	1790	AGG	-	ACCUGUAGUCCCAGCUACUC	4884
AGGGTTTCACCATGTTGGCC	1791	AGG	+	AGGGUUUCACCAUGUUGGCC	4885
CACTGCAAGCTCCGCCTCCC	1792	GGG	-	CACUGCAAGCUCCGCCUCCC	4886
TGCCTGTAGTCCCAGCTACT	1793	AGG	-	UGCCUGUAGUCCCAGCUACU	4887
GGTCTCGAACTCCTGACCTC	1794	AGG	-	GGUCUCGAACUCCUGACCUC	4888
TCACTGCAAGCTCCGCCTCC	1795	CGG	-	UCACUGCAAGCUCCGCCUCC	4889
CACTGCAACCTCCGCCTCCC	1796	AGG	+	CACUGCAACCUCCGCCUCCC	4890
GCACTTTGGGAGGCCGAGGT	1797	GGG	+	GCACUUUGGGAGGCCGAGGU	4891
TCACTGCAACCTCCGCCTCC	1798	TGG	-	UCACUGCAACCUCCGCCUCC	4892
CAAGACCAGCCTGGCCAACA	1799	TGG	-	CAAGACCAGCCUGGCCAACA	4893
GAGATGGGGTTTCACCATGT	1800	TGG	-	GAGAUGGGGUUUCACCAUGU	4894
TGTAGTCCCAGCTACTCAGG	1801	AGG	+	UGUAGUCCCAGCUACUCAGG	4895
TGTAGTCCCAGCTACTCAGG	1802	AGG	-	UGUAGUCCCAGCUACUCAGG	4896
TCCTGAGTAGCTGGGACTAC	1803	AGG	+	UCCUGAGUAGCUGGGACUAC	4897
TCCTGAGTAGCTGGGACTAC	1804	AGG	-	UCCUGAGUAGCUGGGACUAC	4898
CAGGAGAATCGCTTGAACCC	1805	AGG	+	CAGGAGAAUCGCUUGAACCC	4899
CAGGAGAATCGCTTGAACCC	1806	GGG	-	CAGGAGAAUCGCUUGAACCC	4900
CGAGACCAGCCTGGCCAACA	1807	TGG	-	CGAGACCAGCCUGGCCAACA	4901
GCAGGAGAATCGCTTGAACC	1808	CGG	+	GCAGGAGAAUCGCUUGAACC	4902
GCAGGAGAATCGCTTGAACC	1809	CGG	-	GCAGGAGAAUCGCUUGAACC	4903
TGTAATCCCAGCTACTCGGG	1810	AGG	+	UGUAAUCCCAGCUACUCGGG	4904
TAAAAATACAAAAAATTAGC	1811	CGG	+	UAAAAAUACAAAAAAUUAGC	4905
GCGCCACTGCACTCCAGCCT	1812	GGG	+	GCGCCACUGCACUCCAGCCU	4906
TCCCAAGTAGCTGGGATTAC	1813	AGG	-	UCCCAAGUAGCUGGGAUUAC	4907
TGTAATCCCAGCTACTTGGG	1814	AGG	+	UGUAAUCCCAGCUACUUGGG	4908
TCAGGAGTTCAAGACCAGCC	1815	TGG	-	UCAGGAGUUCAAGACCAGCC	4909
TCAGGAGTTCGAGACCAGCC	1816	TGG	+	UCAGGAGUUCGAGACCAGCC	4910
TCAGGAGTTCGAGACCAGCC	1817	TGG	-	UCAGGAGUUCGAGACCAGCC	4911
AAAAATACAAAAAATTAGCC	1818	AGG	+	AAAAAUACAAAAAAUUAGCC	4912
AAAAATACAAAAAATTAGCC	1819	GGG	+	AAAAAUACAAAAAAUUAGCC	4913
TCAGGAGATCGAGACCATCC	1820	TGG	+	UCAGGAGAUCGAGACCAUCC	4914
GCCTTGGCCTCCCAAAGTGC	1821	TGG	-	GCCUUGGCCUCCCAAAGUGC	4915
GCCTTGGCCTCCCAAAGTGC	1822	TGG	-	GCCUUGGCCUCCCAAAGUGC	4916
GCACTTTGGGAGGCCAAGGC	1823	AGG	+	GCACUUUGGGAGGCCAAGGC	4917
GCACTTTGGGAGGCCAAGGC	1824	AGG	+	GCACUUUGGGAGGCCAAGGC	4918
GCCTCAGCCTCCCAAAGTGC	1825	TGG	-	GCCUCAGCCUCCCAAAGUGC	4919
GCACTTTGGGAGGCTGAGGC	1826	GGG	+	GCACUUUGGGAGGCUGAGGC	4920
AGCACTTTGGGAGGCTGAGG	1827	CGG	+	AGCACUUUGGGAGGCUGAGG	4921
TCGCCCAGGCTGGAGTGCAG	1828	TGG	-	UCGCCCAGGCUGGAGUGCAG	4922

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TCGCCCAGGCTGGAGTGCAG	1829	TGG	+	UCGCCCAGGCUGGAGUGCAG	4923
TTGTATTTTTAGTAGAGACA	1830	GGG	+	UUGUAUUUUUAGUAGAGACA	4924
TTGTATTTTTAGTAGAGACA	1831	GGG	-	UUGUAUUUUUAGUAGAGACA	4925
TTGCCCAGGCTGGAGTGCAG	1832	TGG	+	UUGCCCAGGCUGGAGUGCAG	4926
CACCTGTAATCCCAGCACTT	1833	TGG	+	CACCUGUAAUCCCAGCACUU	4927
GCCTGTAGTCCCAGCTACTC	1834	AGG	+	GCCUGUAGUCCCAGCUACUC	4928
ACCTGTAATCCCAGCACTTT	1835	GGG	+	ACCUGUAAUCCCAGCACUUU	4929
GCTACTTGGGAGGCTGAGGC	1836	AGG	+	GCUACUUGGGAGGCUGAGGC	4930
GCTACTCAGGAGGCTGAGGC	1837	GGG	-	GCUACUCAGGAGGCUGAGGC	4931
CCCAGCACTTTGGGAGGCCA	1838	AGG	+	CCCAGCACUUUGGGAGGCCA	4932
CCCAGCACTTTGGGAGGCCA	1839	AGG	+	CCCAGCACUUUGGGAGGCCA	4933
GCCTCAGCCTCCCAAGTAGC	1840	TGG	-	GCCUCAGCCUCCCAAGUAGC	4934
GCCTCGGCCTCCCAAAGTGC	1841	TGG	+	GCCUCGGCCUCCCAAAGUGC	4935
GCCTCGGCCTCCCAAAGTGC	1842	TGG	+	GCCUCGGCCUCCCAAAGUGC	4936
TTGTATTTTTAGTAGAGATG	1843	GGG	-	UUGUAUUUUUAGUAGAGAUG	4937
TTTTTTTTTTTTTTTTGAGA	1844	TGG	-	UUUUUUUUUUUUUUUUGAGA	4938
TTTTTTTTTTTTTTTTGAGA	1845	CGG	-	UUUUUUUUUUUUUUUUGAGA	4939
CCTTGGCCTCCCAAAGTGCT	1846	GGG	-	CCUUGGCCUCCCAAAGUGCU	4940
CCTTGGCCTCCCAAAGTGCT	1847	GGG	-	CCUUGGCCUCCCAAAGUGCU	4941
CCCAGCACTTTGGGAGGCTG	1848	AGG	+	CCCAGCACUUUGGGAGGCUG	4942
GCACTTTGGGAGGCCGAGGC	1849	AGG	-	GCACUUUGGGAGGCCGAGGC	4943
GCACTTTGGGAGGCCGAGGC	1850	AGG	-	GCACUUUGGGAGGCCGAGGC	4944
GCCTCAGCCTCCTGAGTAGC	1851	TGG	+	GCCUCAGCCUCCUGAGUAGC	4945
TTTGTATTTTTAGTAGAGAT	1852	GGG	-	UUUGUAUUUUUAGUAGAGAU	4946
TTTCACCATGTTGGCCAGGC	1853	TGG	+	UUUCACCAUGUUGGCCAGGC	4947
GCTACTCGGGAGGCTGAGGC	1854	AGG	+	GCUACUCGGGAGGCUGAGGC	4948
AGCACTTTGGGAGGCCGAGG	1855	TGG	+	AGCACUUUGGGAGGCCGAGG	4949
CCCAGCTACTTGGGAGGCTG	1856	AGG	+	CCCAGCUACUUGGGAGGCUG	4950
TGCCTGTAATCCCAGCACTT	1857	TGG	-	UGCCUGUAAUCCCAGCACUU	4951
CCTCAGCCTCCCAAAGTGCT	1858	GGG	-	CCUCAGCCUCCCAAAGUGCU	4952
CCTCAGCCTCCCAAGTAGCT	1859	GGG	-	CCUCAGCCUCCCAAGUAGCU	4953
CCCAGCTACTCAGGAGGCTG	1860	AGG	-	CCCAGCUACUCAGGAGGCUG	4954
CCCAGCTACTCAGGAGGCTG	1861	AGG	+	CCCAGCUACUCAGGAGGCUG	4955
GCCTCAGCCTCCCGAGTAGC	1862	TGG	-	GCCUCAGCCUCCCGAGUAGC	4956
CCTCAGCCTCCTGAGTAGCT	1863	GGG	-	CCUCAGCCUCCUGAGUAGCU	4957
CCTCAGCCTCCTGAGTAGCT	1864	GGG	+	CCUCAGCCUCCUGAGUAGCU	4958
CCCAGCTACTCGGGAGGCTG	1865	AGG	+	CCCAGCUACUCGGGAGGCUG	4959
TTGTATTTTTAGTAGAGACG	1866	GGG	-	UUGUAUUUUUAGUAGAGACG	4960
CCTCAGCCTCCCGAGTAGCT	1867	GGG	-	CCUCAGCCUCCCGAGUAGCU	4961
CCCAGCACTTTGGGAGGCCG	1868	AGG	-	CCCAGCACUUUGGGAGGCCG	4962
CCCAGCACTTTGGGAGGCCG	1869	AGG	-	CCCAGCACUUUGGGAGGCCG	4963
CCTCGGCCTCCCAAAGTGCT	1870	AGG	-	CCUCGGCCUCCCAAAGUGCU	4964
CCTCGGCCTCCCAAAGTGCT	1871	GGG	+	CCUCGGCCUCCCAAAGUGCU	4965
CCTCGGCCTCCCAAAGTGCT	1872	GGG	+	CCUCGGCCUCCCAAAGUGCU	4966
CGCCTGTAATCCCAGCACTT	1873	TGG	+	CGCCUGUAAUCCCAGCACUU	4967
CGCCTGTAATCCCAGCACTT	1874	TGG	-	CGCCUGUAAUCCCAGCACUU	4968
CGCCTGTAATCCCAGCACTT	1875	TGG	-	CGCCUGUAAUCCCAGCACUU	4969
TTTGTATTTTTAGTAGAGAC	1876	AGG	+	UUUGUAUUUUUAGUAGAGAC	4970
TTTGTATTTTTAGTAGAGAC	1877	AGG	-	UUUGUAUUUUUAGUAGAGAC	4971
TTTGTATTTTTAGTAGAGAC	1878	GGG	-	UUUGUAUUUUUAGUAGAGAC	4972
TTTGTATTTTTAGTAGAGAC	1879	TGG	-	UUUGUAUUUUUAGUAGAGAC	4973
TTTTGTATTTTTAGTAGAGA	1880	TGG	-	UUUUGUAUUUUUAGUAGAGA	4974
TTTTGTATTTTTAGTAGAGA	1881	CGG	-	UUUUGUAUUUUUAGUAGAGA	4975
GCCTGTAATCCCAGCACTTT	1882	GGG	+	GCCUGUAAUCCCAGCACUUU	4976
GCCTGTAATCCCAGCACTTT	1883	GGG	-	GCCUGUAAUCCCAGCACUUU	4977
GCCTGTAATCCCAGCACTTT	1884	GGG	-	GCCUGUAAUCCCAGCACUUU	4978
GCCTGTAATCCCAGCACTTT	1885	GGG	-	GCCUGUAAUCCCAGCACUUU	4979
TCCCAAAGTGCTGGGATTAC	1886	AGG	-	UCCCAAAGUGCUGGGAUUAC	4980

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TCCCAAAGTGCTGGGATTAC	1887	AGG	-	UCCCAAAGUGCUGGGAUUAC	4981
TCCCAAAGTGCTGGGATTAC	1888	AGG	+	UCCCAAAGUGCUGGGAUUAC	4982
TCCCAAAGTGCTGGGATTAC	1889	AGG	+	UCCCAAAGUGCUGGGAUUAC	4983
TCCCAAAGTGCTGGGATTAC	1890	AGG	+	UCCCAAAGUGCUGGGAUUAC	4984
TGTAATCCCAGCACTTTGGG	1891	AGG	+	UGUAAUCCCAGCACUUUGGG	4985
TGTAATCCCAGCACTTTGGG	1892	AGG	+	UGUAAUCCCAGCACUUUGGG	4986
TGTAATCCCAGCACTTTGGG	1893	AGG	+	UGUAAUCCCAGCACUUUGGG	4987
TGTAATCCCAGCACTTTGGG	1894	AGG	-	UGUAAUCCCAGCACUUUGGG	4988
TGTAATCCCAGCACTTTGGG	1895	AGG	-	UGUAAUCCCAGCACUUUGGG	4989

[00307] Table 3. Mouse *Rs1* Intron 1 Guide RNA Target Sequences and Guide Sequences.

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ACCTGAGTAATAAAAATTGT	1896	TGG	+	ACCUGAGUAAUAAAAAUUGU	4990
TCCAACAATTTTTATTACTC	1897	AGG	-	UCCAACAAUUUUUAUUACUC	4991
CAACATGCCAATTAGTTCAC	1898	AGG	+	CAACAUGCCAAUUAGUUCAC	4992
TTAATAACCTGTGAACTAAT	1899	TGG	-	UUAAUAACCUGUGAACUAAU	4993
TCACAGGTTATTAATTTAAA	1900	AGG	+	UCACAGGUUAUUAAUUUAAA	4994
TTTAAAAGGTCACTGTTGTG	1901	TGG	+	UUUAAAAGGUCACUGUUGUG	4995
CTTTGTCACTGTCTTGCTCC	1902	TGG	+	CUUUGUCACUGUCUUGCUCC	4996
CTGTCTTGCTCCTGGCTTCC	1903	TGG	+	CUGUCUUGCUCCUGGCUUCC	4997
CCTGGCTTCCTGGTTTCATG	1904	AGG	+	CCUGGCUUCCUGGUUUCAUG	4998
CCTCATGAAACCAGGAAGCC	1905	AGG	-	CCUCAUGAAACCAGGAAGCC	4999
AGAAGGTTCCTCATGAAACC	1906	AGG	-	AGAAGGUUCCUCAUGAAACC	5000
AATATCATTTGAACTTTAGA	1907	AGG	-	AAUAUCAUUUGAACUUUAGA	5001
ATTGAAACTCAACAGAAAGA	1908	AGG	+	AUUGAAACUCAACAGAAAGA	5002
AAACTCAACAGAAAGAAGGA	1909	AGG	+	AAACUCAACAGAAAGAAGGA	5003
AACTCAACAGAAAGAAGGAA	1910	GGG	+	AACUCAACAGAAAGAAGGAA	5004
TTGTTTTTATAGAAACTCTG	1911	AGG	-	UUGUUUUUAUAGAAACUCUG	5005
TAATGAGAAGTCATGTTTCT	1912	TGG	+	UAAUGAGAAGUCAUGUUUCU	5006
TCATGTTTCTTGGAAATTTT	1913	AGG	+	UCAUGUUUCUUGGAAAUUUU	5007
TGTTTCTTGGAAATTTTAGG	1914	AGG	+	UGUUUCUUGGAAAUUUUAGG	5008
TAGAATTTAATATTGTAAGC	1915	CGG	+	UAGAAUUUAAUAUUGUAAGC	5009
TGTAAGCCGGACTATTACTG	1916	AGG	+	UGUAAGCCGGACUAUUACUG	5010
GTAAGCCGGACTATTACTGA	1917	GGG	+	GUAAGCCGGACUAUUACUGA	5011
CTTAACCCTCAGTAATAGTC	1918	CGG	-	CUUAACCCUCAGUAAUAGUC	5012
CGGACTATTACTGAGGGTTA	1919	AGG	+	CGGACUAUUACUGAGGGUUA	5013
GAAGCTATTAATAGCTCTGC	1920	TGG	+	GAAGCUAUUAAUAGCUCUGC	5014
AAGCTATTAATAGCTCTGCT	1921	GGG	+	AAGCUAUUAAUAGCUCUGCU	5015
TGCTGGGACAAGTGTAAATG	1922	AGG	+	UGCUGGGACAAGUGUAAAUG	5016
GTGTAAATGAGGACTGTCCC	1923	AGG	+	GUGUAAAUGAGGACUGUCCC	5017
AGGACTGTCCCAGGCAAATC	1924	AGG	+	AGGACUGUCCCAGGCAAAUC	5018
TCCCAGGCAAATCAGGACAA	1925	AGG	+	UCCCAGGCAAAUCAGGACAA	5019
CCCAGGCAAATCAGGACAAA	1926	GGG	+	CCCAGGCAAAUCAGGACAAA	5020
CCCTTTGTCCTGATTTGCCT	1927	GGG	-	CCCUUUGUCCUGAUUUGCCU	5021
ACCCTTTGTCCTGATTTGCC	1928	TGG	-	ACCCUUUGUCCUGAUUUGCC	5022
GGGTCACCCTAGTTTAAATA	1929	TGG	+	GGGUCACCCUAGUUUAAAUA	5023
GCTAATCCATATTTAAACTA	1930	GGG	-	GCUAAUCCAUAUUUAAACUA	5024
TGCTAATCCATATTTAAACT	1931	AGG	-	UGCUAAUCCAUAUUUAAACU	5025
TTTAAATATGGATTAGCATA	1932	AGG	+	UUUAAAUAUGGAUUAGCAUA	5026
TATTAGACTGCAGTGGTGCT	1933	TGG	-	UAUUAGACUGCAGUGGUGCU	5027
AGACTTCTATTAGACTGCAG	1934	TGG	-	AGACUUCUAUUAGACUGCAG	5028
TAGGGTTTATTGACTTTCTT	1935	TGG	-	UAGGGUUUAUUGACUUUCUU	5029
TGGAATATATTGAGTCTTTA	1936	GGG	-	UGGAAUAUAUUGAGUCUUUA	5030
ATGGAATATATTGAGTCTTT	1937	AGG	-	AUGGAAUAUAUUGAGUCUUU	5031

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ATTTAGAAGTTTAAAAGTGA	1938	TGG	-	AUUUAGAAGUUUAAAAGUGA	5032
CACTTTTAAACTTCTAAATG	1939	TGG	+	CACUUUUAAACUUCUAAAUG	5033
TAAACTTCTAAATGTGGCCC	1940	TGG	+	UAAACUUCUAAAUGUGGCCC	5034
CTTCTAAATGTGGCCCTGGC	1941	AGG	+	CUUCUAAAUGUGGCCCUGGC	5035
TAAGCATATTATGCCTGCCA	1942	GGG	-	UAAGCAUAUUAUGCCUGCCA	5036
TTAAGCATATTATGCCTGCC	1943	AGG	-	UUAAGCAUAUUAUGCCUGCC	5037
AGGCATAATATGCTTAAATA	1944	AGG	+	AGGCAUAAUAUGCUUAAAUA	5038
AGAGAGTATTATGTCTAAGA	1945	TGG	-	AGAGAGUAUUAUGUCUAAGA	5039
GGGCACTAGAGAGGTAAGAG	1946	AGG	-	GGGCACUAGAGAGGUAAGAG	5040
TGAATTGATGGGCACTAGAG	1947	AGG	-	UGAAUUGAUGGGCACUAGAG	5041
AAAAGGAATTCTGAATTGAT	1948	GGG	-	AAAAGGAAUUCUGAAUUGAU	5042
TAAAAGGAATTCTGAATTGA	1949	TGG	-	UAAAAGGAAUUCUGAAUUGA	5043
TTGAAAGTATAAACTTTAAA	1950	AGG	-	UUGAAAGUAUAAACUUUAAA	5044
TACTTTCAAATATTAAAAAT	1951	TGG	+	UACUUUCAAAUAUUAAAAAU	5045
AAATATTAAAAATTGGTTGA	1952	AGG	+	AAAUAUUAAAAAUUGGUUGA	5046
AATATTAAAAATTGGTTGAA	1953	GGG	+	AAUAUUAAAAAUUGGUUGAA	5047
TTAAAAATTGGTTGAAGGGT	1954	TGG	+	UUAAAAAUUGGUUGAAGGGU	5048
TAAAAATTGGTTGAAGGGTT	1955	GGG	+	UAAAAAUUGGUUGAAGGGUU	5049
AAAAATTGGTTGAAGGGTTG	1956	GGG	+	AAAAAUUGGUUGAAGGGUUG	5050
TGGTTGAAGGGTTGGGGATG	1957	TGG	+	UGGUUGAAGGGUUGGGGAUG	5051
GGGTTGGGGATGTGGCTCAG	1958	TGG	+	GGGUUGGGGAUGUGGCUCAG	5052
GACTCATGAAGGCTGGGCAG	1959	GGG	-	GACUCAUGAAGGCUGGGCAG	5053
GGACTCATGAAGGCTGGGCA	1960	GGG	-	GGACUCAUGAAGGCUGGGCA	5054
GGGACTCATGAAGGCTGGGC	1961	AGG	-	GGGACUCAUGAAGGCUGGGC	5055
CTCAGGGACTCATGAAGGCT	1962	GGG	-	CUCAGGGACUCAUGAAGGCU	5056
ACTCAGGGACTCATGAAGGC	1963	TGG	-	ACUCAGGGACUCAUGAAGGC	5057
TTTAACTCAGGGACTCATGA	1964	AGG	-	UUUAACUCAGGGACUCAUGA	5058
GCTTCTGGGAATTTAACTCA	1965	GGG	-	GCUUCUGGGAAUUUAACUCA	5059
TGCTTCTGGGAATTTAACTC	1966	AGG	-	UGCUUCUGGGAAUUUAACUC	5060
GTTTGTCTTATACTGCTTCT	1967	GGG	-	GUUUGUCUUAUACUGCUUCU	5061
TGTTTGTCTTATACTGCTTC	1968	TGG	-	UGUUUGUCUUAUACUGCUUC	5062
ACCTTACTTCATCCATTTTC	1969	TGG	+	ACCUUACUUCAUCCAUUUUC	5063
GCCAGAAAATGGATGAAGTA	1970	AGG	-	GCCAGAAAAUGGAUGAAGUA	5064
TGTGTAGCTATGCCAGAAAA	1971	TGG	-	UGUGUAGCUAUGCCAGAAAA	5065
CATACCTGCAATCCTAGTTC	1972	TGG	+	CAUACCUGCAAUCCUAGUUC	5066
TTGTCCAGAACTAGGATTGC	1973	AGG	-	UUGUCCAGAACUAGGAUUGC	5067
GCTTGAATTTGTCCAGAACT	1974	AGG	-	GCUUGAAUUUGUCCAGAACU	5068
AGTTCTGGACAAATTCAAGC	1975	AGG	+	AGUUCUGGACAAAUUCAAGC	5069
AATGCCAACCTCAGCTACTT	1976	AGG	+	AAUGCCAACCUCAGCUACUU	5070
CAAACCTAAGTAGCTGAGGT	1977	TGG	-	CAAACCUAAGUAGCUGAGGU	5071
CAACCTCAGCTACTTAGGTT	1978	TGG	+	CAACCUCAGCUACUUAGGUU	5072
AACCTCAGCTACTTAGGTTT	1979	GGG	+	AACCUCAGCUACUUAGGUUU	5073
AGCCCAAACCTAAGTAGCTG	1980	AGG	-	AGCCCAAACCUAAGUAGCUG	5074
CTGAGACCCTGTCTTAACAT	1981	TGG	+	CUGAGACCCUGUCUUAACAU	5075
TGAGACCCTGTCTTAACATT	1982	GGG	+	UGAGACCCUGUCUUAACAUU	5076
GAGACCCTGTCTTAACATTG	1983	GGG	+	GAGACCCUGUCUUAACAUUG	5077
AGACCCTGTCTTAACATTGG	1984	GGG	+	AGACCCUGUCUUAACAUUGG	5078
TCTCCCCCAATGTTAAGACA	1985	GGG	-	UCUCCCCCAAUGUUAAGACA	5079
CTCTCCCCCAATGTTAAGAC	1986	AGG	-	CUCUCCCCCAAUGUUAAGAC	5080
TTAACATTGGGGGAGAGCCT	1987	AGG	+	UUAACAUUGGGGGAGAGCCU	5081
ATTGGGGGAGAGCCTAGGCT	1988	AGG	+	AUUGGGGGAGAGCCUAGGCU	5082
TGTATAGCTCAGCCTAGCCT	1989	AGG	-	UGUAUAGCUCAGCCUAGCCU	5083
CTATACAGTAAGCCTCTGTC	1990	TGG	+	CUAUACAGUAAGCCUCUGUC	5084
TATACAGTAAGCCTCTGTCT	1991	GGG	+	UAUACAGUAAGCCUCUGUCU	5085
CAGTAAGCCTCTGTCTGGGA	1992	AGG	+	CAGUAAGCCUCUGUCUGGGA	5086
TAAGCCTCTGTCTGGGAAGG	1993	AGG	+	UAAGCCUCUGUCUGGGAAGG	5087
AAGCCTCTGTCTGGGAAGGA	1994	GGG	+	AAGCCUCUGUCUGGGAAGGA	5088
TTTCCCTCCTTCCCAGACAG	1995	AGG	-	UUUCCCUCCUUCCCAGACAG	5089

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TGTCTGGGAAGGAGGGAAAA	1996	AGG	+	UGUCUGGGAAGGAGGGAAAA	5090
TGGGAAGGAGGGAAAAAGGA	1997	AGG	+	UGGGAAGGAGGGAAAAAGGA	5091
GAAAAAGGAAGGAAAGACAT	1998	TGG	+	GAAAAAGGAAGGAAAGACAU	5092
GACATTGGTTGAATGACTTG	1999	TGG	+	GACAUUGGUUGAAUGACUUG	5093
ACATTGGTTGAATGACTTGT	2000	GGG	+	ACAUUGGUUGAAUGACUUGU	5094
ACTGTATGTTTAGAGTGTTC	2001	AGG	+	ACUGUAUGUUUAGAGUGUUC	5095
CTGTATGTTTAGAGTGTTCA	2002	GGG	+	CUGUAUGUUUAGAGUGUUCA	5096
GTTTAGAGTGTTCAGGGAAA	2003	AGG	+	GUUUAGAGUGUUCAGGGAAA	5097
TAGAGTGTTCAGGGAAAAGG	2004	AGG	+	UAGAGUGUUCAGGGAAAAGG	5098
AGGTCATTTGCAGAGCAGAG	2005	AGG	-	AGGUCAUUUGCAGAGCAGAG	5099
ATTCGTCTTATCTGAGTGGC	2006	AGG	-	AUUCGUCUUAUCUGAGUGGC	5100
GTGTATTCGTCTTATCTGAG	2007	TGG	-	GUGUAUUCGUCUUAUCUGAG	5101
CATGAATATAGAAGAAACAG	2008	AGG	-	CAUGAAUAUAGAAGAAACAG	5102
AATAAAAGACACAAGACTGC	2009	TGG	-	AAUAAAAGACACAAGACUGC	5103
CTAATAATATTTCTAGTGTC	2010	TGG	+	CUAAUAAUAUUUCUAGUGUC	5104
CTTGAGATTTTATTTTCACA	2011	AGG	-	CUUGAGAUUUUAUUUUCACA	5105
CTTGTGAAAATAAAATCTCA	2012	AGG	+	CUUGUGAAAAUAAAAUCUCA	5106
AATAAAATCTCAAGGTCATA	2013	CGG	+	AAUAAAAUCUCAAGGUCAUA	5107
TACGGCAAACACAAAGAAAC	2014	AGG	+	UACGGCAAACACAAAGAAAC	5108
GTCTTCAGACACTCCAGAAG	2015	AGG	+	GUCUUCAGACACUCCAGAAG	5109
TCTTCAGACACTCCAGAAGA	2016	GGG	+	UCUUCAGACACUCCAGAAGA	5110
CGAGATCTGATGCCCTCTTC	2017	TGG	-	CGAGAUCUGAUGCCCUCUUC	5111
GAGGGCATCAGATCTCGTTA	2018	CGG	+	GAGGGCAUCAGAUCUCGUUA	5112
GCATCAGATCTCGTTACGGA	2019	TGG	+	GCAUCAGAUCUCGUUACGGA	5113
GATGGTTGTGAGCCACCATG	2020	TGG	+	GAUGGUUGUGAGCCACCAUG	5114
GTGAGCCACCATGTGGTTGC	2021	TGG	+	GUGAGCCACCAUGUGGUUGC	5115
TGAGCCACCATGTGGTTGCT	2022	GGG	+	UGAGCCACCAUGUGGUUGCU	5116
AAATCCCAGCAACCACATGG	2023	TGG	-	AAAUCCCAGCAACCACAUGG	5117
TTCAAATCCCAGCAACCACA	2024	TGG	-	UUCAAAUCCCAGCAACCACA	5118
GGATTTGAACTTCAGACCTT	2025	CGG	+	GGAUUUGAACUUCAGACCUU	5119
CAGACCTTCGGAAGAGCAGT	2026	CGG	+	CAGACCUUCGGAAGAGCAGU	5120
AGACCTTCGGAAGAGCAGTC	2027	GGG	+	AGACCUUCGGAAGAGCAGUC	5121
GCACCCGACTGCTCTTCCGA	2028	AGG	-	GCACCCGACUGCUCUUCCGA	5122
GGCTGGTGAGATGGCTCAGT	2029	GGG	-	GGCUGGUGAGAUGGCUCAGU	5123
GGGCTGGTGAGATGGCTCAG	2030	TGG	-	GGGCUGGUGAGAUGGCUCAG	5124
TGAGCCATCTCACCAGCCCC	2031	AGG	+	UGAGCCAUCUCACCAGCCCC	5125
AAAACCTGGGGCTGGTGAGA	2032	TGG	-	AAAACCUGGGGCUGGUGAGA	5126
AGAAAAAAAAAACCTGGGGC	2033	TGG	-	AGAAAAAAAAAACCUGGGGC	5127
ACTAAGAAAAAAAAAACCTG	2034	GGG	-	ACUAAGAAAAAAAAAACCUG	5128
AACTAAGAAAAAAAAAACCT	2035	GGG	-	AACUAAGAAAAAAAAAACCU	5129
CAACTAAGAAAAAAAAAACC	2036	TGG	-	CAACUAAGAAAAAAAAAACC	5130
TATTGTTATTCTTTTGAGAC	2037	AGG	+	UAUUGUUAUUCUUUUGAGAC	5131
AGGATCCCACACTGAAACTC	2038	AGG	+	AGGAUCCCACACUGAAACUC	5132
GCTAGCCTGAGTTTCAGTGT	2039	GGG	-	GCUAGCCUGAGUUUCAGUGU	5133
GGCTAGCCTGAGTTTCAGTG	2040	TGG	-	GGCUAGCCUGAGUUUCAGUG	5134
GGCTAGCCTTCAATTTCCTA	2041	TGG	+	GGCUAGCCUUCAAUUUCCUA	5135
TCAAATCCATAGGAAATTGA	2042	AGG	-	UCAAAUCCAUAGGAAAUUGA	5136
TGCTATGAGGTCAAATCCAT	2043	AGG	-	UGCUAUGAGGUCAAAUCCAU	5137
GAAACTGGCTGACTGCTATG	2044	AGG	-	GAAACUGGCUGACUGCUAUG	5138
AGCACTCAGAAGGTGGAAAC	2045	TGG	-	AGCACUCAGAAGGUGGAAAC	5139
AAATCTTAGCACTCAGAAGG	2046	TGG	-	AAAUCUUAGCACUCAGAAGG	5140
TTGAAATCTTAGCACTCAGA	2047	AGG	-	UUGAAAUCUUAGCACUCAGA	5141
GGAATTGGGTGTGGTGGCTC	2048	AGG	-	GGAAUUGGGUGUGGUGGCUC	5142
ATCTTAGGAATTGGGTGTGG	2049	TGG	-	AUCUUAGGAAUUGGGUGUGG	5143
CATATCTTAGGAATTGGGTG	2050	TGG	-	CAUAUCUUAGGAAUUGGGUG	5144
AAAAACATATCTTAGGAATT	2051	GGG	-	AAAAACAUAUCUUAGGAAUU	5145
TAAAAACATATCTTAGGAAT	2052	TGG	-	UAAAAACAUAUCUUAGGAAU	5146
CTTGCTTAAAAACATATCTT	2053	AGG	-	CUUGCUUAAAAACAUAUCUU	5147

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CTAAGATATGTTTTTAAGCA	2054	AGG	+	CUAAGAUAUGUUUUUAAGCA	5148
ATGTTTTTAAGCAAGGTTAT	2055	TGG	+	AUGUUUUUAAGCAAGGUUAU	5149
CACGTCATTGCAAAGGGTTA	2056	AGG	-	CACGUCAUUGCAAAGGGUUA	5150
ACCCTTTGCAATGACGTGTC	2057	AGG	+	ACCCUUUGCAAUGACGUGUC	5151
TCCTGACACGTCATTGCAAA	2058	GGG	-	UCCUGACACGUCAUUGCAAA	5152
TTCCTGACACGTCATTGCAA	2059	AGG	-	UUCCUGACACGUCAUUGCAA	5153
GACAACTGGAAAAAAAAAAA	2060	AGG	-	GACAACUGGAAAAAAAAAAA	5154
TTTTTTTTTTTCCAGTTGTC	2061	AGG	+	UUUUUUUUUUUCCAGUUGUC	5155
TTTTTTCCAGTTGTCAGGCC	2062	TGG	+	UUUUUUCCAGUUGUCAGGCC	5156
CCAGTTGTCAGGCCTGGCAA	2063	TGG	+	CCAGUUGUCAGGCCUGGCAA	5157
CCATTGCCAGGCCTGACAAC	2064	TGG	-	CCAUUGCCAGGCCUGACAAC	5158
CAGGCCTGGCAATGGAGCCC	2065	AGG	+	CAGGCCUGGCAAUGGAGCCC	5159
AGGCCTGGCAATGGAGCCCA	2066	GGG	+	AGGCCUGGCAAUGGAGCCCA	5160
GGGCCCTGGGCTCCATTGCC	2067	AGG	-	GGGCCCUGGGCUCCAUUGCC	5161
TTTAGCAAGCACAGGGCCCT	2068	GGG	-	UUUAGCAAGCACAGGGCCCU	5162
GTTTAGCAAGCACAGGGCCC	2069	TGG	-	GUUUAGCAAGCACAGGGCCC	5163
GCCCTGTGCTTGCTAAACGA	2070	TGG	+	GCCCUGUGCUUGCUAAACGA	5164
GCCATCGTTTAGCAAGCACA	2071	GGG	-	GCCAUCGUUUAGCAAGCACA	5165
AGCCATCGTTTAGCAAGCAC	2072	AGG	-	AGCCAUCGUUUAGCAAGCAC	5166
GCTGGGTATATATAACTTAG	2073	GGG	-	GCUGGGUAUAUAUAACUUAG	5167
AGCTGGGTATATATAACTTA	2074	GGG	-	AGCUGGGUAUAUAUAACUUA	5168
AAGCTGGGTATATATAACTT	2075	AGG	-	AAGCUGGGUAUAUAUAACUU	5169
ATATATACCCAGCTTATCCC	2076	AGG	+	AUAUAUACCCAGCUUAUCCC	5170
GAAAGATCCTGGGATAAGCT	2077	GGG	-	GAAAGAUCCUGGGAUAAGCU	5171
AGAAAGATCCTGGGATAAGC	2078	TGG	-	AGAAAGAUCCUGGGAUAAGC	5172
GAAAGTCTGAGAAAGATCCT	2079	GGG	-	GAAAGUCUGAGAAAGAUCCU	5173
AGAAAGTCTGAGAAAGATCC	2080	TGG	-	AGAAAGUCUGAGAAAGAUCC	5174
CTATCGATGTTGCTTCTCTT	2081	TGG	+	CUAUCGAUGUUGCUUCUCUU	5175
CTTTTTGTGAGAAAAGAGCA	2082	AGG	-	CUUUUUGUGAGAAAAGAGCA	5176
TCTAAGCAAGAACCCTTGTC	2083	TGG	+	UCUAAGCAAGAACCCUUGUC	5177
ATCTCTCTGACTCCAGACAA	2084	GGG	-	AUCUCUCUGACUCCAGACAA	5178
TATCTCTCTGACTCCAGACA	2085	AGG	-	UAUCUCUCUGACUCCAGACA	5179
GTCAGAGAGATAGCTTAGTC	2086	TGG	+	GUCAGAGAGAUAGCUUAGUC	5180
TTTAAACAAGAAAAGTTCTG	2087	GGG	-	UUUAAACAAGAAAAGUUCUG	5181
TTTTAAACAAGAAAAGTTCT	2088	GGG	-	UUUUAAACAAGAAAAGUUCU	5182
TTTTTAAACAAGAAAAGTTC	2089	TGG	-	UUUUUAAACAAGAAAAGUUC	5183
CAAACAAACAAACAAAAACT	2090	AGG	+	CAAACAAACAAACAAAAACU	5184
CAAAAACTAGGCATGACAGC	2091	TGG	+	CAAAAACUAGGCAUGACAGC	5185
ACTAGGCATGACAGCTGGAG	2092	AGG	+	ACUAGGCAUGACAGCUGGAG	5186
AGGCATGACAGCTGGAGAGG	2093	TGG	+	AGGCAUGACAGCUGGAGAGG	5187
ATTAACAGCACTTGTTAAAG	2094	AGG	+	AUUAACAGCACUUGUUAAAG	5188
TGTTAAAGAGGACCTCAGCT	2095	TGG	+	UGUUAAAGAGGACCUCAGCU	5189
AGGACCTCAGCTTGGTTCCC	2096	AGG	+	AGGACCUCAGCUUGGUUCCC	5190
GGACCTCAGCTTGGTTCCCA	2097	GGG	+	GGACCUCAGCUUGGUUCCCA	5191
GAGCCCTGGGAACCAAGCTG	2098	AGG	-	GAGCCCUGGGAACCAAGCUG	5192
AACTGGAGTTATAGAGCCCT	2099	GGG	-	AACUGGAGUUAUAGAGCCCU	5193
GAACTGGAGTTATAGAGCCC	2100	TGG	-	GAACUGGAGUUAUAGAGCCC	5194
GGCTCTATAACTCCAGTTCC	2101	AGG	+	GGCUCUAUAACUCCAGUUCC	5195
GCTCTATAACTCCAGTTCCA	2102	GGG	+	GCUCUAUAACUCCAGUUCCA	5196
GCTGTCTGAGGCCCTGGAAC	2103	TGG	-	GCUGUCUGAGGCCCUGGAAC	5197
CAGGAGGCTGTCTGAGGCCC	2104	TGG	-	CAGGAGGCUGUCUGAGGCCC	5198
AGGCTACAGGAGGCTGTCTG	2105	AGG	-	AGGCUACAGGAGGCUGUCUG	5199
ATGCATGAAGAGGCTACAGG	2106	AGG	-	AUGCAUGAAGAGGCUACAGG	5200
CTGATGCATGAAGAGGCTAC	2107	AGG	-	CUGAUGCAUGAAGAGGCUAC	5201
GCCTCTTCATGCATCAGACA	2108	TGG	+	GCCUCUUCAUGCAUCAGACA	5202
ACCATGTCTGATGCATGAAG	2109	AGG	-	ACCAUGUCUGAUGCAUGAAG	5203
GACATGGTCCATATGCATGC	2110	AGG	+	GACAUGGUCCAUAUGCAUGC	5204
GTGTTTGACCTGCATGCATA	2111	TGG	-	GUGUUUGACCUGCAUGCAUA	5205

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AAAAATAAAAGTCTAAAAAA	2112	AGG	+	AAAAAUAAAAGUCUAAAAAA	5206
CATGCTATAATCCCAGTGCT	2113	AGG	+	CAUGCUAUAAUCCCAGUGCU	5207
ATGCTATAATCCCAGTGCTA	2114	GGG	+	AUGCUAUAAUCCCAGUGCUA	5208
CTATAATCCCAGTGCTAGGG	2115	AGG	+	CUAUAAUCCCAGUGCUAGGG	5209
ACATTTGCCTCCCTAGCACT	2116	GGG	-	ACAUUUGCCUCCCUAGCACU	5210
GACATTTGCCTCCCTAGCAC	2117	TGG	-	GACAUUUGCCUCCCUAGCAC	5211
GTGCTAGGGAGGCAAATGTC	2118	TGG	+	GUGCUAGGGAGGCAAAUGUC	5212
GGCAAATGTCTGGACCTTGT	2119	CGG	+	GGCAAAUGUCUGGACCUUGU	5213
AATGTCTGGACCTTGTCGGT	2120	CGG	+	AAUGUCUGGACCUUGUCGGU	5214
GACTGACTGGCCGACCGACA	2121	AGG	-	GACUGACUGGCCGACCGACA	5215
TGACTGGCTGGCTGACTGAC	2122	TGG	-	UGACUGGCUGGCUGACUGAC	5216
GCTAGGCTAGACTGACTGGC	2123	TGG	-	GCUAGGCUAGACUGACUGGC	5217
CTATGCTAGGCTAGACTGAC	2124	TGG	-	CUAUGCUAGGCUAGACUGAC	5218
CTAGCCTAGCATAGCCTACT	2125	AGG	+	CUAGCCUAGCAUAGCCUACU	5219
CACACCTAGTAGGCTATGCT	2126	AGG	-	CACACCUAGUAGGCUAUGCU	5220
TGGGCTGGAGCACACCTAGT	2127	AGG	-	UGGGCUGGAGCACACCUAGU	5221
GACAAGGTCTCTCATTGGGC	2128	TGG	-	GACAAGGUCUCUCAUUGGGC	5222
TAGAGACAAGGTCTCTCATT	2129	GGG	-	UAGAGACAAGGUCUCUCAUU	5223
TTAGAGACAAGGTCTCTCAT	2130	TGG	-	UUAGAGACAAGGUCUCUCAU	5224
AGACCTTGTCTCTAAAAAAA	2131	AGG	+	AGACCUUGUCUCUAAAAAAA	5225
GACCTTGTCTCTAAAAAAAA	2132	GGG	+	GACCUUGUCUCUAAAAAAAA	5226
TACCCTTTTTTTTAGAGACA	2133	AGG	-	UACCCUUUUUUUUAGAGACA	5227
GGTAGAAAGAAAAGACAAAA	2134	TGG	+	GGUAGAAAGAAAAGACAAAA	5228
GACAAAATGGATGTCTCCTG	2135	AGG	+	GACAAAAUGGAUGUCUCCUG	5229
CTCCTGAGGAATGATACCCA	2136	CGG	+	CUCCUGAGGAAUGAUACCCA	5230
ATCCGTGGGTATCATTCCTC	2137	AGG	-	AUCCGUGGGUAUCAUUCCUC	5231
GGACAATTGTGGGTATCCGT	2138	GGG	-	GGACAAUUGUGGGUAUCCGU	5232
AGGACAATTGTGGGTATCCG	2139	TGG	-	AGGACAAUUGUGGGUAUCCG	5233
GGATACCCACAATTGTCCTC	2140	TGG	+	GGAUACCCACAAUUGUCCUC	5234
GGAGACCAGAGGACAATTGT	2141	GGG	-	GGAGACCAGAGGACAAUUGU	5235
CGGAGACCAGAGGACAATTG	2142	TGG	-	CGGAGACCAGAGGACAAUUG	5236
GTATTGCACACGGAGACCAG	2143	AGG	-	GUAUUGCACACGGAGACCAG	5237
ACATGGGTTTGTATTGCACA	2144	CGG	-	ACAUGGGUUUGUAUUGCACA	5238
TGTTGCAAATATTCAGACAT	2145	GGG	-	UGUUGCAAAUAUUCAGACAU	5239
CTGTTGCAAATATTCAGACA	2146	TGG	-	CUGUUGCAAAUAUUCAGACA	5240
CATGTCTGAATATTTGCAAC	2147	AGG	+	CAUGUCUGAAUAUUUGCAAC	5241
ATGTCTGAATATTTGCAACA	2148	GGG	+	AUGUCUGAAUAUUUGCAACA	5242
AGCACAGCTTTACTAGATGA	2149	GGG	-	AGCACAGCUUUACUAGAUGA	5243
AAGCACAGCTTTACTAGATG	2150	AGG	-	AAGCACAGCUUUACUAGAUG	5244
CATCTAGTAAAGCTGTGCTT	2151	TGG	+	CAUCUAGUAAAGCUGUGCUU	5245
GAAAAATAAGACAGATGGGA	2152	GGG	-	GAAAAAUAAGACAGAUGGGA	5246
AGAAAAATAAGACAGATGGG	2153	AGG	-	AGAAAAAUAAGACAGAUGGG	5247
AGTAGAAAAATAAGACAGAT	2154	GGG	-	AGUAGAAAAAUAAGACAGAU	5248
CAGTAGAAAAATAAGACAGA	2155	TGG	-	CAGUAGAAAAAUAAGACAGA	5249
CATCTGTCTTATTTTTCTAC	2156	TGG	+	CAUCUGUCUUAUUUUUCUAC	5250
ATTTTTCTACTGGTGTGCTA	2157	AGG	+	AUUUUUCUACUGGUGUGCUA	5251
GTGCTAAGGCACCATGACCA	2158	AGG	+	GUGCUAAGGCACCAUGACCA	5252
TCTCTAAGTTGCCTTGGTCA	2159	TGG	-	UCUCUAAGUUGCCUUGGUCA	5253
TCTTCTTCTCTAAGTTGCCT	2160	TGG	-	UCUUCUUCUCUAAGUUGCCU	5254
GAAGAAGAAACAGTTTATTG	2161	AGG	+	GAAGAAGAAACAGUUUAUUG	5255
AAGAAGAAACAGTTTATTGA	2162	GGG	+	AAGAAGAAACAGUUUAUUGA	5256
TTGAGGGTTTATAGTTATAG	2163	AGG	+	UUGAGGGUUUAUAGUUAUAG	5257
TGAGGGTTTATAGTTATAGA	2164	GGG	+	UGAGGGUUUAUAGUUAUAGA	5258
GTTTATAGTTATAGAGGGTA	2165	AGG	+	GUUUAUAGUUAUAGAGGGUA	5259
TAGTTATAGAGGGTAAGGCA	2166	AGG	+	UAGUUAUAGAGGGUAAGGCA	5260
TAGAGGGTAAGGCAAGGACT	2167	TGG	+	UAGAGGGUAAGGCAAGGACU	5261
TAAGGCAAGGACTTGGTAGC	2168	AGG	+	UAAGGCAAGGACUUGGUAGC	5262
GCAAGGACTTGGTAGCAGGC	2169	AGG	+	GCAAGGACUUGGUAGCAGGC	5263

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GGACTTGGTAGCAGGCAGGC	2170	AGG	+	GGACUUGGUAGCAGGCAGGC	5264
TTGGTAGCAGGCAGGCAGGC	2171	AGG	+	UUGGUAGCAGGCAGGCAGGC	5265
AGCAGGCAGGCAGGCAGGCA	2172	TGG	+	AGCAGGCAGGCAGGCAGGCA	5266
CAGGCAGGCAGGCATGGTAC	2173	TGG	+	CAGGCAGGCAGGCAUGGUAC	5267
CATGGTACTGGTGTAGTAGC	2174	TGG	+	CAUGGUACUGGUGUAGUAGC	5268
ATGGTACTGGTGTAGTAGCT	2175	GGG	+	AUGGUACUGGUGUAGUAGCU	5269
GGAGCTTGTATCTTGAGACA	2176	CGG	+	GGAGCUUGUAUCUUGAGACA	5270
AAAGCTGAGAGATAGCTAAG	2177	TGG	+	AAAGCUGAGAGAUAGCUAAG	5271
AAGCTGAGAGATAGCTAAGT	2178	GGG	+	AAGCUGAGAGAUAGCUAAGU	5272
GAGAGATAGCTAAGTGGGCC	2179	TGG	+	GAGAGAUAGCUAAGUGGGCC	5273
AGGTTTCAAAAGCTCACACC	2180	AGG	-	AGGUUUCAAAAGCUCACACC	5274
TTTCACTGGGGACAGCTTTG	2181	AGG	-	UUUCACUGGGGACAGCUUUG	5275
TTGATGGAGGCATTTCACTG	2182	GGG	-	UUGAUGGAGGCAUUUCACUG	5276
GTTGATGGAGGCATTTCACT	2183	GGG	-	GUUGAUGGAGGCAUUUCACU	5277
TGTTGATGGAGGCATTTCAC	2184	TGG	-	UGUUGAUGGAGGCAUUUCAC	5278
GTGAAATGCCTCCATCAACA	2185	AGG	+	GUGAAAUGCCUCCAUCAACA	5279
AGGTGTGGCCTTGTTGATGG	2186	AGG	-	AGGUGUGGCCUUGUUGAUGG	5280
GTTAGGTGTGGCCTTGTTGA	2187	TGG	-	GUUAGGUGUGGCCUUGUUGA	5281
TGTTTGGGAAGGGTTAGGTG	2188	TGG	-	UGUUUGGGAAGGGUUAGGUG	5282
AGAACTGTTTGGGAAGGGTT	2189	AGG	-	AGAACUGUUUGGGAAGGGUU	5283
TTGGTAGAACTGTTTGGGAA	2190	GGG	-	UUGGUAGAACUGUUUGGGAA	5284
GTTGGTAGAACTGTTTGGGA	2191	AGG	-	GUUGGUAGAACUGUUUGGGA	5285
TCCCAAACAGTTCTACCAAC	2192	TGG	+	UCCCAAACAGUUCUACCAAC	5286
CCCAAACAGTTCTACCAACT	2193	GGG	+	CCCAAACAGUUCUACCAACU	5287
CCCAGTTGGTAGAACTGTTT	2194	GGG	-	CCCAGUUGGUAGAACUGUUU	5288
TCCCAGTTGGTAGAACTGTT	2195	TGG	-	UCCCAGUUGGUAGAACUGUU	5289
ATGAATGCTTGGTTCCCAGT	2196	TGG	-	AUGAAUGCUUGGUUCCCAGU	5290
CTGAGGCTCATATGAATGCT	2197	TGG	-	CUGAGGCUCAUAUGAAUGCU	5291
CAAGCATTCATATGAGCCTC	2198	AGG	+	CAAGCAUUCAUAUGAGCCUC	5292
AAGCATTCATATGAGCCTCA	2199	GGG	+	AAGCAUUCAUAUGAGCCUCA	5293
AGCATTCATATGAGCCTCAG	2200	GGG	+	AGCAUUCAUAUGAGCCUCAG	5294
TGAATGAGACTGCTCCCCTG	2201	AGG	-	UGAAUGAGACUGCUCCCCUG	5295
GTACTCAGTACACTGCCCCA	2202	TGG	+	GUACUCAGUACACUGCCCCA	5296
TACTCAGTACACTGCCCCAT	2203	GGG	+	UACUCAGUACACUGCCCCAU	5297
TTAGAGGACTTCTGCCCATG	2204	GGG	-	UUAGAGGACUUCUGCCCAUG	5298
TTTAGAGGACTTCTGCCCAT	2205	GGG	-	UUUAGAGGACUUCUGCCCAU	5299
GTTTAGAGGACTTCTGCCCA	2206	TGG	-	GUUUAGAGGACUUCUGCCCA	5300
ATGGGCAGAAGTCCTCTAAA	2207	CGG	+	AUGGGCAGAAGUCCUCUAAA	5301
ACACATTAGTAACCGTTTAG	2208	AGG	-	ACACAUUAGUAACCGUUUAG	5302
TATCCCTCACCATACTTAGA	2209	AGG	+	UAUCCCUCACCAUACUUAGA	5303
TTTCCTTCTAAGTATGGTGA	2210	GGG	-	UUUCCUUCUAAGUAUGGUGA	5304
GTTTCCTTCTAAGTATGGTG	2211	AGG	-	GUUUCCUUCUAAGUAUGGUG	5305
GGCTTGTTTCCTTCTAAGTA	2212	TGG	-	GGCUUGUUUCCUUCUAAGUA	5306
GGAAACAAGCCATCCCAAAA	2213	TGG	+	GGAAACAAGCCAUCCCAAAA	5307
TCATGCTATCCATTTTGGGA	2214	TGG	-	UCAUGCUAUCCAUUUUGGGA	5308
TGAGTCATGCTATCCATTTT	2215	GGG	-	UGAGUCAUGCUAUCCAUUUU	5309
CTGAGTCATGCTATCCATTT	2216	TGG	-	CUGAGUCAUGCUAUCCAUUU	5310
TTGCTCTGGGTGAAGTACAC	2217	AGG	-	UUGCUCUGGGUGAAGUACAC	5311
TACTTCACCCAGAGCAAATG	2218	TGG	+	UACUUCACCCAGAGCAAAUG	5312
ACCCAGAGCAAATGTGGATA	2219	CGG	+	ACCCAGAGCAAAUGUGGAUA	5313
ACCGTATCCACATTTGCTCT	2220	GGG	-	ACCGUAUCCACAUUUGCUCU	5314
CACCGTATCCACATTTGCTC	2221	TGG	-	CACCGUAUCCACAUUUGCUC	5315
CAGAGCAAATGTGGATACGG	2222	TGG	+	CAGAGCAAAUGUGGAUACGG	5316
AGAGCAAATGTGGATACGGT	2223	GGG	+	AGAGCAAAUGUGGAUACGGU	5317
GTGGATACGGTGGGAAACAG	2224	AGG	+	GUGGAUACGGUGGGAAACAG	5318
GGGAAACAGAGGACAGTGAT	2225	AGG	+	GGGAAACAGAGGACAGUGAU	5319
AGGACAGTGATAGGACACAA	2226	AGG	+	AGGACAGUGAUAGGACACAA	5320
GTCTCAGTTTCTAGTTCAGA	2227	TGG	+	GUCUCAGUUUCUAGUUCAGA	5321

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AGACATAAACCAACACACAT	2228	AGG	+	AGACAUAAACCAACACACAU	5322
TGTATCTTTCCTATGTGTGT	2229	TGG	-	UGUAUCUUUCCUAUGUGUGU	5323
ATAGGAAAGATACACTCCAC	2230	TGG	+	AUAGGAAAGAUACACUCCAC	5324
AGATACACTCCACTGGACAG	2231	TGG	+	AGAUACACUCCACUGGACAG	5325
GATACACTCCACTGGACAGT	2232	GGG	+	GAUACACUCCACUGGACAGU	5326
CATGGGCTCCCACTGTCCAG	2233	TGG	-	CAUGGGCUCCCACUGUCCAG	5327
CAGTGGGAGCCCATGCACAA	2234	AGG	+	CAGUGGGAGCCCAUGCACAA	5328
GCCCATGCACAAAGGTTCTT	2235	TGG	+	GCCCAUGCACAAAGGUUCUU	5329
GCCAAAGAACCTTTGTGCAT	2236	GGG	-	GCCAAAGAACCUUUGUGCAU	5330
AGCCAAAGAACCTTTGTGCA	2237	TGG	-	AGCCAAAGAACCUUUGUGCA	5331
TGACAGCAGTTTCTTATTAT	2238	TGG	+	UGACAGCAGUUUCUUAUUAU	5332
GACAGCAGTTTCTTATTATT	2239	GGG	+	GACAGCAGUUUCUUAUUAUU	5333
GATGAGCTTTGTTTCTGCCC	2240	TGG	+	GAUGAGCUUUGUUUCUGCCC	5334
ATGAGCTTTGTTTCTGCCCT	2241	GGG	+	AUGAGCUUUGUUUCUGCCCU	5335
CCCTGGGTGAGAGTTTATTT	2242	AGG	+	CCCUGGGUGAGAGUUUAUUU	5336
CCTAAATAAACTCTCACCCA	2243	GGG	-	CCUAAAUAAACUCUCACCCA	5337
TCCTAAATAAACTCTCACCC	2244	AGG	-	UCCUAAAUAAACUCUCACCC	5338
CACACTAAGACAACCACTGA	2245	TGG	+	CACACUAAGACAACCACUGA	5339
ACTTTGTTCTAGGCCATCAG	2246	TGG	-	ACUUUGUUCUAGGCCAUCAG	5340
CAGTGCTCTGACTTTGTTCT	2247	AGG	-	CAGUGCUCUGACUUUGUUCU	5341
AGTCAGAGCACTGTGCGTTG	2248	TGG	+	AGUCAGAGCACUGUGCGUUG	5342
CACTGTGCGTTGTGGATCTT	2249	AGG	+	CACUGUGCGUUGUGGAUCUU	5343
GATGCTTTAATCATCATGAA	2250	TGG	-	GAUGCUUUAAUCAUCAUGAA	5344
ACTAACACATTTTAATAGGA	2251	TGG	-	ACUAACACAUUUUAAUAGGA	5345
ATGGACTAACACATTTTAAT	2252	AGG	-	AUGGACUAACACAUUUUAAU	5346
AAAATGTGTTAGTCCATTTT	2253	TGG	+	AAAAUGUGUUAGUCCAUUUU	5347
AAATGTGTTAGTCCATTTTT	2254	GGG	+	AAAUGUGUUAGUCCAUUUUU	5348
AATGTGTTAGTCCATTTTTG	2255	GGG	+	AAUGUGUUAGUCCAUUUUUG	5349
AGTAAACATAACCCCAAAAA	2256	TGG	-	AGUAAACAUAACCCCAAAAA	5350
GGGTTATGTTTACTATACAA	2257	AGG	+	GGGUUAUGUUUACUAUACAA	5351
TTATGTTTACTATACAAAGG	2258	TGG	+	UUAUGUUUACUAUACAAAGG	5352
GTTTACTATACAAAGGTGGA	2259	AGG	+	GUUUACUAUACAAAGGUGGA	5353
TTTACTATACAAAGGTGGAA	2260	GGG	+	UUUACUAUACAAAGGUGGAA	5354
TTACTATACAAAGGTGGAAG	2261	GGG	+	UUACUAUACAAAGGUGGAAG	5355
CAAAGGTGGAAGGGGTTATC	2262	TGG	+	CAAAGGUGGAAGGGGUUAUC	5356
GTTATCTGGCCCCATCTTAC	2263	AGG	+	GUUAUCUGGCCCCAUCUUAC	5357
ACACAGTTACCTGTAAGATG	2264	GGG	-	ACACAGUUACCUGUAAGAUG	5358
GACACAGTTACCTGTAAGAT	2265	GGG	-	GACACAGUUACCUGUAAGAU	5359
GGACACAGTTACCTGTAAGA	2266	TGG	-	GGACACAGUUACCUGUAAGA	5360
AGGTAACTGTGTCCCTTTTG	2267	TGG	+	AGGUAACUGUGUCCCUUUUG	5361
TGGTTTTTATATCCACAAAA	2268	GGG	-	UGGUUUUUAUAUCCACAAAA	5362
ATGGTTTTTATATCCACAAA	2269	AGG	-	AUGGUUUUUAUAUCCACAAA	5363
AATAAAATTGCAGTATCTGA	2270	TGG	-	AAUAAAAUUGCAGUAUCUGA	5364
TATTTTTGATTATGTGTCTG	2271	AGG	+	UAUUUUUGAUUAUGUGUCUG	5365
ATTTTTGATTATGTGTCTGA	2272	GGG	+	AUUUUUGAUUAUGUGUCUGA	5366
CAGTATGCACATCTGCATGC	2273	AGG	+	CAGUAUGCACAUCUGCAUGC	5367
CATCTGCATGCAGGTGCCTG	2274	TGG	+	CAUCUGCAUGCAGGUGCCUG	5368
CAGGTGCCTGTGGAAGCCTG	2275	TGG	+	CAGGUGCCUGUGGAAGCCUG	5369
ATGTCTCCACAGGCTTCCAC	2276	AGG	-	AUGUCUCCACAGGCUUCCAC	5370
AGGTGATCTGATGTCTCCAC	2277	AGG	-	AGGUGAUCUGAUGUCUCCAC	5371
GACATCAGATCACCTGAAGC	2278	TGG	+	GACAUCAGAUCACCUGAAGC	5372
TCACCTGAAGCTGGAGTTTC	2279	AGG	+	UCACCUGAAGCUGGAGUUUC	5373
CTGCCTGAAACTCCAGCTTC	2280	AGG	-	CUGCCUGAAACUCCAGCUUC	5374
AGTTTTATGCCACCAGACAC	2281	TGG	+	AGUUUUAUGCCACCAGACAC	5375
TTCTCAGCACCAGTGTCTGG	2282	TGG	-	UUCUCAGCACCAGUGUCUGG	5376
CTATTCTCAGCACCAGTGTC	2283	TGG	-	CUAUUCUCAGCACCAGUGUC	5377
ATAAAATATACTGCTTTTGC	2284	AGG	-	AUAAAAUAUACUGCUUUUGC	5378
GTTGCTTTTGGCTGGAGAGA	2285	TGG	-	GUUGCUUUUGGCUGGAGAGA	5379

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TTTTAAAGGTTGCTTTTGGC	2286	TGG	-	UUUUAAAGGUUGCUUUUGGC	5380
CAGCTTTTAAAGGTTGCTTT	2287	TGG	-	CAGCUUUUAAAGGUUGCUUU	5381
AAAGCAACCTTTAAAAGCTG	2288	TGG	+	AAAGCAACCUUUAAAAGCUG	5382
ACATAAACCACAGCTTTTAA	2289	AGG	-	ACAUAAACCACAGCUUUUAA	5383
CTCTAAGTGGATGAATTAAA	2290	TGG	-	CUCUAAGUGGAUGAAUUAAA	5384
CATTTAATTCATCCACTTAG	2291	AGG	+	CAUUUAAUUCAUCCACUUAG	5385
ATTTAATTCATCCACTTAGA	2292	GGG	+	AUUUAAUUCAUCCACUUAGA	5386
ATTGAAGTGTACCCTCTAAG	2293	TGG	-	AUUGAAGUGUACCCUCUAAG	5387
AAAATATGCTTACAGATCTG	2294	TGG	+	AAAAUAUGCUUACAGAUCUG	5388
AAATATGCTTACAGATCTGT	2295	GGG	+	AAAUAUGCUUACAGAUCUGU	5389
TGCTAAAAGGGTTCTAAAAT	2296	TGG	-	UGCUAAAAGGGUUCUAAAAU	5390
TAATATCTGTAGTGCTAAAA	2297	GGG	-	UAAUAUCUGUAGUGCUAAAA	5391
TTAATATCTGTAGTGCTAAA	2298	AGG	-	UUAAUAUCUGUAGUGCUAAA	5392
GCTGGGGGCTGGGGAGAATA	2299	GGG	-	GCUGGGGGCUGGGGAGAAUA	5393
AGCTGGGGGCTGGGGAGAAT	2300	AGG	-	AGCUGGGGGCUGGGGAGAAU	5394
GGGACTGGAGCTGGGGGCTG	2301	GGG	-	GGGACUGGAGCUGGGGGCUG	5395
AGGGACTGGAGCTGGGGGCT	2302	GGG	-	AGGGACUGGAGCUGGGGGCU	5396
CAGGGACTGGAGCTGGGGGC	2303	TGG	-	CAGGGACUGGAGCUGGGGGC	5397
CAGCCCCCAGCTCCAGTCCC	2304	TGG	+	CAGCCCCCAGCUCCAGUCCC	5398
ATGCCAGGGACTGGAGCTGG	2305	GGG	-	AUGCCAGGGACUGGAGCUGG	5399
GATGCCAGGGACTGGAGCTG	2306	GGG	-	GAUGCCAGGGACUGGAGCUG	5400
GGATGCCAGGGACTGGAGCT	2307	GGG	-	GGAUGCCAGGGACUGGAGCU	5401
TGGATGCCAGGGACTGGAGC	2308	TGG	-	UGGAUGCCAGGGACUGGAGC	5402
GATTTGTGGATGCCAGGGAC	2309	TGG	-	GAUUUGUGGAUGCCAGGGAC	5403
AAGGGGATTTGTGGATGCCA	2310	GGG	-	AAGGGGAUUUGUGGAUGCCA	5404
GAAGGGGATTTGTGGATGCC	2311	AGG	-	GAAGGGGAUUUGUGGAUGCC	5405
GATGGCAGGAAGGGGATTTG	2312	TGG	-	GAUGGCAGGAAGGGGAUUUG	5406
AATCTATAGATGGCAGGAAG	2313	GGG	-	AAUCUAUAGAUGGCAGGAAG	5407
GAATCTATAGATGGCAGGAA	2314	GGG	-	GAAUCUAUAGAUGGCAGGAA	5408
TGAATCTATAGATGGCAGGA	2315	AGG	-	UGAAUCUAUAGAUGGCAGGA	5409
GAGGTGAATCTATAGATGGC	2316	AGG	-	GAGGUGAAUCUAUAGAUGGC	5410
AGAAGAGGTGAATCTATAGA	2317	TGG	-	AGAAGAGGUGAAUCUAUAGA	5411
TTCAGTGTAAAGTCTAGAAG	2318	AGG	-	UUCAGUGUAAAGUCUAGAAG	5412
TTCTAGACTTTACACTGAAA	2319	TGG	+	UUCUAGACUUUACACUGAAA	5413
AAATGGTATTACACAACATG	2320	TGG	+	AAAUGGUAUUACACAACAUG	5414
TTGCTTGCCGTGTGTCTGTG	2321	AGG	+	UUGCUUGCCGUGUGUCUGUG	5415
AGATGAACCTCACAGACACA	2322	CGG	-	AGAUGAACCUCACAGACACA	5416
TCATCTGTGTTGAGCATGAA	2323	AGG	+	UCAUCUGUGUUGAGCAUGAA	5417
TAGGCGACAGGCATATTCAT	2324	GGG	-	UAGGCGACAGGCAUAUUCAU	5418
TTAGGCGACAGGCATATTCA	2325	TGG	-	UUAGGCGACAGGCAUAUUCA	5419
GTGTTGCTATTTTAGGCGAC	2326	AGG	-	GUGUUGCUAUUUUAGGCGAC	5420
TGTGAAAGTGTTGCTATTTT	2327	AGG	-	UGUGAAAGUGUUGCUAUUUU	5421
CCTTCTTTCTTCTTCCCAAG	2328	AGG	+	CCUUCUUUCUUCUUCCCAAG	5422
CCTCTTGGGAAGAAGAAAGA	2329	AGG	-	CCUCUUGGGAAGAAGAAAGA	5423
CTTCTTTCTTCTTCCCAAGA	2330	GGG	+	CUUCUUUCUUCUUCCCAAGA	5424
GCTGCAATAATGTCCCTCTT	2331	GGG	-	GCUGCAAUAAUGUCCCUCUU	5425
GGCTGCAATAATGTCCCTCT	2332	TGG	-	GGCUGCAAUAAUGUCCCUCU	5426
AGACACAGGAGAAAACTAGC	2333	AGG	-	AGACACAGGAGAAAACUAGC	5427
AGAAACACGAAAAAAGACAC	2334	AGG	-	AGAAACACGAAAAAAGACAC	5428
CGTGTTTCTCAAGTAGATGA	2335	AGG	+	CGUGUUUCUCAAGUAGAUGA	5429
GTGTTTCTCAAGTAGATGAA	2336	GGG	+	GUGUUUCUCAAGUAGAUGAA	5430
TCTCAAGTAGATGAAGGGAC	2337	TGG	+	UCUCAAGUAGAUGAAGGGAC	5431
TTAGGAAACTGACAAAGCAG	2338	GGG	-	UUAGGAAACUGACAAAGCAG	5432
TTTAGGAAACTGACAAAGCA	2339	GGG	-	UUUAGGAAACUGACAAAGCA	5433
ATTTAGGAAACTGACAAAGC	2340	AGG	-	AUUUAGGAAACUGACAAAGC	5434
AATACAGTATTCACTCATTT	2341	AGG	-	AAUACAGUAUUCACUCAUUU	5435
AAATGAGTGAATACTGTATT	2342	TGG	+	AAAUGAGUGAAUACUGUAUU	5436
TATTTTGGTCTTTCTGATTG	2343	GGG	-	UAUUUUGGUCUUUCUGAUUG	5437

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TTATTTTGGTCTTTCTGATT	2344	GGG	-	UUAUUUUGGUCUUUCUGAUU	5438
ATTATTTTGGTCTTTCTGAT	2345	TGG	-	AUUAUUUUGGUCUUUCUGAU	5439
GAGATTATTTTAAATTATTT	2346	TGG	-	GAGAUUAUUUUAAAUUAUUU	5440
ATCTCGTCTCTATATCACTA	2347	AGG	+	AUCUCGUCUCUAUAUCACUA	5441
CTAAGGTATCCTTTTCCACT	2348	TGG	+	CUAAGGUAUCCUUUUCCACU	5442
TAAGGTATCCTTTTCCACTT	2349	GGG	+	UAAGGUAUCCUUUUCCACUU	5443
CTGCATGGCCCAAGTGGAAA	2350	AGG	-	CUGCAUGGCCCAAGUGGAAA	5444
ATTTCTCTGCATGGCCCAAG	2351	TGG	-	AUUUCUCUGCAUGGCCCAAG	5445
GGCATGCTTATTTCTCTGCA	2352	TGG	-	GGCAUGCUUAUUUCUCUGCA	5446
GGGTGGGGTGGGGTCAATCA	2353	AGG	-	GGGUGGGGUGGGGUCAAUCA	5447
CTGGGGGTTGGGGTGGGGTG	2354	GGG	-	CUGGGGGUUGGGGUGGGGUG	5448
ACTGGGGGTTGGGGTGGGGT	2355	GGG	-	ACUGGGGGUUGGGGUGGGGU	5449
CACTGGGGGTTGGGGTGGGG	2356	TGG	-	CACUGGGGGUUGGGGUGGGG	5450
CACCCCACCCCAACCCCCAG	2357	TGG	+	CACCCCACCCCAACCCCCAG	5451
CACCACTGGGGGTTGGGGTG	2358	GGG	-	CACCACUGGGGGUUGGGGUG	5452
TCACCACTGGGGGTTGGGGT	2359	GGG	-	UCACCACUGGGGGUUGGGGU	5453
GTCACCACTGGGGGTTGGGG	2360	TGG	-	GUCACCACUGGGGGUUGGGG	5454
CTTGTCACCACTGGGGGTTG	2361	GGG	-	CUUGUCACCACUGGGGGUUG	5455
CCCAACCCCCAGTGGTGACA	2362	AGG	+	CCCAACCCCCAGUGGUGACA	5456
CCTTGTCACCACTGGGGGTT	2363	GGG	-	CCUUGUCACCACUGGGGGUU	5457
TCCTTGTCACCACTGGGGGT	2364	TGG	-	UCCUUGUCACCACUGGGGGU	5458
GAGGTCCTTGTCACCACTGG	2365	GGG	-	GAGGUCCUUGUCACCACUGG	5459
GGAGGTCCTTGTCACCACTG	2366	GGG	-	GGAGGUCCUUGUCACCACUG	5460
GGGAGGTCCTTGTCACCACT	2367	GGG	-	GGGAGGUCCUUGUCACCACU	5461
GGGGAGGTCCTTGTCACCAC	2368	TGG	-	GGGGAGGUCCUUGUCACCAC	5462
GGTGACAAGGACCTCCCCAG	2369	CGG	+	GGUGACAAGGACCUCCCCAG	5463
AAATGGTTGAGCCGCTGGGG	2370	AGG	-	AAAUGGUUGAGCCGCUGGGG	5464
TTCAAATGGTTGAGCCGCTG	2371	GGG	-	UUCAAAUGGUUGAGCCGCUG	5465
ATTCAAATGGTTGAGCCGCT	2372	GGG	-	AUUCAAAUGGUUGAGCCGCU	5466
TATTCAAATGGTTGAGCCGC	2373	TGG	-	UAUUCAAAUGGUUGAGCCGC	5467
GCTCAACCATTTGAATAAAA	2374	AGG	+	GCUCAACCAUUUGAAUAAAA	5468
AAGTGTCCTTTTTATTCAAA	2375	TGG	-	AAGUGUCCUUUUUAUUCAAA	5469
ATCTTAGATTTGTGCAAAAT	2376	GGG	-	AUCUUAGAUUUGUGCAAAAU	5470
CATCTTAGATTTGTGCAAAA	2377	TGG	-	CAUCUUAGAUUUGUGCAAAA	5471
ACAAATCTAAGATGAGCAAG	2378	TGG	+	ACAAAUCUAAGAUGAGCAAG	5472
GTCACCTGTAAACATGTGCC	2379	TGG	+	GUCACCUGUAAACAUGUGCC	5473
TGCTCCAGGCACATGTTTAC	2380	AGG	-	UGCUCCAGGCACAUGUUUAC	5474
GTAAACATGTGCCTGGAGCA	2381	CGG	+	GUAAACAUGUGCCUGGAGCA	5475
CTCAGGTCGTTCCGTGCTCC	2382	AGG	-	CUCAGGUCGUUCCGUGCUCC	5476
GAGCACGGAACGACCTGAGT	2383	**AGG**	**+**	**GAGCACGGAACGACCUGAGU**	5477
CGACCTGAGTAGGCAGAAAA	2384	AGG	+	CGACCUGAGUAGGCAGAAAA	5478
CCTGAGTAGGCAGAAAAAGG	2385	TGG	+	CCUGAGUAGGCAGAAAAAGG	5479
CCACCTTTTTCTGCCTACTC	2386	AGG	-	CCACCUUUUUCUGCCUACUC	5480
ATTTATGATTTTTCTTTTAA	2387	AGG	+	AUUUAUGAUUUUUCUUUUAA	5481
AGTGAGAAAGGTGGGGGAAA	2388	TGG	-	AGUGAGAAAGGUGGGGGAAA	5482
TTGGAAAGTGAGAAAGGTGG	2389	GGG	-	UUGGAAAGUGAGAAAGGUGG	5483
GTTGGAAAGTGAGAAAGGTG	2390	GGG	-	GUUGGAAAGUGAGAAAGGUG	5484
TGTTGGAAAGTGAGAAAGGT	2391	GGG	-	UGUUGGAAAGUGAGAAAGGU	5485
TTGTTGGAAAGTGAGAAAGG	2392	TGG	-	UUGUUGGAAAGUGAGAAAGG	5486
ATATTGTTGGAAAGTGAGAA	2393	AGG	-	AUAUUGUUGGAAAGUGAGAA	5487
TTTCCAACAATATTATATTC	2394	TGG	+	UUUCCAACAAUAUUAUAUUC	5488
ACACCAGAATATAATATTGT	2395	TGG	-	ACACCAGAAUAUAAUAUUGU	5489
CTTTTATTCCCCAGTTGTTT	2396	TGG	+	CUUUUAUUCCCCAGUUGUUU	5490
TTTAATCACCAAAACAACTG	2397	GGG	-	UUUAAUCACCAAAACAACUG	5491
ATTTAATCACCAAAACAACT	2398	GGG	-	AUUUAAUCACCAAAACAACU	5492
GATTTAATCACCAAAACAAC	2399	TGG	-	GAUUUAAUCACCAAAACAAC	5493
TTTTGGTGATTAAATCATTT	2400	TGG	+	UUUUGGUGAUUAAAUCAUUU	5494
TTTGGTGATTAAATCATTTT	2401	GGG	+	UUUGGUGAUUAAAUCAUUUU	5495

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TTGGTGATTAAATCATTTTG	2402	GGG	+	UUGGUGAUUAAAUCAUUUUG	5496
TGGTGATTAAATCATTTTGG	2403	GGG	+	UGGUGAUUAAAUCAUUUUGG	5497
ACTCTCATTCACTGCTCCCT	2404	TGG	+	ACUCUCAUUCACUGCUCCCU	5498
AAAAAAAACACTGTCACCAA	2405	GGG	-	AAAAAAAACACUGUCACCAA	5499
GAAAAAAAACACTGTCACCA	2406	AGG	-	GAAAAAAAACACUGUCACCA	5500
GCAGAGACAGAGGGAACAGC	2407	AGG	-	GCAGAGACAGAGGGAACAGC	5501
TGAAAATGAGCAGAGACAGA	2408	GGG	-	UGAAAAUGAGCAGAGACAGA	5502
ATGAAAATGAGCAGAGACAG	2409	AGG	-	AUGAAAAUGAGCAGAGACAG	5503
CTGTCTCTGCTCATTTTCAT	2410	AGG	+	CUGUCUCUGCUCAUUUUCAU	5504
TGCTCATTTTCATAGGAATC	2411	TGG	+	UGCUCAUUUUCAUAGGAAUC	5505
ATCTGGCACCTTAGAATCCC	2412	AGG	+	AUCUGGCACCUUAGAAUCCC	5506
GCAGGCAGCCTGGGATTCTA	2413	AGG	-	GCAGGCAGCCUGGGAUUCUA	5507
CATTTGACTGCAGGCAGCCT	2414	GGG	-	CAUUUGACUGCAGGCAGCCU	5508
GCATTTGACTGCAGGCAGCC	2415	TGG	-	GCAUUUGACUGCAGGCAGCC	5509
CCTGCAGTCAAATGCTTGCT	2416	AGG	+	CCUGCAGUCAAAUGCUUGCU	5510
CCTAGCAAGCATTTGACTGC	2417	AGG	-	CCUAGCAAGCAUUUGACUGC	5511
CTGCAGTCAAATGCTTGCTA	2418	GGG	+	CUGCAGUCAAAUGCUUGCUA	5512
CAGTCAAATGCTTGCTAGGG	2419	AGG	+	CAGUCAAAUGCUUGCUAGGG	5513
AGTCAAATGCTTGCTAGGGA	2420	GGG	+	AGUCAAAUGCUUGCUAGGGA	5514
GTCAAATGCTTGCTAGGGAG	2421	GGG	+	GUCAAAUGCUUGCUAGGGAG	5515
TTGCTAGGGAGGGGAGCCAG	2422	TGG	+	UUGCUAGGGAGGGGAGCCAG	5516
TGCTAGGGAGGGGAGCCAGT	2423	GGG	+	UGCUAGGGAGGGGAGCCAGU	5517
TAGGGAGGGGAGCCAGTGGG	2424	TGG	+	UAGGGAGGGGAGCCAGUGGG	5518
AGGGAGGGGAGCCAGTGGGT	2425	GGG	+	AGGGAGGGGAGCCAGUGGGU	5519
GGGAGGGGAGCCAGTGGGTG	2426	GGG	+	GGGAGGGGAGCCAGUGGGUG	5520
GGAGGGGAGCCAGTGGGTGG	2427	GGG	+	GGAGGGGAGCCAGUGGGUGG	5521
TTGCAGGTTCCCCCACCCAC	2428	TGG	-	UUGCAGGUUCCCCCACCCAC	5522
ATTTGGAGTTGATTTCTTGC	2429	AGG	-	AUUUGGAGUUGAUUUCUUGC	5523
AAATCAACTCCAAATTTAAT	2430	AGG	+	AAAUCAACUCCAAAUUUAAU	5524
GAGCTTAGTCCTATTAAATT	2431	TGG	-	GAGCUUAGUCCUAUUAAAUU	5525
CTGCTAATCAGGCATGGTGT	2432	AGG	-	CUGCUAAUCAGGCAUGGUGU	5526
ACCATGCCTGATTAGCAGCT	2433	AGG	+	ACCAUGCCUGAUUAGCAGCU	5527
ACCTAGCTGCTAATCAGGCA	2434	TGG	-	ACCUAGCUGCUAAUCAGGCA	5528
ATGAGACCTAGCTGCTAATC	2435	AGG	-	AUGAGACCUAGCUGCUAAUC	5529
GGTCTCATCCTTACCCCTCC	2436	AGG	+	GGUCUCAUCCUUACCCCUCC	5530
TCCTTACCCCTCCAGGAATA	2437	AGG	+	UCCUUACCCCUCCAGGAAUA	5531
TCCTTATTCCTGGAGGGGTA	2438	AGG	-	UCCUUAUUCCUGGAGGGGUA	5532
TACCCCTCCAGGAATAAGGA	2439	AGG	+	UACCCCUCCAGGAAUAAGGA	5533
AACCTTCCTTATTCCTGGAG	2440	GGG	-	AACCUUCCUUAUUCCUGGAG	5534
CAACCTTCCTTATTCCTGGA	2441	GGG	-	CAACCUUCCUUAUUCCUGGA	5535
GCAACCTTCCTTATTCCTGG	2442	AGG	-	GCAACCUUCCUUAUUCCUGG	5536
TCTGCAACCTTCCTTATTCC	2443	TGG	-	UCUGCAACCUUCCUUAUUCC	5537
AGGTTGCAGAAGTCCCTGAA	2444	AGG	+	AGGUUGCAGAAGUCCCUGAA	5538
GGCTCAGCAAATACCTTTCA	2445	GGG	-	GGCUCAGCAAAUACCUUUCA	5539
AGGCTCAGCAAATACCTTTC	2446	AGG	-	AGGCUCAGCAAAUACCUUUC	5540
GCTGAGCCTCTTGTGAACCG	2447	TGG	+	GCUGAGCCUCUUGUGAACCG	5541
CTGAGCCTCTTGTGAACCGT	2448	GGG	+	CUGAGCCUCUUGUGAACCGU	5542
GCCTCTTGTGAACCGTGGGT	2449	TGG	+	GCCUCUUGUGAACCGUGGGU	5543
GCCAACCCACGGTTCACAAG	2450	AGG	-	GCCAACCCACGGUUCACAAG	5544
AGTTCAGGTGAGCCAACCCA	2451	CGG	-	AGUUCAGGUGAGCCAACCCA	5545
AAGAATATCTACTAAAGTTC	2452	AGG	-	AAGAAUAUCUACUAAAGUUC	5546
ATATTCTTTAGCGACATATT	2453	TGG	+	AUAUUCUUUAGCGACAUAUU	5547
TATTCTTTAGCGACATATTT	2454	GGG	+	UAUUCUUUAGCGACAUAUUU	5548
TTAGCGACATATTTGGGCTT	2455	TGG	+	UUAGCGACAUAUUUGGGCUU	5549
TGTGGAGAGATAAAAGAGAG	2456	AGG	-	UGUGGAGAGAUAAAAGAGAG	5550
TTATCTCTCCACAAAAGTCT	2457	TGG	+	UUAUCUCUCCACAAAAGUCU	5551
TCAGTTTGCCAAGACTTTTG	2458	TGG	-	UCAGUUUGCCAAGACUUUUG	5552
TGATGTTTATGCAACCAGTA	2459	AGG	+	UGAUGUUUAUGCAACCAGUA	5553

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TATGCAACCAGTAAGGCCTC	2460	TGG	+	UAUGCAACCAGUAAGGCCUC	5554
ATGCAACCAGTAAGGCCTCT	2461	GGG	+	AUGCAACCAGUAAGGCCUCU	5555
TGCAACCAGTAAGGCCTCTG	2462	GGG	+	UGCAACCAGUAAGGCCUCUG	5556
CTCAGCCCCAGAGGCCTTAC	2463	TGG	-	CUCAGCCCCAGAGGCCUUAC	5557
CAGTAAGGCCTCTGGGGCTG	2464	AGG	+	CAGUAAGGCCUCUGGGGCUG	5558
AGTAAGGCCTCTGGGGCTGA	2465	GGG	+	AGUAAGGCCUCUGGGGCUGA	5559
GTAAGGCCTCTGGGGCTGAG	2466	GGG	+	GUAAGGCCUCUGGGGCUGAG	5560
TAAGGCCTCTGGGGCTGAGG	2467	GGG	+	UAAGGCCUCUGGGGCUGAGG	5561
GGCCTCTGGGGCTGAGGGGG	2468	TGG	+	GGCCUCUGGGGCUGAGGGGG	5562
GCCTCTGGGGCTGAGGGGGT	2469	GGG	+	GCCUCUGGGGCUGAGGGGGU	5563
TCCCACCCCCTCAGCCCCAG	2470	AGG	-	UCCCACCCCCUCAGCCCCAG	5564
CTGAGGGGGTGGGAAGCCAG	2471	TGG	+	CUGAGGGGGUGGGAAGCCAG	5565
TGAGGGGGTGGGAAGCCAGT	2472	GGG	+	UGAGGGGGUGGGAAGCCAGU	5566
GGGGGTGGGAAGCCAGTGGG	2473	TGG	+	GGGGGUGGGAAGCCAGUGGG	5567
GGTGGGAAGCCAGTGGGTGG	2474	CGG	+	GGUGGGAAGCCAGUGGGUGG	5568
TTGCAGGTTCCGCCACCCAC	2475	TGG	-	UUGCAGGUUCCGCCACCCAC	5569
ATTTGGGGCGGATTTCTTGC	2476	AGG	-	AUUUGGGGCGGAUUUCUUGC	5570
AGAAATCCGCCCCAAATTTA	2477	AGG	+	AGAAAUCCGCCCCAAAUUUA	5571
ATGCTTCCTTAAATTTGGGG	2478	CGG	-	AUGCUUCCUUAAAUUUGGGG	5572
CCCCAAATTTAAGGAAGCAT	2479	AGG	+	CCCCAAAUUUAAGGAAGCAU	5573
CCTATGCTTCCTTAAATTTG	2480	GGG	-	CCUAUGCUUCCUUAAAUUUG	5574
TCCTATGCTTCCTTAAATTT	2481	GGG	-	UCCUAUGCUUCCUUAAAUUU	5575
TTCCTATGCTTCCTTAAATT	2482	TGG	-	UUCCUAUGCUUCCUUAAAUU	5576
CCTACCCTATGTCTGCCTTG	2483	TGG	+	CCUACCCUAUGUCUGCCUUG	5577
CCACAAGGCAGACATAGGGT	2484	AGG	-	CCACAAGGCAGACAUAGGGU	5578
CTAGCCACAAGGCAGACATA	2485	GGG	-	CUAGCCACAAGGCAGACAUA	5579
CCTATGTCTGCCTTGTGGCT	2486	AGG	+	CCUAUGUCUGCCUUGUGGCU	5580
CCTAGCCACAAGGCAGACAT	2487	AGG	-	CCUAGCCACAAGGCAGACAU	5581
GAACTAAGGACCTAGCCACA	2488	AGG	-	GAACUAAGGACCUAGCCACA	5582
TCCTTAGTTCATTGTCTCTT	2489	AGG	+	UCCUUAGUUCAUUGUCUCUU	5583
ACCTAAGAGACAATGAACTA	2490	AGG	-	ACCUAAGAGACAAUGAACUA	5584
TTCTACTCTCAAGAGAATCT	2491	GGG	-	UUCUACUCUCAAGAGAAUCU	5585
CTTCTACTCTCAAGAGAATC	2492	TGG	-	CUUCUACUCUCAAGAGAAUC	5586
CAGATTCTCTTGAGAGTAGA	2493	AGG	+	CAGAUUCUCUUGAGAGUAGA	5587
ATTCTCTTGAGAGTAGAAGG	2494	TGG	+	AUUCUCUUGAGAGUAGAAGG	5588
TCTCGGATTTGTTAATCAGG	2495	AGG	-	UCUCGGAUUUGUUAAUCAGG	5589
TCCTGATTAACAAATCCGAG	2496	AGG	+	UCCUGAUUAACAAAUCCGAG	5590
ACCTCTCGGATTTGTTAATC	2497	AGG	-	ACCUCUCGGAUUUGUUAAUC	5591
TTCATGAGATTAGCACCTCT	2498	CGG	-	UUCAUGAGAUUAGCACCUCU	5592
GCTAATCTCATGAATTCTCC	2499	CGG	+	GCUAAUCUCAUGAAUUCUCC	5593
TCATGAATTCTCCCGGACTA	2500	TGG	+	UCAUGAAUUCUCCCGGACUA	5594
GCTATATATAACCATAGTCC	2501	GGG	-	GCUAUAUAUAACCAUAGUCC	5595
AGCTATATATAACCATAGTC	2502	CGG	-	AGCUAUAUAUAACCAUAGUC	5596
TCAGTGATCTCATGTAGCTT	2503	AGG	+	UCAGUGAUCUCAUGUAGCUU	5597
TGATCTCATGTAGCTTAGGC	2504	TGG	+	UGAUCUCAUGUAGCUUAGGC	5598
CTCATGTAGCTTAGGCTGGC	2505	TGG	+	CUCAUGUAGCUUAGGCUGGC	5599
TTGAGCTCACTATGAAGCAA	2506	AGG	+	UUGAGCUCACUAUGAAGCAA	5600
AAGGATGACCCTGAACTTCT	2507	TGG	+	AAGGAUGACCCUGAACUUCU	5601
CAGGAAAACCAAGAAGTTCA	2508	GGG	-	CAGGAAAACCAAGAAGUUCA	5602
GCAGGAAAACCAAGAAGTTC	2509	AGG	-	GCAGGAAAACCAAGAAGUUC	5603
AGCACTTGGAAGATGAAAGC	2510	AGG	-	AGCACUUGGAAGAUGAAAGC	5604
ATTCTTGTAATCGCAGCACT	2511	TGG	-	AUUCUUGUAAUCGCAGCACU	5605
GCTGCCATGTCTAGTTCATG	2512	TGG	+	GCUGCCAUGUCUAGUUCAUG	5606
AGCACCACATGAACTAGACA	2513	TGG	-	AGCACCACAUGAACUAGACA	5607
TGTCTAGTTCATGTGGTGCT	2514	AGG	+	UGUCUAGUUCAUGUGGUGCU	5608
GTCTAGTTCATGTGGTGCTA	2515	GGG	+	GUCUAGUUCAUGUGGUGCUA	5609
GGTGCTAGGGATCAACCCTG	2516	AGG	+	GGUGCUAGGGAUCAACCCUG	5610
TTAACATGCACAAAGCCTCA	2517	GGG	-	UUAACAUGCACAAAGCCUCA	5611

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CTTAACATGCACAAAGCCTC	2518	AGG	-	CUUAACAUGCACAAAGCCUC	5612
ATTCTTTTGAGTCAGGGTCA	2519	GGG	-	AUUCUUUUGAGUCAGGGUCA	5613
TATTCTTTTGAGTCAGGGTC	2520	AGG	-	UAUUCUUUUGAGUCAGGGUC	5614
TGACCCTGACTCAAAAGAAT	2521	AGG	+	UGACCCUGACUCAAAAGAAU	5615
GACCCTGACTCAAAAGAATA	2522	GGG	+	GACCCUGACUCAAAAGAAUA	5616
ACCCTGACTCAAAAGAATAG	2523	GGG	+	ACCCUGACUCAAAAGAAUAG	5617
CCCTGACTCAAAAGAATAGG	2524	GGG	+	CCCUGACUCAAAAGAAUAGG	5618
CCCCCTATTCTTTTGAGTCA	2525	GGG	-	CCCCCUAUUCUUUUGAGUCA	5619
CCTGACTCAAAAGAATAGGG	2526	GGG	+	CCUGACUCAAAAGAAUAGGG	5620
CCCCCCTATTCTTTTGAGTC	2527	AGG	-	CCCCCCUAUUCUUUUGAGUC	5621
CTGACTCAAAAGAATAGGGG	2528	GGG	+	CUGACUCAAAAGAAUAGGGG	5622
ACTCAAAAGAATAGGGGGGG	2529	AGG	+	ACUCAAAAGAAUAGGGGGGG	5623
AAAAGAATAGGGGGGGAGGA	2530	AGG	+	AAAAGAAUAGGGGGGGAGGA	5624
GAATAGGGGGGGAGGAAGGA	2531	AGG	+	GAAUAGGGGGGGAGGAAGGA	5625
AGGGGGGGAGGAAGGAAGGA	2532	AGG	+	AGGGGGGGAGGAAGGAAGGA	5626
GGGGAGGAAGGAAGGAAGGA	2533	AGG	+	GGGGAGGAAGGAAGGAAGGA	5627
AGGAAGGAAGGAAGGAAGGA	2534	AGG	+	AGGAAGGAAGGAAGGAAGGA	5628
AGGAAGGAAGGAAGGAAGGA	2535	AGG	+	AGGAAGGAAGGAAGGAAGGA	5629
GGAAGGAAGGAAGGAAGGAA	2536	GGG	+	GGAAGGAAGGAAGGAAGGAA	5630
AGGAAGGAAGGAAGGAAGGG	2537	AGG	+	AGGAAGGAAGGAAGGAAGGG	5631
GGAAGGAAGGAAGGAAGGGA	2538	GGG	+	GGAAGGAAGGAAGGAAGGGA	5632
AGGAAGGAAGGAAGGGAGGG	2539	AGG	+	AGGAAGGAAGGAAGGGAGGG	5633
GGAAGGAAGGAAGGGAGGGA	2540	GGG	+	GGAAGGAAGGAAGGGAGGGA	5634
AGGAAGGAAGGGAGGGAGGG	2541	AGG	+	AGGAAGGAAGGGAGGGAGGG	5635
GGAAGGAAGGGAGGGAGGGA	2542	GGG	+	GGAAGGAAGGGAGGGAGGGA	5636
AGGAAGGGAGGGAGGGAGGG	2543	AGG	+	AGGAAGGGAGGGAGGGAGGG	5637
GGAAGGGAGGGAGGGAGGGA	2544	GGG	+	GGAAGGGAGGGAGGGAGGGA	5638
AGGGAGGGAGGGAGGGAGGG	2545	AGG	+	AGGGAGGGAGGGAGGGAGGG	5639
GGGAGGGAGGGAGGGAGGGA	2546	GGG	+	GGGAGGGAGGGAGGGAGGGA	5640
AGGGAGGGAGGGAGGGAGGG	2547	AGG	+	AGGGAGGGAGGGAGGGAGGG	5641
GGGAGGGAGGGAGGGAGGGA	2548	GGG	+	GGGAGGGAGGGAGGGAGGGA	5642
AGGGAGGGAGGGAGGGAGGG	2549	AGG	+	AGGGAGGGAGGGAGGGAGGG	5643
GGGAGGGAGGGAGGGAGGGA	2550	GGG	+	GGGAGGGAGGGAGGGAGGGA	5644
AGGGAGGGAGGGAGGGAGGG	2551	AGG	+	AGGGAGGGAGGGAGGGAGGG	5645
GGGAGGGAGGGAGGGAGGGA	2552	GGG	+	GGGAGGGAGGGAGGGAGGGA	5646
AGGGAGGGAGGGAGGGAGGG	2553	AGG	+	AGGGAGGGAGGGAGGGAGGG	5647
GGGAGGGAGGGAGGGAGGGA	2554	GGG	+	GGGAGGGAGGGAGGGAGGGA	5648
AGGGAGGGAGGGAGGGAGGG	2555	AGG	+	AGGGAGGGAGGGAGGGAGGG	5649
AGGGAGGGAGGGAGGGAGGA	2556	AGG	+	AGGGAGGGAGGGAGGGAGGA	5650
GATGTTGAGAACAAAAGCCA	2557	AGG	+	GAUGUUGAGAACAAAAGCCA	5651
GAACAAAAGCCAAGGCCAAC	2558	AGG	+	GAACAAAAGCCAAGGCCAAC	5652
GCCAAGGCCAACAGGTGAGT	2559	TGG	+	GCCAAGGCCAACAGGUGAGU	5653
CCAAGGCCAACAGGTGAGTT	2560	GGG	+	CCAAGGCCAACAGGUGAGUU	5654
CCCAACTCACCTGTTGGCCT	2561	TGG	-	CCCAACUCACCUGUUGGCCU	5655
CCAACAGGTGAGTTGGGATT	2562	AGG	+	CCAACAGGUGAGUUGGGAUU	5656
CCTAATCCCAACTCACCTGT	2563	TGG	-	CCUAAUCCCAACUCACCUGU	5657
AAAAGTCCTTTTCATAGCAA	2564	AGG	+	AAAAGUCCUUUUCAUAGCAA	5658
AAAGTCCTTTTCATAGCAAA	2565	GGG	+	AAAGUCCUUUUCAUAGCAAA	5659
AAGTCCTTTTCATAGCAAAG	2566	GGG	+	AAGUCCUUUUCAUAGCAAAG	5660
ACATCCCCTTTGCTATGAAA	2567	AGG	-	ACAUCCCCUUUGCUAUGAAA	5661
TTTTCATAGCAAAGGGGATG	2568	TGG	+	UUUUCAUAGCAAAGGGGAUG	5662
GTGGAAGAAGAGAAGTTGAC	2569	AGG	+	GUGGAAGAAGAGAAGUUGAC	5663
AGAGAAGTTGACAGGTAAGT	2570	AGG	+	AGAGAAGUUGACAGGUAAGU	5664
GAGAAGTTGACAGGTAAGTA	2571	GGG	+	GAGAAGUUGACAGGUAAGUA	5665
AGAAAAAAGAAAAAAATCTG	2572	TGG	+	AGAAAAAAGAAAAAAAUCUG	5666
AAGAAAAAAATCTGTGGACC	2573	AGG	+	AAGAAAAAAAUCUGUGGACC	5667
AGAAAAAAATCTGTGGACCA	2574	GGG	+	AGAAAAAAAUCUGUGGACCA	5668
AAAATCTGTGGACCAGGGCA	2575	TGG	+	AAAAUCUGUGGACCAGGGCA	5669

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CTGCGTTTCTTGCCATGCCC	2576	TGG	-	CUGCGUUUCUUGCCAUGCCC	5670
GAGCAAATGTTCATAAAGAG	2577	AGG	+	GAGCAAAUGUUCAUAAAGAG	5671
CAAATGTTCATAAAGAGAGG	2578	TGG	+	CAAAUGUUCAUAAAGAGAGG	5672
AAATGTTCATAAAGAGAGGT	2579	GGG	+	AAAUGUUCAUAAAGAGAGGU	5673
GTTCATAAAGAGAGGTGGGC	2580	AGG	+	GUUCAUAAAGAGAGGUGGGC	5674
CATAAAGAGAGGTGGGCAGG	2581	AGG	+	CAUAAAGAGAGGUGGGCAGG	5675
GGTGGGCAGGAGGCAGACCA	2582	TGG	+	GGUGGGCAGGAGGCAGACCA	5676
TCTGATGAGTCTTGAGACCA	2583	TGG	-	UCUGAUGAGUCUUGAGACCA	5677
CAAGACTCATCAGAGAGATA	2584	AGG	+	CAAGACUCAUCAGAGAGAUA	5678
AGAGATAAGGCAATATCCTG	2585	AGG	+	AGAGAUAAGGCAAUAUCCUG	5679
TCCTGAGGAGCACCCATCTG	2586	AGG	+	UCCUGAGGAGCACCCAUCUG	5680
CCTGAGGAGCACCCATCTGA	2587	GGG	+	CCUGAGGAGCACCCAUCUGA	5681
CCCTCAGATGGGTGCTCCTC	2588	AGG	-	CCCUCAGAUGGGUGCUCCUC	5682
CTGAGGAGCACCCATCTGAG	2589	GGG	+	CUGAGGAGCACCCAUCUGAG	5683
TTGCTCAACGCCCCTCAGAT	2590	GGG	-	UUGCUCAACGCCCCUCAGAU	5684
CTTGCTCAACGCCCCTCAGA	2591	TGG	-	CUUGCUCAACGCCCCUCAGA	5685
TCTGAGGGGCGTTGAGCAAG	2592	TGG	+	UCUGAGGGGCGUUGAGCAAG	5686
CTGAGGGGCGTTGAGCAAGT	2593	GGG	+	CUGAGGGGCGUUGAGCAAGU	5687
CATTTCTCTGCATTCACAGA	2594	TGG	+	CAUUUCUCUGCAUUCACAGA	5688
TTCTCTGCATTCACAGATGG	2595	AGG	+	UUCUCUGCAUUCACAGAUGG	5689
TGCAACTATCTTTAGCAGTG	2596	AGG	+	UGCAACUAUCUUUAGCAGUG	5690
TCTTTAGCAGTGAGGCATGC	2597	TGG	+	UCUUUAGCAGUGAGGCAUGC	5691
CTTTAGCAGTGAGGCATGCT	2598	GGG	+	CUUUAGCAGUGAGGCAUGCU	5692
ATGCTGGGTAGTGCTAAGAG	2599	CGG	+	AUGCUGGGUAGUGCUAAGAG	5693
TGCTGGGTAGTGCTAAGAGC	2600	GGG	+	UGCUGGGUAGUGCUAAGAGC	5694
TGGGTAGTGCTAAGAGCGGG	2601	CGG	+	UGGGUAGUGCUAAGAGCGGG	5695
GGGTAGTGCTAAGAGCGGGC	2602	GGG	+	GGGUAGUGCUAAGAGCGGGC	5696
GGTAGTGCTAAGAGCGGGCG	2603	GGG	+	GGUAGUGCUAAGAGCGGGCG	5697
CTAAGAGCGGGCGGGGTCTG	2604	TGG	+	CUAAGAGCGGGCGGGGUCUG	5698
AGCGGGCGGGGTCTGTGGAA	2605	TGG	+	AGCGGGCGGGGUCUGUGGAA	5699
GCGGGGTCTGTGGAATGGAG	2606	AGG	+	GCGGGGUCUGUGGAAUGGAG	5700
AATGACGTGGTAATAAGGAG	2607	TGG	-	AAUGACGUGGUAAUAAGGAG	5701
AGTAAAATGACGTGGTAATA	2608	AGG	-	AGUAAAAUGACGUGGUAAUA	5702
TAATCAAAAGTAAAATGACG	2609	TGG	-	UAAUCAAAAGUAAAAUGACG	5703
CTATGTATCTTGCCTCTTGA	2610	CGG	+	CUAUGUAUCUUGCCUCUUGA	5704
GTACTTGTGTGACCGTCAAG	2611	AGG	-	GUACUUGUGUGACCGUCAAG	5705
AGTACTTCCAGTTGAAGAGT	2612	AGG	+	AGUACUUCCAGUUGAAGAGU	5706
TGTAATGCCTACTCTTCAAC	2613	TGG	-	UGUAAUGCCUACUCUUCAAC	5707
GTTGAAGAGTAGGCATTACA	2614	AGG	+	GUUGAAGAGUAGGCAUUACA	5708
TCTGCTTCCATGAATATTCT	2615	AGG	+	UCUGCUUCCAUGAAUAUUCU	5709
CTGCTTCCATGAATATTCTA	2616	GGG	+	CUGCUUCCAUGAAUAUUCUA	5710
AATGTGCCCTAGAATATTCA	2617	TGG	-	AAUGUGCCCUAGAAUAUUCA	5711
CTAGGGCACATTTTTATTCC	2618	AGG	+	CUAGGGCACAUUUUUAUUCC	5712
TGCTTTCATATATTTTTTCC	2619	TGG	-	UGCUUUCAUAUAUUUUUUCC	5713
AAAGCATTTCTAATTATGAA	2620	TGG	+	AAAGCAUUUCUAAUUAUGAA	5714
TTTCTAATTATGAATGGAAT	2621	TGG	+	UUUCUAAUUAUGAAUGGAAU	5715
CTAATTATGAATGGAATTGG	2622	TGG	+	CUAAUUAUGAAUGGAAUUGG	5716
TGAATGGAATTGGTGGTTTA	2623	TGG	+	UGAAUGGAAUUGGUGGUUUA	5717
GAATGGAATTGGTGGTTTAT	2624	GGG	+	GAAUGGAAUUGGUGGUUUAU	5718
AATGGAATTGGTGGTTTATG	2625	GGG	+	AAUGGAAUUGGUGGUUUAUG	5719
GGAACACATATGCTCAGCCT	2626	TGG	+	GGAACACAUAUGCUCAGCCU	5720
GGTTTTGGTAATTTATTCCA	2627	AGG	-	GGUUUUGGUAAUUUAUUCCA	5721
ATAAATTACCAAAACCAAAG	2628	AGG	+	AUAAAUUACCAAAACCAAAG	5722
GAGTCTAGCCTCTTTGGTTT	2629	TGG	-	GAGUCUAGCCUCUUUGGUUU	5723
AGAAGGGAGTCTAGCCTCTT	2630	TGG	-	AGAAGGGAGUCUAGCCUCUU	5724
GCTTCTGTTGATCGGTAGAA	2631	GGG	-	GCUUCUGUUGAUCGGUAGAA	5725
TGCTTCTGTTGATCGGTAGA	2632	AGG	-	UGCUUCUGUUGAUCGGUAGA	5726
TCTTATATGCTTCTGTTGAT	2633	CGG	-	UCUUAUAUGCUUCUGUUGAU	5727

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
CAACAGAAGCATATAAGAGT	2634	TGG	+	CAACAGAAGCAUAUAAGAGU	5728
TTCTCTACTCTACCAACTTG	2635	TGG	+	UUCUCUACUCUACCAACUUG	5729
CTACTCTACCAACTTGTGGT	2636	TGG	+	CUACUCUACCAACUUGUGGU	5730
TACTCTACCAACTTGTGGTT	2637	GGG	+	UACUCUACCAACUUGUGGUU	5731
AACAGGACCCAACCACAAGT	2638	TGG	-	AACAGGACCCAACCACAAGU	5732
GTCCTGTTTAGAATAATAAG	2639	AGG	+	GUCCUGUUUAGAAUAAUAAG	5733
TGCCTCTTATTATTCTAAAC	2640	AGG	-	UGCCUCUUAUUAUUCUAAAC	5734
GCATCTACATGTAGAGCTCT	2641	AGG	+	GCAUCUACAUGUAGAGCUCU	5735
TCTAGGAAGCCATTCAATGC	2642	AGG	+	UCUAGGAAGCCAUUCAAUGC	5736
GGTTTAGATCCTGCATTGAA	2643	TGG	-	GGUUUAGAUCCUGCAUUGAA	5737
TCAATGCAGGATCTAAACCT	2644	TGG	+	UCAAUGCAGGAUCUAAACCU	5738
CACAGACATTGCTAAAGCCA	2645	AGG	-	CACAGACAUUGCUAAAGCCA	5739
TGGCTTTAGCAATGTCTGTG	2646	CGG	+	UGGCUUUAGCAAUGUCUGUG	5740
AGCAATGTCTGTGCGGTACT	2647	TGG	+	AGCAAUGUCUGUGCGGUACU	5741
CAAAGAAAACCAAGATTTAT	2648	CGG	+	CAAAGAAAACCAAGAUUUAU	5742
AAAACCAAGATTTATCGGAA	2649	TGG	+	AAAACCAAGAUUUAUCGGAA	5743
ACCAAGATTTATCGGAATGG	2650	TGG	+	ACCAAGAUUUAUCGGAAUGG	5744
TCCACCATTCCGATAAATCT	2651	TGG	-	UCCACCAUUCCGAUAAAUCU	5745
GGTGGACACTGAAAGTAGAC	2652	AGG	+	GGUGGACACUGAAAGUAGAC	5746
ACACTGAAAGTAGACAGGAA	2653	AGG	+	ACACUGAAAGUAGACAGGAA	5747
CCTAGTGTGCAGTGTGCAGA	2654	TGG	+	CCUAGUGUGCAGUGUGCAGA	5748
CCATCTGCACACTGCACACT	2655	AGG	-	CCAUCUGCACACUGCACACU	5749
GTGTGCAGTGTGCAGATGGA	2656	AGG	+	GUGUGCAGUGUGCAGAUGGA	5750
TGTGCAGTGTGCAGATGGAA	2657	GGG	+	UGUGCAGUGUGCAGAUGGAA	5751
TGCAGATGGAAGGGCAGTGC	2658	TGG	+	UGCAGAUGGAAGGGCAGUGC	5752
GCAGATGGAAGGGCAGTGCT	2659	GGG	+	GCAGAUGGAAGGGCAGUGCU	5753
CAGATGGAAGGGCAGTGCTG	2660	GGG	+	CAGAUGGAAGGGCAGUGCUG	5754
TGGGGAGAATCCATTGCATT	2661	TGG	+	UGGGGAGAAUCCAUUGCAUU	5755
CTTCTTCTTTCCAAATGCAA	2662	TGG	-	CUUCUUCUUUCCAAAUGCAA	5756
TTAGCAAAAGAAATCGCAGA	2663	GGG	-	UUAGCAAAAGAAAUCGCAGA	5757
ATTAGCAAAAGAAATCGCAG	2664	AGG	-	AUUAGCAAAAGAAAUCGCAG	5758
GCGATTTCTTTTGCTAATGC	2665	AGG	+	GCGAUUUCUUUUGCUAAUGC	5759
AAGCAAGTACTACAGTGAAA	2666	AGG	-	AAGCAAGUACUACAGUGAAA	5760
TTCACTGTAGTACTTGCTTG	2667	TGG	+	UUCACUGUAGUACUUGCUUG	5761
ACTGTAGTACTTGCTTGTGG	2668	TGG	+	ACUGUAGUACUUGCUUGUGG	5762
TGTGGTGGTTTGAATGAAAA	2669	TGG	+	UGUGGUGGUUUGAAUGAAAA	5763
TGAATGAAAATGGTCCCCAC	2670	AGG	+	UGAAUGAAAAUGGUCCCCAC	5764
GTTTTCAAAAATAGCCTGTG	2671	GGG	-	GUUUUCAAAAAUAGCCUGUG	5765
AGTTTTCAAAAATAGCCTGT	2672	GGG	-	AGUUUUCAAAAAUAGCCUGU	5766
AAGTTTTCAAAAATAGCCTG	2673	TGG	-	AAGUUUUCAAAAAUAGCCUG	5767
TTGAAAACTTGATCCCCAGT	2674	TGG	+	UUGAAAACUUGAUCCCCAGU	5768
CCCCAGTTGGTGAAACTGTT	2675	TGG	+	CCCCAGUUGGUGAAACUGUU	5769
CCAAACAGTTTCACCAACTG	2676	GGG	-	CCAAACAGUUUCACCAACUG	5770
TCCAAACAGTTTCACCAACT	2677	GGG	-	UCCAAACAGUUUCACCAACU	5771
TTCCAAACAGTTTCACCAAC	2678	TGG	-	UUCCAAACAGUUUCACCAAC	5772
GTTGGTGAAACTGTTTGGAA	2679	AGG	+	GUUGGUGAAACUGUUUGGAA	5773
GAAACTGTTTGGAAAGGATT	2680	AGG	+	GAAACUGUUUGGAAAGGAUU	5774
TTGGAAAGGATTAGGAAGTG	2681	TGG	+	UUGGAAAGGAUUAGGAAGUG	5775
ATTAGGAAGTGTGGCCTTGC	2682	TGG	+	AUUAGGAAGUGUGGCCUUGC	5776
AAGTGTGGCCTTGCTGGATG	2683	AGG	+	AAGUGUGGCCUUGCUGGAUG	5777
TTGACAGACCTCATCCAGCA	2684	AGG	-	UUGACAGACCUCAUCCAGCA	5778
TGCTGGATGAGGTCTGTCAA	2685	TGG	+	UGCUGGAUGAGGUCUGUCAA	5779
TGGATGAGGTCTGTCAATGG	2686	CGG	+	UGGAUGAGGUCUGUCAAUGG	5780
TGAGGTCTGTCAATGGCGGA	2687	AGG	+	UGAGGUCUGUCAAUGGCGGA	5781
GAGACAGAGAGAGGCACACT	2688	GGG	-	GAGACAGAGAGAGGCACACU	5782
GGAGACAGAGAGAGGCACAC	2689	TGG	-	GGAGACAGAGAGAGGCACAC	5783
AATAAGTAGGAGACAGAGAG	2690	AGG	-	AAUAAGUAGGAGACAGAGAG	5784
TCATTTTTCAATCAATAAGT	2691	AGG	-	UCAUUUUUCAAUCAAUAAGU	5785

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AATTCTGGATGGCAGAGCAA	2692	AGG	-	AAUUCUGGAUGGCAGAGCAA	5786
TGGGTGATTAGAATTCTGGA	2693	TGG	-	UGGGUGAUUAGAAUUCUGGA	5787
GTTTTGGGTGATTAGAATTC	2694	TGG	-	GUUUUGGGUGAUUAGAAUUC	5788
TAATTAGGCTATATGGTTTT	2695	GGG	-	UAAUUAGGCUAUAUGGUUUU	5789
TTAATTAGGCTATATGGTTT	2696	TGG	-	UUAAUUAGGCUAUAUGGUUU	5790
CAGTATTTAATTAGGCTATA	2697	TGG	-	CAGUAUUUAAUUAGGCUAUA	5791
TATAAAAACAGTATTTAATT	2698	AGG	-	UAUAAAAACAGUAUUUAAUU	5792
ACTGTTTTTATAAGTTACCT	2699	TGG	+	ACUGUUUUUAUAAGUUACCU	5793
TTTATAAGTTACCTTGGTCA	2700	TGG	+	UUUAUAAGUUACCUUGGUCA	5794
TACCTTGGTCATGGTACTTT	2701	AGG	+	UACCUUGGUCAUGGUACUUU	5795
ATCCTAAAGTACCATGACCA	2702	AGG	-	AUCCUAAAGUACCAUGACCA	5796
TAGTTAAGAAACTAAGACAT	2703	TGG	+	UAGUUAAGAAACUAAGACAU	5797
CTTAACCAAAACACCACAGA	2704	CGG	+	CUUAACCAAAACACCACAGA	5798
TTAACCAAAACACCACAGAC	2705	GGG	+	UUAACCAAAACACCACAGAC	5799
CAAGCCCGTCTGTGGTGTTT	2706	TGG	-	CAAGCCCGUCUGUGGUGUUU	5800
GTCATATGCAAGCCCGTCTG	2707	TGG	-	GUCAUAUGCAAGCCCGUCUG	5801
GCATATGACAACAGTTCTAG	2708	AGG	+	GCAUAUGACAACAGUUCUAG	5802
CCCTGATCAAATGCCCTAGC	2709	AGG	+	CCCUGAUCAAAUGCCCUAGC	5803
CCTGCTAGGGCATTTGATCA	2710	GGG	-	CCUGCUAGGGCAUUUGAUCA	5804
ACCTGCTAGGGCATTTGATC	2711	AGG	-	ACCUGCUAGGGCAUUUGAUC	5805
ATCAGACACAGAACCTGCTA	2712	GGG	-	AUCAGACACAGAACCUGCUA	5806
CATCAGACACAGAACCTGCT	2713	AGG	-	CAUCAGACACAGAACCUGCU	5807
AGCAGGTTCTGTGTCTGATG	2714	AGG	+	AGCAGGUUCUGUGUCUGAUG	5808
GCAGGTTCTGTGTCTGATGA	2715	GGG	+	GCAGGUUCUGUGUCUGAUGA	5809
CTGTGTCTGATGAGGGCTGC	2716	TGG	+	CUGUGUCUGAUGAGGGCUGC	5810
TGATGAGGGCTGCTGGTTCA	2717	TGG	+	UGAUGAGGGCUGCUGGUUCA	5811
GATGAGGGCTGCTGGTTCAT	2718	GGG	+	GAUGAGGGCUGCUGGUUCAU	5812
GAGGGCTGCTGGTTCATGGG	2719	TGG	+	GAGGGCUGCUGGUUCAUGGG	5813
CTTTTTCTCAGTGTCCTTAC	2720	AGG	+	CUUUUUCUCAGUGUCCUUAC	5814
TTTCTCAGTGTCCTTACAGG	2721	TGG	+	UUUCUCAGUGUCCUUACAGG	5815
TCAGTGTCCTTACAGGTGGA	2722	AGG	+	UCAGUGUCCUUACAGGUGGA	5816
CTGGATACCTTCCACCTGTA	2723	AGG	-	CUGGAUACCUUCCACCUGUA	5817
TGGAAGGTATCCAGCTTTCT	2724	TGG	+	UGGAAGGUAUCCAGCUUUCU	5818
AATATAAGGTCCAAGAAAGC	2725	TGG	-	AAUAUAAGGUCCAAGAAAGC	5819
GGAATGCGTGCTTTAATATA	2726	AGG	-	GGAAUGCGUGCUUUAAUAUA	5820
AAGCTATCTACTCACATCAA	2727	TGG	-	AAGCUAUCUACUCACAUCAA	5821
GAGGTGCTTAAATCACTTTG	2728	GGG	-	GAGGUGCUUAAAUCACUUUG	5822
GGAGGTGCTTAAATCACTTT	2729	GGG	-	GGAGGUGCUUAAAUCACUUU	5823
TGGAGGTGCTTAAATCACTT	2730	TGG	-	UGGAGGUGCUUAAAUCACUU	5824
CCTCCAAAACCCTCCGTCTC	2731	CGG	+	CCUCCAAAACCCUCCGUCUC	5825
CCGGAGACGGAGGGTTTTGG	2732	AGG	-	CCGGAGACGGAGGGUUUUGG	5826
CATCCGGAGACGGAGGGTTT	2733	TGG	-	CAUCCGGAGACGGAGGGUUU	5827
GGGGAGCATCCGGAGACGGA	2734	GGG	-	GGGGAGCAUCCGGAGACGGA	5828
GGGGGAGCATCCGGAGACGG	2735	AGG	-	GGGGGAGCAUCCGGAGACGG	5829
AATGGGGGAGCATCCGGAGA	2736	CGG	-	AAUGGGGGAGCAUCCGGAGA	5830
GTCTCCGGATGCTCCCCCAT	2737	TGG	+	GUCUCCGGAUGCUCCCCCAU	5831
TTCACCAATGGGGGAGCATC	2738	CGG	-	UUCACCAAUGGGGGAGCAUC	5832
TGAAATCTGTTCACCAATGG	2739	GGG	-	UGAAAUCUGUUCACCAAUGG	5833
TTGAAATCTGTTCACCAATG	2740	GGG	-	UUGAAAUCUGUUCACCAAUG	5834
GTTGAAATCTGTTCACCAAT	2741	GGG	-	GUUGAAAUCUGUUCACCAAU	5835
TGTTGAAATCTGTTCACCAA	2742	TGG	-	UGUUGAAAUCUGUUCACCAA	5836
TTTCAACATAGCAATTGAGC	2743	AGG	+	UUUCAACAUAGCAAUUGAGC	5837
CAACATAGCAATTGAGCAGG	2744	AGG	+	CAACAUAGCAAUUGAGCAGG	5838
TAGCAATTGAGCAGGAGGAA	2745	AGG	+	UAGCAAUUGAGCAGGAGGAA	5839
CTGGCTGTGATCAAATAATT	2746	TGG	-	CUGGCUGUGAUCAAAUAAUU	5840
TTTGATCACAGCCAGTACTT	2747	TGG	+	UUUGAUCACAGCCAGUACUU	5841
TTGGGTGTTCACCAAAGTAC	2748	TGG	-	UUGGGUGUUCACCAAAGUAC	5842
GTGAACACCCAAACCCAGCA	2749	TGG	+	GUGAACACCCAAACCCAGCA	5843

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
TTCAGCTCCATGCTGGGTTT	2750	GGG	-	UUCAGCUCCAUGCUGGGUUU	5844
ATTCAGCTCCATGCTGGGTT	2751	TGG	-	AUUCAGCUCCAUGCUGGGUU	5845
CAGATATTCAGCTCCATGCT	2752	GGG	-	CAGAUAUUCAGCUCCAUGCU	5846
ACAGATATTCAGCTCCATGC	2753	TGG	-	ACAGAUAUUCAGCUCCAUGC	5847
CTGTAATCTCAGTATCCAGC	2754	AGG	+	CUGUAAUCUCAGUAUCCAGC	5848
TAATCTCAGTATCCAGCAGG	2755	TGG	+	UAAUCUCAGUAUCCAGCAGG	5849
AGTATCCAGCAGGTGGATAT	2756	TGG	+	AGUAUCCAGCAGGUGGAUAU	5850
GTATCCAGCAGGTGGATATT	2757	GGG	+	GUAUCCAGCAGGUGGAUAUU	5851
TATCCAGCAGGTGGATATTG	2758	GGG	+	UAUCCAGCAGGUGGAUAUUG	5852
ATTCCCCAATATCCACCTGC	2759	TGG	-	AUUCCCCAAUAUCCACCUGC	5853
ATTGGGGAATTAAGACTTCA	2760	AGG	+	AUUGGGGAAUUAAGACUUCA	5854
TAAGACTTCAAGGCCAGACT	2761	TGG	+	UAAGACUUCAAGGCCAGACU	5855
ACTTACTATGTAGCCAAGTC	2762	TGG	-	ACUUACUAUGUAGCCAAGUC	5856
TAGTAAGTTTGATGCCATCC	2763	TGG	+	UAGUAAGUUUGAUGCCAUCC	5857
AGTAAGTTTGATGCCATCCT	2764	GGG	+	AGUAAGUUUGAUGCCAUCCU	5858
GGATCTCATATAGCCCAGGA	2765	TGG	-	GGAUCUCAUAUAGCCCAGGA	5859
AACAGGATCTCATATAGCCC	2766	AGG	-	AACAGGAUCUCAUAUAGCCC	5860
TATTTGGGGGTTTTGGAAAC	2767	AGG	-	UAUUUGGGGGUUUUGGAAAC	5861
TTGTTTCTATTTGGGGGTTT	2768	TGG	-	UUGUUUCUAUUUGGGGGUUU	5862
TTTTTATTGTTTCTATTTGG	2769	GGG	-	UUUUUAUUGUUUCUAUUUGG	5863
TTTTTTATTGTTTCTATTTG	2770	GGG	-	UUUUUUAUUGUUUCUAUUUG	5864
TTTTTTTATTGTTTCTATTT	2771	GGG	-	UUUUUUUAUUGUUUCUAUUU	5865
ATTTTTTTATTGTTTCTATT	2772	TGG	-	AUUUUUUUAUUGUUUCUAUU	5866
AAATAGAAACAATAAAAAAA	2773	TGG	+	AAAUAGAAACAAUAAAAAAA	5867
TAGGGTAGCAGTGAACATGA	2774	AGG	-	UAGGGUAGCAGUGAACAUGA	5868
ATGTTCACTGCTACCCTAGA	2775	AGG	+	AUGUUCACUGCUACCCUAGA	5869
CAAGCAAAACTGACCTTCTA	2776	GGG	-	CAAGCAAAACUGACCUUCUA	5870
ACAAGCAAAACTGACCTTCT	2777	AGG	-	ACAAGCAAAACUGACCUUCU	5871
TTGTAACAGATGACTAACAG	2778	AGG	+	UUGUAACAGAUGACUAACAG	5872
AGATGACTAACAGAGGAACA	2779	AGG	+	AGAUGACUAACAGAGGAACA	5873
CTAACAGAGGAACAAGGTCC	2780	CGG	+	CUAACAGAGGAACAAGGUCC	5874
AGCATACTGGTAGCTCTTCC	2781	GGG	-	AGCAUACUGGUAGCUCUUCC	5875
CAGCATACTGGTAGCTCTTC	2782	CGG	-	CAGCAUACUGGUAGCUCUUC	5876
CGGAAGAGCTACCAGTATGC	2783	TGG	+	CGGAAGAGCUACCAGUAUGC	5877
TTCATTGGCAGCCAGCATAC	2784	TGG	-	UUCAUUGGCAGCCAGCAUAC	5878
TAAGACTTCAGCAGCTTCAT	2785	TGG	-	UAAGACUUCAGCAGCUUCAU	5879
GCTGAAGTCTTAGTAGATTT	2786	AGG	+	GCUGAAGUCUUAGUAGAUUU	5880
CTTAGTAGATTTAGGAGCTA	2787	TGG	+	CUUAGUAGAUUUAGGAGCUA	5881
CTGGGGCTGTGATGGAAGTC	2788	AGG	-	CUGGGGCUGUGAUGGAAGUC	5882
TGGTGGTGCTGGGGCTGTGA	2789	TGG	-	UGGUGGUGCUGGGGCUGUGA	5883
TCACAGCCCCAGCACCACCA	2790	TGG	+	UCACAGCCCCAGCACCACCA	5884
CACAGCCCCAGCACCACCAT	2791	GGG	+	CACAGCCCCAGCACCACCAU	5885
CAGTGCCCATGGTGGTGCTG	2792	GGG	-	CAGUGCCCAUGGUGGUGCUG	5886
GCAGTGCCCATGGTGGTGCT	2793	GGG	-	GCAGUGCCCAUGGUGGUGCU	5887
GGCAGTGCCCATGGTGGTGC	2794	TGG	-	GGCAGUGCCCAUGGUGGUGC	5888
CTGCTGGGCAGTGCCCATGG	2795	TGG	-	CUGCUGGGCAGUGCCCAUGG	5889
AGACTGCTGGGCAGTGCCCA	2796	TGG	-	AGACUGCUGGGCAGUGCCCA	5890
CTAAAAGAAGATAGACTGCT	2797	GGG	-	CUAAAAGAAGAUAGACUGCU	5891
CCAGCAGTCTATCTTCTTTT	2798	AGG	+	CCAGCAGUCUAUCUUCUUUU	5892
CCTAAAAGAAGATAGACTGC	2799	TGG	-	CCUAAAAGAAGAUAGACUGC	5893
CTATCTTCTTTTAGGTCTTC	2800	AGG	+	CUAUCUUCUUUUAGGUCUUC	5894
TTTAGGTCTTCAGGTGTCCC	2801	TGG	+	UUUAGGUCUUCAGGUGUCCC	5895
TTAGGTCTTCAGGTGTCCCT	2802	GGG	+	UUAGGUCUUCAGGUGUCCCU	5896
GTGTCCCTGGGTAGAGAACA	2803	AGG	+	GUGUCCCUGGGUAGAGAACA	5897
GAAGCCTTGTTCTCTACCCA	2804	GGG	-	GAAGCCUUGUUCUCUACCCA	5898
AGAAGCCTTGTTCTCTACCC	2805	AGG	-	AGAAGCCUUGUUCUCUACCC	5899
AACAAGGCTTCTGCTTGCAT	2806	AGG	+	AACAAGGCUUCUGCUUGCAU	5900
ACAAGGCTTCTGCTTGCATA	2807	GGG	+	ACAAGGCUUCUGCUUGCAUA	5901

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
GTGAGACTGTCACTGTACTG	2808	GGG	-	GUGAGACUGUCACUGUACUG	5902
TGTGAGACTGTCACTGTACT	2809	GGG	-	UGUGAGACUGUCACUGUACU	5903
TTGTGAGACTGTCACTGTAC	2810	TGG	-	UUGUGAGACUGUCACUGUAC	5904
TCACAATGAGTGCAGCAATG	2811	TGG	+	UCACAAUGAGUGCAGCAAUG	5905
GCAGCAATGTGGCCACAGAA	2812	CGG	+	GCAGCAAUGUGGCCACAGAA	5906
CAGCAATGTGGCCACAGAAC	2813	GGG	+	CAGCAAUGUGGCCACAGAAC	5907
AGCAATGTGGCCACAGAACG	2814	GGG	+	AGCAAUGUGGCCACAGAACG	5908
ACACACATTTCCCCGTTCTG	2815	TGG	-	ACACACAUUUCCCCGUUCUG	5909
TCAAGCTGAAAGCTTTTCAC	2816	AGG	+	UCAAGCUGAAAGCUUUUCAC	5910
TCTCTTGCTAAATGACAAAG	2817	TGG	+	UCUCUUGCUAAAUGACAAAG	5911
CTAAATGACAAAGTGGTTAG	2818	AGG	+	CUAAAUGACAAAGUGGUUAG	5912
AATGACAAAGTGGTTAGAGG	2819	AGG	+	AAUGACAAAGUGGUUAGAGG	5913
ATGACAAAGTGGTTAGAGGA	2820	GGG	+	AUGACAAAGUGGUUAGAGGA	5914
GTGTAGACAATGAAAGCTGT	2821	AGG	-	GUGUAGACAAUGAAAGCUGU	5915
AGCTTTCATTGTCTACACTC	2822	AGG	+	AGCUUUCAUUGUCUACACUC	5916
TCTTTTGAGAATTTTACAGT	2823	AGG	+	UCUUUUGAGAAUUUUACAGU	5917
CTAGTCAACACAGAAATAAA	2824	AGG	+	CUAGUCAACACAGAAAUAAA	5918
TTTGTTTTGTTGAAAAGAAG	2825	TGG	+	UUUGUUUUGUUGAAAAGAAG	5919
TTGTTTTGTTGAAAAGAAGT	2826	GGG	+	UUGUUUUGUUGAAAAGAAGU	5920
TGTTTTGTTGAAAAGAAGTG	2827	GGG	+	UGUUUUGUUGAAAAGAAGUG	5921
GTTTTGTTGAAAAGAAGTGG	2828	GGG	+	GUUUUGUUGAAAAGAAGUGG	5922
TTGAAAAGAAGTGGGGGTTT	2829	TGG	+	UUGAAAAGAAGUGGGGGUUU	5923
TGGGGGTTTTGGTACTGATG	2830	AGG	+	UGGGGGUUUUGGUACUGAUG	5924
GGGGGTTTTGGTACTGATGA	2831	GGG	+	GGGGGUUUUGGUACUGAUGA	5925
GGGGTTTTGGTACTGATGAG	2832	GGG	+	GGGGUUUUGGUACUGAUGAG	5926
TATGTTACTTATTCATTCTC	2833	AGG	+	UAUGUUACUUAUUCAUUCUC	5927
CTTATTCATTCTCAGGTTCA	2834	TGG	+	CUUAUUCAUUCUCAGGUUCA	5928
TTAATCTATCATTTGTCATA	2835	AGG	-	UUAAUCUAUCAUUUGUCAUA	5929
TAATAAAAGCATGCAAATGC	2836	TGG	+	UAAUAAAAGCAUGCAAAUGC	5930
TGCAAATGCTGGAGCTCTGC	2837	TGG	+	UGCAAAUGCUGGAGCUCUGC	5931
AAATGCTGGAGCTCTGCTGG	2838	CGG	+	AAAUGCUGGAGCUCUGCUGG	5932
GGCGGAGTACCTGATATGCA	2839	AGG	+	GGCGGAGUACCUGAUAUGCA	5933
GATCTTCATCCTTGCATATC	2840	AGG	-	GAUCUUCAUCCUUGCAUAUC	5934
GCTTTTTTATTTGATTTCTG	2841	GGG	-	GCUUUUUUAUUUGAUUUCUG	5935
AGCTTTTTTATTTGATTTCT	2842	GGG	-	AGCUUUUUUAUUUGAUUUCU	5936
CAGCTTTTTTATTTGATTTC	2843	TGG	-	CAGCUUUUUUAUUUGAUUUC	5937
CAGAAATCAAATAAAAAAGC	2844	TGG	+	CAGAAAUCAAAUAAAAAAGC	5938
AGAAATCAAATAAAAAAGCT	2845	GGG	+	AGAAAUCAAAUAAAAAAGCU	5939
TAAAAAAGCTGGGCATAGTG	2846	AGG	+	UAAAAAAGCUGGGCAUAGUG	5940
AGCTGGGCATAGTGAGGAAG	2847	AGG	+	AGCUGGGCAUAGUGAGGAAG	5941
GCATAGTGAGGAAGAGGAGA	2848	TGG	+	GCAUAGUGAGGAAGAGGAGA	5942
CATAGTGAGGAAGAGGAGAT	2849	GGG	+	CAUAGUGAGGAAGAGGAGAU	5943
AGTGAGGAAGAGGAGATGGG	2850	AGG	+	AGUGAGGAAGAGGAGAUGGG	5944
AGGAGATGGGAGGATTCCTG	2851	TGG	+	AGGAGAUGGGAGGAUUCCUG	5945
GATGGGAGGATTCCTGTGGC	2852	TGG	+	GAUGGGAGGAUUCCUGUGGC	5946
GGAGGATTCCTGTGGCTGGC	2853	TGG	+	GGAGGAUUCCUGUGGCUGGC	5947
TTAGCTGTCCAGCCAGCCAC	2854	AGG	-	UUAGCUGUCCAGCCAGCCAC	5948
TGGAAATAGATGAATAGGCT	2855	AGG	-	UGGAAAUAGAUGAAUAGGCU	5949
TAGCCTATTCATCTATTTCC	2856	AGG	+	UAGCCUAUUCAUCUAUUUCC	5950
TGGCCTGGAAATAGATGAAT	2857	AGG	-	UGGCCUGGAAAUAGAUGAAU	5951
CATCTATTTCCAGGCCACTA	2858	AGG	+	CAUCUAUUUCCAGGCCACUA	5952
ATCTATTTCCAGGCCACTAA	2859	GGG	+	AUCUAUUUCCAGGCCACUAA	5953
ATTTCCAGGCCACTAAGGGA	2860	TGG	+	AUUUCCAGGCCACUAAGGGA	5954
GGTACCATCCCTTAGTGGCC	2861	TGG	-	GGUACCAUCCCUUAGUGGCC	5955
TTTAAGGTACCATCCCTTAG	2862	TGG	-	UUUAAGGUACCAUCCCUUAG	5956
ATTATTATTGTTATTTTTTA	2863	AGG	-	AUUAUUAUUGUUAUUUUUUA	5957
ACAATAATAATAAATAAAAA	2864	AGG	+	ACAAUAAUAAUAAAUAAAAA	5958
TAATAAATAAAAAAGGTAGC	2865	TGG	+	UAAUAAAUAAAAAAGGUAGC	5959

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AAAAAGGTAGCTGGTTCCTG	2866	AGG	+	AAAAAGGUAGCUGGUUCCUG	5960
TGGTTCCTGAGGAGCATCTA	2867	AGG	+	UGGUUCCUGAGGAGCAUCUA	5961
GATATCCTTAGATGCTCCTC	2868	AGG	-	GAUAUCCUUAGAUGCUCCUC	5962
GTATGTGCACGTGGAGTTAA	2869	AGG	-	GUAUGUGCACGUGGAGUUAA	5963
GTATACAGTGTATGTGCACG	2870	TGG	-	GUAUACAGUGUAUGUGCACG	5964
TGCACATACACTGTATACAC	2871	AGG	+	UGCACAUACACUGUAUACAC	5965
TTTTTTTGGTAAAACTTGAT	2872	AGG	-	UUUUUUUGGUAAAACUUGAU	5966
TTTTTTTTTTTTTTTTTTTT	2873	TGG	-	UUUUUUUUUUUUUUUUUUUU	5967
AAGAACACTTTATTCACTGT	2874	TGG	+	AAGAACACUUUAUUCACUGU	5968
AACACTTTATTCACTGTTGG	2875	TGG	+	AACACUUUAUUCACUGUUGG	5969
ACACTTTATTCACTGTTGGT	2876	GGG	+	ACACUUUAUUCACUGUUGGU	5970
CTGTTGGTGGGTATGTAAAC	2877	TGG	+	CUGUUGGUGGGUAUGUAAAC	5971
CTCTGTGCTGATTTTCATAG	2878	TGG	-	CUCUGUGCUGAUUUUCAUAG	5972
CACTATGAAAATCAGCACAG	2879	AGG	+	CACUAUGAAAAUCAGCACAG	5973
TTGTTTTGTTGGAGTGGGAA	2880	GGG	-	UUGUUUUGUUGGAGUGGGAA	5974
TTTGTTTTGTTGGAGTGGGA	2881	AGG	-	UUUGUUUUGUUGGAGUGGGA	5975
TTGTTTTGTTTTGTTGGAGT	2882	GGG	-	UUGUUUUGUUUUGUUGGAGU	5976
TTTGTTTTGTTTTGTTGGAG	2883	TGG	-	UUUGUUUUGUUUUGUUGGAG	5977
TTTGTTTTGTTTTGTTTTGT	2884	TGG	-	UUUGUUUUGUUUUGUUUUGU	5978
GTTCTAGTTCTAGTTCTAGA	2885	GGG	-	GUUCUAGUUCUAGUUCUAGA	5979
AGTTCTAGTTCTAGTTCTAG	2886	AGG	-	AGUUCUAGUUCUAGUUCUAG	5980
CTAGAACTACTGCACGATCC	2887	AGG	+	CUAGAACUACUGCACGAUCC	5981
GATCCAGGTTTACCACTCCT	2888	AGG	+	GAUCCAGGUUUACCACUCCU	5982
ATACCTAGGAGTGGTAAACC	2889	TGG	-	AUACCUAGGAGUGGUAAACC	5983
TTTGAGTAAATACCTAGGAG	2890	TGG	-	UUUGAGUAAAUACCUAGGAG	5984
ACTCCTAGGTATTTACTCAA	2891	AGG	+	ACUCCUAGGUAUUUACUCAA	5985
AGTCCTTTGAGTAAATACCT	2892	AGG	-	AGUCCUUUGAGUAAAUACCU	5986
TATACGTCAACCTGTGACAG	2893	AGG	+	UAUACGUCAACCUGUGACAG	5987
GTATATGATGCCTCTGTCAC	2894	AGG	-	GUAUAUGAUGCCUCUGUCAC	5988
CAGAGGCATCATATACAAGC	2895	AGG	+	CAGAGGCAUCAUAUACAAGC	5989
AGAGGCATCATATACAAGCA	2896	GGG	+	AGAGGCAUCAUAUACAAGCA	5990
CATCATATACAAGCAGGGAG	2897	TGG	+	CAUCAUAUACAAGCAGGGAG	5991
CATATACAAGCAGGGAGTGG	2898	TGG	+	CAUAUACAAGCAGGGAGUGG	5992
TGAGGGGTGGGATTAAAGGC	2899	AGG	-	UGAGGGGUGGGAUUAAAGGC	5993
TGCCTTTAATCCCACCCCTC	2900	AGG	+	UGCCUUUAAUCCCACCCCUC	5994
CTCCTGAGGGGTGGGATTAA	2901	AGG	-	CUCCUGAGGGGUGGGAUUAA	5995
CTTTAATCCCACCCCTCAGG	2902	AGG	+	CUUUAAUCCCACCCCUCAGG	5996
GACTCTGCCTCCTGAGGGGT	2903	GGG	-	GACUCUGCCUCCUGAGGGGU	5997
TGACTCTGCCTCCTGAGGGG	2904	TGG	-	UGACUCUGCCUCCUGAGGGG	5998
ACCCCTCAGGAGGCAGAGTC	2905	AGG	+	ACCCCUCAGGAGGCAGAGUC	5999
ACCTGACTCTGCCTCCTGAG	2906	GGG	-	ACCUGACUCUGCCUCCUGAG	6000
TACCTGACTCTGCCTCCTGA	2907	GGG	-	UACCUGACUCUGCCUCCUGA	6001
CTACCTGACTCTGCCTCCTG	2908	AGG	-	CUACCUGACUCUGCCUCCUG	6002
GGTAGATCTCTGTGAGTTCG	2909	AGG	+	GGUAGAUCUCUGUGAGUUCG	6003
CTGTGAGTTCGAGGCCAGTT	2910	TGG	+	CUGUGAGUUCGAGGCCAGUU	6004
ACTCACTATGTAGACCAAAC	2911	TGG	-	ACUCACUAUGUAGACCAAAC	6005
CATATGGCTATATGGTCTTA	2912	TGG	-	CAUAUGGCUAUAUGGUCUUA	6006
CATAAGACCATATAGCCATA	2913	TGG	+	CAUAAGACCAUAUAGCCAUA	6007
AAGACCATATAGCCATATGG	2914	AGG	+	AAGACCAUAUAGCCAUAUGG	6008
AGACCATATAGCCATATGGA	2915	GGG	+	AGACCAUAUAGCCAUAUGGA	6009
GACCATATAGCCATATGGAG	2916	GGG	+	GACCAUAUAGCCAUAUGGAG	6010
ACCATATAGCCATATGGAGG	2917	GGG	+	ACCAUAUAGCCAUAUGGAGG	6011
CCATATAGCCATATGGAGGG	2918	GGG	+	CCAUAUAGCCAUAUGGAGGG	6012
CCCCCCTCCATATGGCTATA	2919	TGG	-	CCCCCCUCCAUAUGGCUAUA	6013
CTCACAATCCCCCCTCCATA	2920	TGG	-	CUCACAAUCCCCCCUCCAUA	6014
GAGAGAATTATTAAATGAAT	2921	TGG	+	GAGAGAAUUAUUAAAUGAAU	6015
TATACACTGTCTTCTTTCAT	2922	AGG	+	UAUACACUGUCUUCUUUCAU	6016
CATAGGAAAAATGAACAGAA	2923	AGG	+	CAUAGGAAAAAUGAACAGAA	6017

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ATAGGAAAAATGAACAGAAA	2924	GGG	+	AUAGGAAAAAUGAACAGAAA	6018
AACAGAAAGGGAGAGATCTT	2925	TGG	+	AACAGAAAGGGAGAGAUCUU	6019
ACAGAAAGGGAGAGATCTTT	2926	GGG	+	ACAGAAAGGGAGAGAUCUUU	6020
GAAAGGGAGAGATCTTTGGG	2927	TGG	+	GAAAGGGAGAGAUCUUUGGG	6021
AAAGGGAGAGATCTTTGGGT	2928	GGG	+	AAAGGGAGAGAUCUUUGGGU	6022
AAGGGAGAGATCTTTGGGTG	2929	GGG	+	AAGGGAGAGAUCUUUGGGUG	6023
ATACATGACATGAAAGCAGA	2930	AGG	+	AUACAUGACAUGAAAGCAGA	6024
TACATGACATGAAAGCAGAA	2931	GGG	+	UACAUGACAUGAAAGCAGAA	6025
ACATGACATGAAAGCAGAAG	2932	GGG	+	ACAUGACAUGAAAGCAGAAG	6026
AGCAGAAGGGGATTAGTTAT	2933	TGG	+	AGCAGAAGGGGAUUAGUUAU	6027
GAAGGGGATTAGTTATTGGA	2934	AGG	+	GAAGGGGAUUAGUUAUUGGA	6028
GGGATTAGTTATTGGAAGGC	2935	AGG	+	GGGAUUAGUUAUUGGAAGGC	6029
GGATTAGTTATTGGAAGGCA	2936	GGG	+	GGAUUAGUUAUUGGAAGGCA	6030
TTAGTTATTGGAAGGCAGGG	2937	AGG	+	UUAGUUAUUGGAAGGCAGGG	6031
TAGTTATTGGAAGGCAGGGA	2938	GGG	+	UAGUUAUUGGAAGGCAGGGA	6032
TGGAAGGCAGGGAGGGACCC	2939	AGG	+	UGGAAGGCAGGGAGGGACCC	6033
AAGGCAGGGAGGGACCCAGG	2940	AGG	+	AAGGCAGGGAGGGACCCAGG	6034
GGAGGGACCCAGGAGGATGA	2941	AGG	+	GGAGGGACCCAGGAGGAUGA	6035
GAGGGACCCAGGAGGATGAA	2942	GGG	+	GAGGGACCCAGGAGGAUGAA	6036
TCTCTTCCCTTCATCCTCCT	2943	GGG	-	UCUCUUCCCUUCAUCCUCCU	6037
TTCTCTTCCCTTCATCCTCC	2944	TGG	-	UUCUCUUCCCUUCAUCCUCC	6038
GATGAAGGGAAGAGAATGCA	2945	AGG	+	GAUGAAGGGAAGAGAAUGCA	6039
ATGAAGGGAAGAGAATGCAA	2946	GGG	+	AUGAAGGGAAGAGAAUGCAA	6040
GGGAAGAGAATGCAAGGGAA	2947	AGG	+	GGGAAGAGAAUGCAAGGGAA	6041
AATGCAAGGGAAAGGAGTAA	2948	AGG	+	AAUGCAAGGGAAAGGAGUAA	6042
GCAAGGGAAAGGAGTAAAGG	2949	AGG	+	GCAAGGGAAAGGAGUAAAGG	6043
AGGGAAAGGAGTAAAGGAGG	2950	AGG	+	AGGGAAAGGAGUAAAGGAGG	6044
GAAAGGAGTAAAGGAGGAGG	2951	AGG	+	GAAAGGAGUAAAGGAGGAGG	6045
AGTAAAGGAGGAGGAGGTAG	2952	AGG	+	AGUAAAGGAGGAGGAGGUAG	6046
TATTAATTCCAGCACTTGTG	2953	AGG	+	UAUUAAUUCCAGCACUUGUG	6047
TAATTCCAGCACTTGTGAGG	2954	AGG	+	UAAUUCCAGCACUUGUGAGG	6048
AATTCCAGCACTTGTGAGGA	2955	GGG	+	AAUUCCAGCACUUGUGAGGA	6049
ATTCCAGCACTTGTGAGGAG	2956	GGG	+	AUUCCAGCACUUGUGAGGAG	6050
TGTCCCCTCCTCACAAGTGC	2957	TGG	-	UGUCCCCUCCUCACAAGUGC	6051
GACAGAGCTCTGTGAGTTCA	2958	AGG	+	GACAGAGCUCUGUGAGUUCA	6052
TGGAACTGACTATGCAGAGG	2959	GGG	-	UGGAACUGACUAUGCAGAGG	6053
CTGGAACTGACTATGCAGAG	2960	GGG	-	CUGGAACUGACUAUGCAGAG	6054
CCCTCTGCATAGTCAGTTCC	2961	AGG	+	CCCUCUGCAUAGUCAGUUCC	6055
CCTGGAACTGACTATGCAGA	2962	GGG	-	CCUGGAACUGACUAUGCAGA	6056
TCCTGGAACTGACTATGCAG	2963	AGG	-	UCCUGGAACUGACUAUGCAG	6057
GTCAGTTCCAGGATAGCCAA	2964	TGG	+	GUCAGUUCCAGGAUAGCCAA	6058
TATGTAGCCATTGGCTATCC	2965	TGG	-	UAUGUAGCCAUUGGCUAUCC	6059
GGGTCTCATTATGTAGCCAT	2966	TGG	-	GGGUCUCAUUAUGUAGCCAU	6060
ATGAGACCCTGTGTCAGAGA	2967	AGG	+	AUGAGACCCUGUGUCAGAGA	6061
AGACCCTGTGTCAGAGAAGG	2968	TGG	+	AGACCCUGUGUCAGAGAAGG	6062
CGGCCACCTTCTCTGACACA	2969	GGG	-	CGGCCACCUUCUCUGACACA	6063
CCTGTGTCAGAGAAGGTGGC	2970	CGG	+	CCUGUGUCAGAGAAGGUGGC	6064
CCGGCCACCTTCTCTGACAC	2971	AGG	-	CCGGCCACCUUCUCUGACAC	6065
GTCAGAGAAGGTGGCCGGCG	2972	AGG	+	GUCAGAGAAGGUGGCCGGCG	6066
TCAGAGAAGGTGGCCGGCGA	2973	GGG	+	UCAGAGAAGGUGGCCGGCGA	6067
TAAGCATCAATATCCCTCGC	2974	CGG	-	UAAGCAUCAAUAUCCCUCGC	6068
TAACTCATTCAGCTGTGTGG	2975	TGG	-	UAACUCAUUCAGCUGUGUGG	6069
GTTTAACTCATTCAGCTGTG	2976	TGG	-	GUUUAACUCAUUCAGCUGUG	6070
AGTGCAAAAGTAGCAGGAAC	2977	AGG	-	AGUGCAAAAGUAGCAGGAAC	6071
ATTGAAAGTGCAAAAGTAGC	2978	AGG	-	AUUGAAAGUGCAAAAGUAGC	6072
ATGCTCCCAGATTACTTACA	2979	TGG	+	AUGCUCCCAGAUUACUUACA	6073
AAATTCCATGTAAGTAATCT	2980	GGG	-	AAAUUCCAUGUAAGUAAUCU	6074
TAAATTCCATGTAAGTAATC	2981	TGG	-	UAAAUUCCAUGUAAGUAAUC	6075

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
ATGGAATTTATATTTTATTG	2982	TGG	+	AUGGAAUUUAUAUUUUAUUG	6076
GAGGTTTGTCTATGATGTAC	2983	AGG	-	GAGGUUUGUCUAUGAUGUAC	6077
TTGGTTGAAAATTTTTCTTG	2984	AGG	-	UUGGUUGAAAAUUUUUCUUG	6078
AAATTTTCAACCAATAGTCC	2985	AGG	+	AAAUUUUCAACCAAUAGUCC	6079
GTTATTTTTGCCTGGACTAT	2986	TGG	-	GUUAUUUUUGCCUGGACUAU	6080
AAAAAGAGGTTATTTTTGCC	2987	TGG	-	AAAAAGAGGUUAUUUUUGCC	6081
AGAAAGAAAGAAAGAAAAAG	2988	AGG	-	AGAAAGAAAGAAAGAAAAAG	6082
TCTTTTTTTTTTTTTTTTTT	2989	TGG	+	UCUUUUUUUUUUUUUUUUUU	6083
TTTTTTTGGTTTTTTGAAAC	2990	AGG	+	UUUUUUUGGUUUUUUGAAAC	6084
TTTTTTGGTTTTTTGAAACA	2991	GGG	+	UUUUUUGGUUUUUUGAAACA	6085
AGGGTTTCTCTGTATAGCCC	2992	TGG	+	AGGGUUUCUCUGUAUAGCCC	6086
CTGTATAGCCCTGGCTGTCC	2993	TGG	+	CUGUAUAGCCCUGGCUGUCC	6087
AGTGAGTTCCAGGACAGCCA	2994	GGG	-	AGUGAGUUCCAGGACAGCCA	6088
AAGTGAGTTCCAGGACAGCC	2995	AGG	-	AAGUGAGUUCCAGGACAGCC	6089
TGGTGTACAAAGTGAGTTCC	2996	AGG	-	UGGUGUACAAAGUGAGUUCC	6090
TGGAACTCACTTTGTACACC	2997	AGG	+	UGGAACUCACUUUGUACACC	6091
ACTCACTTTGTACACCAGGC	2998	TGG	+	ACUCACUUUGUACACCAGGC	6092
TTCTGAGTTCGAGGCCAGCC	2999	TGG	-	UUCUGAGUUCGAGGCCAGCC	6093
CAGGTGGATTTCTGAGTTCG	3000	AGG	-	CAGGUGGAUUUCUGAGUUCG	6094
ACTCGGGAGGCAGAGGCAGG	3001	TGG	-	ACUCGGGAGGCAGAGGCAGG	6095
AGCACTCGGGAGGCAGAGGC	3002	AGG	-	AGCACUCGGGAGGCAGAGGC	6096
GCCTCTGCCTCCCGAGTGCT	3003	CGG	+	GCCUCUGCCUCCCGAGUGCU	6097
TCCGAGCACTCGGGAGGCAG	3004	AGG	-	UCCGAGCACUCGGGAGGCAG	6098
CTTTAATCCGAGCACTCGGG	3005	AGG	-	CUUUAAUCCGAGCACUCGGG	6099
CTCCCGAGTGCTCGGATTAA	3006	AGG	+	CUCCCGAGUGCUCGGAUUAA	6100
CGCCTTTAATCCGAGCACTC	3007	GGG	-	CGCCUUUAAUCCGAGCACUC	6101
ACGCCTTTAATCCGAGCACT	3008	CGG	-	ACGCCUUUAAUCCGAGCACU	6102
TATTTTTTGCGGGACGGTGG	3009	TGG	-	UAUUUUUUGCGGGACGGUGG	6103
GGTTATTTTTTGCGGGACGG	3010	TGG	-	GGUUAUUUUUUGCGGGACGG	6104
ACAGGTTATTTTTTGCGGGA	3011	CGG	-	ACAGGUUAUUUUUUGCGGGA	6105
AAAAACAGGTTATTTTTTGC	3012	GGG	-	AAAAACAGGUUAUUUUUUGC	6106
CAAAAACAGGTTATTTTTTG	3013	CGG	-	CAAAAACAGGUUAUUUUUUG	6107
ATAATTAAAACAACAAAAAC	3014	AGG	-	AUAAUUAAAACAACAAAAAC	6108
TTTTTAAGATTTTATGTGTA	3015	TGG	+	UUUUUAAGAUUUUAUGUGUA	6109
TTTTAAGATTTTATGTGTAT	3016	GGG	+	UUUUAAGAUUUUAUGUGUAU	6110
CTGTGTACCACTTGTATGCT	3017	TGG	+	CUGUGUACCACUUGUAUGCU	6111
TTGGGCACCAAGCATACAAG	3018	TGG	-	UUGGGCACCAAGCAUACAAG	6112
TGTATGCTTGGTGCCCAAGA	3019	AGG	+	UGUAUGCUUGGUGCCCAAGA	6113
TGATCTGTTCTGTCCTTCTT	3020	GGG	-	UGAUCUGUUCUGUCCUUCUU	6114
ATGATCTGTTCTGTCCTTCT	3021	TGG	-	AUGAUCUGUUCUGUCCUUCU	6115
AGAAGGACAGAACAGATCAT	3022	AGG	+	AGAAGGACAGAACAGAUCAU	6116
GAAGGACAGAACAGATCATA	3023	GGG	+	GAAGGACAGAACAGAUCAUA	6117
GAACAGATCATAGGGTTTCC	3024	TGG	+	GAACAGAUCAUAGGGUUUCC	6118
AACAGATCATAGGGTTTCCT	3025	GGG	+	AACAGAUCAUAGGGUUUCCU	6119
TTTCCTGGGATAAGAGTTAT	3026	AGG	+	UUUCCUGGGAUAAGAGUUAU	6120
ACTCCTATAACTCTTATCCC	3027	AGG	-	ACUCCUAUAACUCUUAUCCC	6121
GATGACTGTAAGCCACCAAG	3028	TGG	+	GAUGACUGUAAGCCACCAAG	6122
GTAAGCCACCAAGTGGACGC	3029	TGG	+	GUAAGCCACCAAGUGGACGC	6123
TAAGCCACCAAGTGGACGCT	3030	GGG	+	UAAGCCACCAAGUGGACGCU	6124
AATTCCCAGCGTCCACTTGG	3031	TGG	-	AAUUCCCAGCGUCCACUUGG	6125
TTCAATTCCCAGCGTCCACT	3032	TGG	-	UUCAAUUCCCAGCGUCCACU	6126
GGACGCTGGGAATTGAACCT	3033	TGG	+	GGACGCUGGGAAUUGAACCU	6127
GGAATTGAACCTTGGTTAGC	3034	TGG	+	GGAAUUGAACCUUGGUUAGC	6128
GACACTCTTCCAGCTAACCA	3035	AGG	-	GACACUCUUCCAGCUAACCA	6129
GGGACTGGAATTAAAAATAC	3036	TGG	-	GGGACUGGAAUUAAAAAUAC	6130
CATAGACAAACAACGGGGAC	3037	TGG	-	CAUAGACAAACAACGGGGAC	6131
ATCTTCATAGACAAACAACG	3038	GGG	-	AUCUUCAUAGACAAACAACG	6132
AATCTTCATAGACAAACAAC	3039	GGG	-	AAUCUUCAUAGACAAACAAC	6133

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AAATCTTCATAGACAAACAA	3040	CGG	-	AAAUCUUCAUAGACAAACAA	6134
TTGTCTATGAAGATTTTGCT	3041	TGG	+	UUGUCUAUGAAGAUUUUGCU	6135
TTTTGCTTGGTAGTCCAGTC	3042	TGG	+	UUUUGCUUGGUAGUCCAGUC	6136
CCAGTCTGGCTTTAAGAAAC	3043	AGG	+	CCAGUCUGGCUUUAAGAAAC	6137
CCTGTTTCTTAAAGCCAGAC	3044	TGG	-	CCUGUUUCUUAAAGCCAGAC	6138
CAGTCTGGCTTTAAGAAACA	3045	GGG	+	CAGUCUGGCUUUAAGAAACA	6139
AACAGGGTCTCATGCATCCC	3046	TGG	+	AACAGGGUCUCAUGCAUCCC	6140
ATGGAAGTCTGAGCAAGCCA	3047	GGG	-	AUGGAAGUCUGAGCAAGCCA	6141
CATGGAAGTCTGAGCAAGCC	3048	AGG	-	CAUGGAAGUCUGAGCAAGCC	6142
CTCAGACTTCCATGCAGCTG	3049	AGG	+	CUCAGACUUCCAUGCAGCUG	6143
GACTTCCATGCAGCTGAGGA	3050	TGG	+	GACUUCCAUGCAGCUGAGGA	6144
TAAAGCCATCCTCAGCTGCA	3051	TGG	-	UAAAGCCAUCCUCAGCUGCA	6145
TCTACGAGGAAAAGGCAGGA	3052	GGG	-	UCUACGAGGAAAAGGCAGGA	6146
CTCTACGAGGAAAAGGCAGG	3053	AGG	-	CUCUACGAGGAAAAGGCAGG	6147
GCACTCTACGAGGAAAAGGC	3054	AGG	-	GCACUCUACGAGGAAAAGGC	6148
CTCAGCACTCTACGAGGAAA	3055	AGG	-	CUCAGCACUCUACGAGGAAA	6149
TGTAATCTCAGCACTCTACG	3056	AGG	-	UGUAAUCUCAGCACUCUACG	6150
GAGAAGTCTGCTGGTGGCAC	3057	AGG	-	GAGAAGUCUGCUGGUGGCAC	6151
TGTTAGGAGAAGTCTGCTGG	3058	TGG	-	UGUUAGGAGAAGUCUGCUGG	6152
TCTTGTTAGGAGAAGTCTGC	3059	TGG	-	UCUUGUUAGGAGAAGUCUGC	6153
GACTTCTCCTAACAAGAATG	3060	TGG	+	GACUUCUCCUAACAAGAAUG	6154
TCCTAACAAGAATGTGGCAC	3061	AGG	+	UCCUAACAAGAAUGUGGCAC	6155
CCTAACAAGAATGTGGCACA	3062	GGG	+	CCUAACAAGAAUGUGGCACA	6156
CCCTGTGCCACATTCTTGTT	3063	AGG	-	CCCUGUGCCACAUUCUUGUU	6157
AACAAGAATGTGGCACAGGG	3064	AGG	+	AACAAGAAUGUGGCACAGGG	6158
ATGTGGCACAGGGAGGCAAC	3065	TGG	+	AUGUGGCACAGGGAGGCAAC	6159
TGTGGCACAGGGAGGCAACT	3066	GGG	+	UGUGGCACAGGGAGGCAACU	6160
GAGGCAACTGGGAATCAAAC	3067	AGG	+	GAGGCAACUGGGAAUCAAAC	6161
CAACTGGGAATCAAACAGGA	3068	AGG	+	CAACUGGGAAUCAAACAGGA	6162
CTGGGAATCAAACAGGAAGG	3069	AGG	+	CUGGGAAUCAAACAGGAAGG	6163
AAACAGGAAGGAGGAGTAAA	3070	AGG	+	AAACAGGAAGGAGGAGUAAA	6164
AGGAAGGAGGAGTAAAAGGA	3071	AGG	+	AGGAAGGAGGAGUAAAAGGA	6165
GGAAGGAGGAGTAAAAGGAA	3072	GGG	+	GGAAGGAGGAGUAAAAGGAA	6166
GAAGGAGGAGTAAAAGGAAG	3073	GGG	+	GAAGGAGGAGUAAAAGGAAG	6167
GGAGGAGTAAAAGGAAGGGG	3074	AGG	+	GGAGGAGUAAAAGGAAGGGG	6168
GAGTAAAAGGAAGGGGAGGA	3075	AGG	+	GAGUAAAAGGAAGGGGAGGA	6169
AAAGGAAGGGGAGGAAGGAG	3076	AGG	+	AAAGGAAGGGGAGGAAGGAG	6170
GGGAGGAAGGAGAGGAGAAG	3077	TGG	+	GGGAGGAAGGAGAGGAGAAG	6171
GGAAGGAGAGGAGAAGTGGC	3078	AGG	+	GGAAGGAGAGGAGAAGUGGC	6172
AGGAGAGGAGAAGTGGCAGG	3079	AGG	+	AGGAGAGGAGAAGUGGCAGG	6173
GTGGCAGGAGGAGAAGAAAA	3080	AGG	+	GUGGCAGGAGGAGAAGAAAA	6174
GCAGGAGGAGAAGAAAAAGG	3081	AGG	+	GCAGGAGGAGAAGAAAAAGG	6175
GGAGGAGAAGAAAAAGGAGG	3082	CGG	+	GGAGGAGAAGAAAAAGGAGG	6176
AGAAAAAGGAGGCGGAGAAA	3083	AGG	+	AGAAAAAGGAGGCGGAGAAA	6177
AAAAGGAGGCGGAGAAAAGG	3084	TGG	+	AAAAGGAGGCGGAGAAAAGG	6178
AGGCGGAGAAAAGGTGGTAG	3085	TGG	+	AGGCGGAGAAAAGGUGGUAG	6179
CGGAGAAAAGGTGGTAGTGG	3086	TGG	+	CGGAGAAAAGGUGGUAGUGG	6180
AGAAAAGGTGGTAGTGGTGG	3087	AGG	+	AGAAAAGGUGGUAGUGGUGG	6181
GGTGGTAGTGGTGGAGGAAG	3088	AGG	+	GGUGGUAGUGGUGGAGGAAG	6182
GGTAGTGGTGGAGGAAGAGG	3089	AGG	+	GGUAGUGGUGGAGGAAGAGG	6183
AGTGGTGGAGGAAGAGGAGG	3090	AGG	+	AGUGGUGGAGGAAGAGGAGG	6184
GGTGGAGGAAGAGGAGGAGG	3091	AGG	+	GGUGGAGGAAGAGGAGGAGG	6185
GGAGGAAGAGGAGGAGGAGG	3092	AGG	+	GGAGGAAGAGGAGGAGGAGG	6186
GGAAGAGGAGGAGGAGGAGG	3093	AGG	+	GGAAGAGGAGGAGGAGGAGG	6187
AGAGGAGGAGGAGGAGGAGG	3094	AGG	+	AGAGGAGGAGGAGGAGGAGG	6188
GGAGGAGGAGGAGGAGGAGG	3095	AGG	+	GGAGGAGGAGGAGGAGGAGG	6189
GGAGGAGGAGGAGGAGGAGG	3096	AGG	+	GGAGGAGGAGGAGGAGGAGG	6190
GAGGAGGAGGAGGAGGAGGA	3097	GGG	+	GAGGAGGAGGAGGAGGAGGA	6191

Target	SEQ ID NO.	PAM	Direction	Guide	SEQ ID NO.
AGGAGGAGGAGGAGGAGGAG	3098	GGG	+	AGGAGGAGGAGGAGGAGGAG	6192
GGAGGAGGAGGAGGAGGAGG	3099	GGG	+	GGAGGAGGAGGAGGAGGAGG	6193
GAGGGGGACTTAATCAGTAA	3100	AGG	+	GAGGGGGACUUAAUCAGUAA	6194
ACTTAATCAGTAAAGGAAAA	3101	AGG	+	ACUUAAUCAGUAAAGGAAAA	6195
AAAAGGCTGAGCTCAGTCCT	3102	TGG	+	AAAAGGCUGAGCUCAGUCCU	6196
CTCAGTCCTTGGAACCTACA	3103	TGG	+	CUCAGUCCUUGGAACCUACA	6197
GTCCTTGGAACCTACATGGT	3104	AGG	+	GUCCUUGGAACCUACAUGGU	6198
CTCCTACCATGTAGGTTCCA	3105	AGG	-	CUCCUACCAUGUAGGUUCCA	6199
CTCATTCTCTCCTACCATGT	3106	AGG	-	CUCAUUCUCUCCUACCAUGU	6200
GTTTCCTCTGATCCCCACAC	3107	TGG	+	GUUUCCUCUGAUCCCCACAC	6201
TGCTCCAGTGTGGGGATCAG	3108	AGG	-	UGCUCCAGUGUGGGGAUCAG	6202
TGATCCCCACACTGGAGCAA	3109	TGG	+	UGAUCCCCACACUGGAGCAA	6203
GGCACCATTGCTCCAGTGTG	3110	GGG	-	GGCACCAUUGCUCCAGUGUG	6204
TGGCACCATTGCTCCAGTGT	3111	GGG	-	UGGCACCAUUGCUCCAGUGU	6205
ATGGCACCATTGCTCCAGTG	3112	TGG	-	AUGGCACCAUUGCUCCAGUG	6206
GAAGTGGGAGAGTGATGTGA	3113	TGG	-	GAAGUGGGAGAGUGAUGUGA	6207
TGTGAGGAGTTGGGTGAAGT	3114	GGG	-	UGUGAGGAGUUGGGUGAAGU	6208
TTGTGAGGAGTTGGGTGAAG	3115	TGG	-	UUGUGAGGAGUUGGGUGAAG	6209
TTTTATTTTTGTGAGGAGTT	3116	GGG	-	UUUUAUUUUUGUGAGGAGUU	6210
TTTTTATTTTTGTGAGGAGT	3117	TGG	-	UUUUUAUUUUUGUGAGGAGU	6211
TTTTGTTTTTTATTTTTGTG	3118	AGG	-	UUUUGUUUUUUAUUUUUGUG	6212
TTAAAAAAGAAAGCTGTAGC	3119	CGG	+	UUAAAAAAGAAAGCUGUAGC	6213
TAAAAAAGAAAGCTGTAGCC	3120	GGG	+	UAAAAAAGAAAGCUGUAGCC	6214
AAGAAAGCTGTAGCCGGGCG	3121	TGG	+	AAGAAAGCUGUAGCCGGGCG	6215
AAAGCTGTAGCCGGGCGTGG	3122	TGG	+	AAAGCUGUAGCCGGGCGUGG	6216
AAAGTGTGTGCCACCACGCC	3123	CGG	-	AAAGUGUGUGCCACCACGCC	6217
GTGGCACACACTTTTAATCC	3124	CGG	+	GUGGCACACACUUUUAAUCC	6218
ACACTTTTAATCCCGGCACT	3125	TGG	+	ACACUUUUAAUCCCGGCACU	6219
CACTTTTAATCCCGGCACTT	3126	GGG	+	CACUUUUAAUCCCGGCACUU	6220
TTTTAATCCCGGCACTTGGG	3127	AGG	+	UUUUAAUCCCGGCACUUGGG	6221
TCCCGGCACTTGGGAGGCAG	3128	AGG	+	UCCCGGCACUUGGGAGGCAG	6222
GCCTCTGCCTCCCAAGTGCC	3129	GGG	-	GCCUCUGCCUCCCAAGUGCC	6223
TGCCTCTGCCTCCCAAGTGC	3130	CGG	-	UGCCUCUGCCUCCCAAGUGC	6224
ACTTGGGAGGCAGAGGCAAG	3131	CGG	+	ACUUGGGAGGCAGAGGCAAG	6225
CAAGCGGATTTCTGAGTTCG	3132	AGG	+	CAAGCGGAUUUCUGAGUUCG	6226
TTCTGAGTTCGAGGCCAGCT	3133	TGG	+	UUCUGAGUUCGAGGCCAGCU	6227
ACTCACTTTGTAGACCAAGC	3134	TGG	-	ACUCACUUUGUAGACCAAGC	6228
TGGTCTACAAAGTGAGTTCC	3135	AGG	+	UGGUCUACAAAGUGAGUUCC	6229
AAGTGAGTTCCAGGACAGCC	3136	AGG	+	AAGUGAGUUCCAGGACAGCC	6230
AGTGAGTTCCAGGACAGCCA	3137	GGG	+	AGUGAGUUCCAGGACAGCCA	6231
CTGTGTAGCCCTGGCTGTCC	3138	TGG	-	CUGUGUAGCCCUGGCUGUCC	6232
AGGGTTTCTCTGTGTAGCCC	3139	TGG	-	AGGGUUUCUCUGUGUAGCCC	6233
TCTTTTGGTTTTTCAAGACA	3140	GGG	-	UCUUUUGGUUUUUCAAGACA	6234
TTCTTTTGGTTTTTCAAGAC	3141	AGG	-	UUCUUUUGGUUUUUCAAGAC	6235
ACAGCTTTCTTTTTTTCTTT	3142	TGG	-	ACAGCUUUCUUUUUUUCUUU	6236
TATATTAATATAGCAAAGCA	3143	GGG	-	UAUAUUAAUAUAGCAAAGCA	6237
ATATATTAATATAGCAAAGC	3144	AGG	-	AUAUAUUAAUAUAGCAAAGC	6238
TGTTTTTTCTTATAGAATTA	3145	TGG	-	UGUUUUUUCUUAUAGAAUUA	6239
TTCTGGAGGGAGGAAAAGGA	3146	TGG	-	UUCUGGAGGGAGGAAAAGGA	6240
CTCATTCTGGAGGGAGGAAA	3147	AGG	-	CUCAUUCUGGAGGGAGGAAA	6241

B. Other Nuclease Agents and Target Sequences for Nuclease Agents

[00308] Any nuclease agent that induces a nick or double-strand break at a desired target sequence can be used in the methods and compositions disclosed herein. A naturally occurring or

native nuclease agent can be employed so long as the nuclease agent induces a nick or double-strand break at a desired target sequence. Alternatively, a modified or engineered nuclease agent can be employed. An "engineered nuclease agent" includes a nuclease that is engineered (modified or derived) from its native form to specifically recognize and induce a nick or double-strand break in the desired target sequence. Thus, an engineered nuclease agent can be derived from a native, naturally occurring nuclease agent or it can be artificially created or synthesized. The engineered nuclease can induce a nick or double-strand break in a target sequence, for example, wherein the target sequence is not a sequence that would have been recognized by a native (non-engineered or non-modified) nuclease agent. The modification of the nuclease agent can be as little as one amino acid in a protein cleavage agent or one nucleotide in a nucleic acid cleavage agent. Producing a nick or double-strand break at a target sequence or other DNA can be referred to herein as "cutting" or "cleaving" the target sequence or other DNA.

[00309] Active variants and fragments of the exemplified target sequences are also provided. Such active variants can comprise at least 65%, 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or more sequence identity to the given target sequence, wherein the active variants retain biological activity and hence are capable of being recognized and cleaved by a nuclease agent in a sequence-specific manner. Assays to measure the double-strand break of a target sequence by a nuclease agent are well-known. *See, e.g.*, Frendewey et al. (2010) *Methods in Enzymology* 476:295-307, which is herein incorporated by reference herein in its entirety for all purposes.

[00310] The target sequence of the nuclease agent can be positioned anywhere in or near the target locus. The target sequence can be located within a coding region of a gene, or within regulatory regions that influence the expression of the gene. A target sequence of the nuclease agent can be located in an intron, an exon, a promoter, an enhancer, a regulatory region, or any non-protein coding region.

[00311] One type of nuclease agent is a Transcription Activator-Like Effector Nuclease (TALEN). TAL effector nucleases are a class of sequence-specific nucleases that can be used to make double-strand breaks at specific target sequences in the genome of a prokaryotic or eukaryotic organism. TAL effector nucleases are created by fusing a native or engineered transcription activator-like (TAL) effector, or functional part thereof, to the catalytic domain of an endonuclease, such as, for example, FokI. The unique, modular TAL effector DNA binding

domain allows for the design of proteins with potentially any given DNA recognition specificity. Thus, the DNA binding domains of the TAL effector nucleases can be engineered to recognize specific DNA target sites and thus, used to make double-strand breaks at desired target sequences. *See* WO 2010/079430; Morbitzer et al. (2010) *Proc. Natl. Acad. Sci. U.S.A.* 107(50):21617-21622; Scholze & Boch (2010) *Virulence* 1:428-432; Christian et al. *Genetics* (2010) 186:757-761; Li et al. (2010) *Nucleic Acids Res.* (2010) doi:10.1093/nar/gkq704; and Miller et al. (2011) *Nat. Biotechnol.* 29:143–148, each of which is herein incorporated by reference in its entirety for all purposes.

[00312] Examples of suitable TAL nucleases, and methods for preparing suitable TAL nucleases, are disclosed, e.g., in US 2011/0239315 A1, US 2011/0269234 A1, US 2011/0145940 A1, US 2003/0232410 A1, US 2005/0208489 A1, US 2005/0026157 A1, US 2005/0064474 A1, US 2006/0188987 A1, and US 2006/0063231 A1, each of which is herein incorporated by reference in its entirety for all purposes. In various embodiments, TAL effector nucleases are engineered that cut in or near a target nucleic acid sequence in, e.g., a locus of interest or a genomic locus of interest, wherein the target nucleic acid sequence is at or near a sequence to be modified by a targeting vector. The TAL nucleases suitable for use with the various methods and compositions provided herein include those that are specifically designed to bind at or near target nucleic acid sequences to be modified by targeting vectors as described herein.

[00313] In some TALENs, each monomer of the TALEN comprises 33-35 TAL repeats that recognize a single base pair via two hypervariable residues. In some TALENs, the nuclease agent is a chimeric protein comprising a TAL-repeat-based DNA binding domain operably linked to an independent nuclease such as a FokI endonuclease. For example, the nuclease agent can comprise a first TAL-repeat-based DNA binding domain and a second TAL-repeat-based DNA binding domain, wherein each of the first and the second TAL-repeat-based DNA binding domains is operably linked to a FokI nuclease, wherein the first and the second TAL-repeat-based DNA binding domain recognize two contiguous target DNA sequences in each strand of the target DNA sequence separated by a spacer sequence of varying length (12-20 bp), and wherein the FokI nuclease subunits dimerize to create an active nuclease that makes a double strand break at a target sequence.

[00314] The nuclease agent employed in the various methods and compositions disclosed herein can further comprise a zinc-finger nuclease (ZFN). In some ZFNs, each monomer of the

ZFN comprises 3 or more zinc finger-based DNA binding domains, wherein each zinc finger-based DNA binding domain binds to a 3 bp subsite. In other ZFNs, the ZFN is a chimeric protein comprising a zinc finger-based DNA binding domain operably linked to an independent nuclease such as a FokI endonuclease. For example, the nuclease agent can comprise a first ZFN and a second ZFN, wherein each of the first ZFN and the second ZFN is operably linked to a FokI nuclease subunit, wherein the first and the second ZFN recognize two contiguous target DNA sequences in each strand of the target DNA sequence separated by about 5-7 bp spacer, and wherein the FokI nuclease subunits dimerize to create an active nuclease that makes a double strand break. *See, e.g.*, US20060246567; US20080182332; US20020081614; US20030021776; WO/2002/057308A2; US20130123484; US20100291048; WO/2011/017293A2; and Gaj et al. (2013) *Trends Biotechnol.*, 31(7):397-405, each of which is herein incorporated by reference in its entirety for all purposes.

[00315] Active variants and fragments of nuclease agents (i.e., an engineered nuclease agent) are also provided. Such active variants can comprise at least 65%, 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or more sequence identity to the native nuclease agent, wherein the active variants retain the ability to cut at a desired target sequence and hence retain nick or double-strand-break-inducing activity. For example, any of the nuclease agents described herein can be modified from a native endonuclease sequence and designed to recognize and induce a nick or double-strand break at a target sequence that was not recognized by the native nuclease agent. Thus, some engineered nucleases have a specificity to induce a nick or double-strand break at a target sequence that is different from the corresponding native nuclease agent target sequence. Assays for nick or double-strand-break-inducing activity are known and generally measure the overall activity and specificity of the endonuclease on DNA substrates containing the target sequence.

[00316] The nuclease agent may be introduced into the cell or animal by any known means. A polypeptide encoding the nuclease agent may be directly introduced into the cell or animal. Alternatively, a polynucleotide encoding the nuclease agent can be introduced into the cell or animal. When a polynucleotide encoding the nuclease agent is introduced, the nuclease agent can be transiently, conditionally, or constitutively expressed within the cell. The polynucleotide encoding the nuclease agent can be contained in an expression cassette and be operably linked to a conditional promoter, an inducible promoter, a constitutive promoter, or a tissue-specific

promoter. Examples of promoters are discussed in further detail elsewhere herein. Alternatively, the nuclease agent can be introduced into the cell as an mRNA encoding the nuclease agent.

[00317] A polynucleotide encoding a nuclease agent can be stably integrated in the genome of a cell and operably linked to a promoter active in the cell. Alternatively, a polynucleotide encoding a nuclease agent can be in an expression vector or a targeting vector.

[00318] When the nuclease agent is provided to the cell through the introduction of a polynucleotide encoding the nuclease agent, such a polynucleotide encoding a nuclease agent can be modified to substitute codons having a higher frequency of usage in the cell of interest, as compared to the naturally occurring polynucleotide sequence encoding the nuclease agent. For example, the polynucleotide encoding the nuclease agent can be modified to substitute codons having a higher frequency of usage in a given eukaryotic cell of interest, including a human cell, a non-human cell, a mammalian cell, a rodent cell, a mouse cell, a rat cell or any other host cell of interest, as compared to the naturally occurring polynucleotide sequence.

[00319] The term "target sequence for a nuclease agent" includes a DNA sequence at which a nick or double-strand break is induced by a nuclease agent. The target sequence for a nuclease agent can be endogenous (or native) to the cell or the target sequence can be exogenous to the cell. A target sequence that is exogenous to the cell is not naturally occurring in the genome of the cell. The target sequence can also exogenous to the polynucleotides of interest that one desires to be positioned at the target locus. In some cases, the target sequence is present only once in the genome of the host cell.

[00320] The length of the target sequence can vary, and includes, for example, target sequences that are about 30-36 bp for a zinc finger nuclease (ZFN) pair (i.e., about 15-18 bp for each ZFN), about 36 bp for a Transcription Activator-Like Effector Nuclease (TALEN), or about 20 bp for a CRISPR/Cas9 guide RNA.

VI. Cells or Animals or Genomes Comprising Nucleic Acid Constructs and/or Nuclease Agents or Nucleic Acids Encoding Nuclease Agents

[00321] Genomes, cells, and animals produced by the methods disclosed herein are also provided. Likewise, genomes, cells, and animals comprising the nucleic acid constructs comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus, vectors, lipid

nanoparticles, or compositions as described herein are also provided. Likewise, genomes, cells, and animals comprising the described nuclease agents or nucleic acids encoding the nuclease agents (e.g., targeting an endogenous *RS1* locus) or vectors, lipid nanoparticles, or compositions as described herein are also provided. The genomes, cells, or animals can comprise the nucleic acid construct genomically integrated at a target genomic locus (e.g., at an *RS1* locus) and can express the retinoschisin protein or fragment or variant thereof. The retinoschisin coding sequence can be operably linked to an endogenous promoter at the target genomic locus upon integration into the target genomic locus, or it can be operably linked to an exogenous promoter present in the nucleic acid construct. If the nucleic acid construct is a bidirectional nucleic acid construct disclosed herein, the genome, cell, or animal can express the first retinoschisin protein or fragment or variant thereof or can express the second retinoschisin protein or fragment or variant thereof. In some genomes, cells, or animals, the target genomic locus is an *RS1* locus. For example, the nucleic acid construct can be genomically integrated in intron 1 of the endogenous *RS1* locus. Endogenous *RS1* exon 1 can then splice into the coding sequence for the retinoschisin protein or fragment or variant thereof in the nucleic acid construct. In a specific example, the modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4. In a specific example, the modified *RS1* locus comprising the genomically integrated nucleic acid construct comprises an *RS1* coding sequence comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 6, 11, or 12.

[00322] In some genomes, cells, or animals, integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site. For example, the integration of the nucleic acid construct into the endogenous *RS1* locus can reduce or eliminate expression of the endogenous retinoschisin protein and replace it with expression of the retinoschisin protein or fragment or variant thereof encoded by the nucleic acid construct. In one example, integration of the nucleic acid construct into the

endogenous *RS1* locus reduces expression of the endogenous retinoschisin protein. In another example, integration of the nucleic acid construct into the endogenous *RS1* locus eliminates expression of the endogenous retinoschisin protein. In a specific example, the endogenous *RS1* locus comprises a mutated *RS1* gene comprising a mutation that causes X-linked juvenile retinoschisis, and expression of the genomically integrated nucleic acid construct reduces or eliminates expression of the mutated *RS1* gene.

[00323] The target genomic locus at which the nucleic acid construct is stably integrated can be heterozygous for the retinoschisin coding sequence from the nucleic acid construct or homozygous for the retinoschisin coding sequence from the nucleic acid construct. A diploid organism has two alleles at each genetic locus. Each pair of alleles represents the genotype of a specific genetic locus. Genotypes are described as homozygous if there are two identical alleles at a particular locus and as heterozygous if the two alleles differ. An animal comprising a genomically integrated nucleic acid construct as described herein can comprise the nucleic acid construct in a target genomic locus in its germline.

[00324] The genomes, cells, or animals provided herein can be, for example, eukaryotic, including, for example, animal, mammalian, non-human mammalian, and human. The term "animal" includes mammals, fishes, and birds. A mammal can be, for example, a non-human mammal, a human, a rodent, a rat, a mouse, or a hamster. Other non-human mammals include, for example, non-human primates, monkeys, apes, cats, dogs, rabbits, horses, bulls, deer, bison, livestock (e.g., bovine species such as cows, steer, and so forth; ovine species such as sheep, goats, and so forth; and porcine species such as pigs and boars). Birds include, for example, chickens, turkeys, ostrich, geese, ducks, and so forth. Domesticated animals and agricultural animals are also included. The term "non-human" excludes humans.

[00325] The cells can be isolated cells (e.g., *in vitro*) or can be *in vivo* within an animal. Cells can also be any type of undifferentiated or differentiated state. For example, a cell can be a totipotent cell, a pluripotent cell (e.g., a human pluripotent cell or a non-human pluripotent cell such as a mouse embryonic stem (ES) cell or a rat ES cell), or a non-pluripotent cell. Totipotent cells include undifferentiated cells that can give rise to any cell type, and pluripotent cells include undifferentiated cells that possess the ability to develop into more than one differentiated cell types.

[00326] The cells provided herein can also be germ cells (e.g., sperm or oocytes). The cells

can be mitotically competent cells or mitotically-inactive cells, meiotically competent cells or meiotically-inactive cells. Similarly, the cells can also be primary somatic cells or cells that are not a primary somatic cell. Somatic cells include any cell that is not a gamete, germ cell, gametocyte, or undifferentiated stem cell. For example, the cells can be liver cells, kidney cells, hematopoietic cells, endothelial cells, epithelial cells, fibroblasts, mesenchymal cells, keratinocytes, blood cells, melanocytes, monocytes, mononuclear cells, monocytic precursors, B cells, erythroid-megakaryocytic cells, eosinophils, macrophages, T cells, islet beta cells, exocrine cells, pancreatic progenitors, endocrine progenitors, adipocytes, preadipocytes, neurons, glial cells, neural stem cells, neurons, hepatoblasts, hepatocytes, cardiomyocytes, skeletal myoblasts, smooth muscle cells, ductal cells, acinar cells, alpha cells, beta cells, delta cells, PP cells, cholangiocytes, white or brown adipocytes, or ocular cells (e.g., trabecular meshwork cells, retinal pigment epithelial cells, retinal microvascular endothelial cells, retinal pericyte cells, conjunctival epithelial cells, conjunctival fibroblasts, iris pigment epithelial cells, keratocytes, lens epithelial cells, non-pigment ciliary epithelial cells, ocular choroid fibroblasts, photoreceptor cells, ganglion cells, bipolar cells, horizontal cells, or amacrine cells). For example, the cells can be eye cells, such as retinal cells (e.g., photoreceptors).

[00327] The cells provided herein can be normal, healthy cells, or can be diseased or mutant-bearing cells. For example, the cells can comprise one or more mutations associated with or that cause XLRS (e.g., encoding a R141C substitution in the retinoschisin protein).

[00328] The animals provided herein can be humans or they can be non-human animals. Non-human animals comprising a nucleic acid or expression cassette as described herein can be made by the methods described elsewhere herein. The term "animal" includes mammals, fishes, and birds. Mammals include, for example, humans, non-human primates, monkeys, apes, cats, dogs, horses, bulls, deer, bison, sheep, rabbits, rodents (e.g., mice, rats, hamsters, and guinea pigs), and livestock (e.g., bovine species such as cows and steer; ovine species such as sheep and goats; and porcine species such as pigs and boars). Birds include, for example, chickens, turkeys, ostrich, geese, and ducks. Domesticated animals and agricultural animals are also included. The term "non-human animal" excludes humans. Particular examples of non-human animals include rodents, such as mice and rats.

[00329] Non-human animals can be from any genetic background. For example, suitable mice can be from a 129 strain, a C57BL/6 strain, a mix of 129 and C57BL/6, a BALB/c strain, or a

Swiss Webster strain. Examples of 129 strains include 129P1, 129P2, 129P3, 129X1, 129S1 (e.g., 129S1/SV, 129S1/Svlm), 129S2, 129S4, 129S5, 129S9/SvEvH, 129S6 (129/SvEvTac), 129S7, 129S8, 129T1, and 129T2. *See, e.g.*, Festing et al. (1999) *Mammalian Genome* 10:836, herein incorporated by reference in its entirety for all purposes. Examples of C57BL strains include C57BL/A, C57BL/An, C57BL/GrFa, C57BL/Kal_wN, C57BL/6, C57BL/6J, C57BL/6ByJ, C57BL/6NJ, C57BL/10, C57BL/10ScSn, C57BL/10Cr, and C57BL/Ola. Suitable mice can also be from a mix of an aforementioned 129 strain and an aforementioned C57BL/6 strain (e.g., 50% 129 and 50% C57BL/6). Likewise, suitable mice can be from a mix of aforementioned 129 strains or a mix of aforementioned BL/6 strains (e.g., the 129S6 (129/SvEvTac) strain).

[00330] Similarly, rats can be from any rat strain, including, for example, an ACI rat strain, a Dark Agouti (DA) rat strain, a Wistar rat strain, a LEA rat strain, a Sprague Dawley (SD) rat strain, or a Fischer rat strain such as Fisher F344 or Fisher F6. Rats can also be obtained from a strain derived from a mix of two or more strains recited above. For example, a suitable rat can be from a DA strain or an ACI strain. The ACI rat strain is characterized as having black agouti, with white belly and feet and an RTI^{av1} haplotype. Such strains are available from a variety of sources including Harlan Laboratories. The Dark Agouti (DA) rat strain is characterized as having an agouti coat and an RTI^{av1} haplotype. Such rats are available from a variety of sources including Charles River and Harlan Laboratories. In some cases, suitable rats can be from an inbred rat strain. *See, e.g.*, US 2014/0235933, herein incorporated by reference in its entirety for all purposes.

VII. Methods for Modifying a Target Genomic Locus, Expressing Retinoschisin in a Cell, or Treating XLRS

[00331] Also provided herein are methods for modifying a target genomic locus or methods for expressing retinoschisin in a cell using the nucleic acid constructs comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus as provided herein. Also provided herein are methods for modifying a target genomic locus or methods for expressing retinoschisin in a cell using the nuclease agents (or nucleic acids encoding) disclosed herein in combination with the nucleic acid constructs comprising a retinoschisin coding sequence (i.e., encoding a

retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus as provided herein. Also provided herein are methods for modifying a target genomic locus using the nuclease agents (or nucleic acids encoding) disclosed herein.

[00332] The methods can be, for example, methods of modifying a target genomic locus (e.g., an endogenous *RS1* locus). Some such methods comprise administering a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus and cleaves the target genomic locus.

[00333] The methods can be, for example, methods of integrating a coding sequence for a retinoschisin protein or fragment thereof into a target genomic locus and expressing the retinoschisin protein or fragment thereof in a cell. Some such methods comprise administering a nucleic acid construct, vector, or lipid nanoparticle as described elsewhere herein to a cell. The coding sequence can then be integrated into the target genomic locus, and the retinoschisin protein or fragment thereof is expressed in the cell. The retinoschisin coding sequence can be operably linked to an endogenous promoter at the target genomic locus upon integration into the target genomic locus, or it can be operably linked to an exogenous promoter present in the nucleic acid construct. Some such methods comprise administering to a cell a nucleic acid construct, vector, or lipid nanoparticle as described elsewhere herein and a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus. The nuclease agent can cleave the target genomic locus, and the coding sequence from the nucleic acid construct can be integrated into the target genomic locus so that the retinoschisin protein or fragment thereof is expressed in the cell. Some such methods comprise administering to a cell a composition comprising a nucleic acid construct, vector, or lipid nanoparticle disclosed herein and a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus. The nuclease agent can cleave the target genomic locus, and the coding sequence from the nucleic acid construct can be integrated into the target genomic locus so that the retinoschisin protein or fragment thereof is expressed in the cell. The nuclease agent or nucleic acid encoding the nuclease agent can be administered, for example, in a vector (e.g., viral vector such as an AAV vector) or in a lipid nanoparticle.

[00334] The cells in the above methods can be isolated cells (e.g., *in vitro*) or can be *in vivo* within an animal. The cells can also be any type of undifferentiated or differentiated state. For

example, a cell can be a totipotent cell, a pluripotent cell (e.g., a human pluripotent cell or a non-human pluripotent cell such as a mouse embryonic stem (ES) cell or a rat ES cell), or a non-pluripotent cell. Totipotent cells include undifferentiated cells that can give rise to any cell type, and pluripotent cells include undifferentiated cells that possess the ability to develop into more than one differentiated cell types.

[00335] The cells can also be germ cells (e.g., sperm or oocytes). The cells can be mitotically competent cells or mitotically-inactive cells, meiotically competent cells or meiotically-inactive cells. Similarly, the cells can also be primary somatic cells or cells that are not a primary somatic cell. Somatic cells include any cell that is not a gamete, germ cell, gametocyte, or undifferentiated stem cell. For example, the cells can be liver cells, kidney cells, hematopoietic cells, endothelial cells, epithelial cells, fibroblasts, mesenchymal cells, keratinocytes, blood cells, melanocytes, monocytes, mononuclear cells, monocytic precursors, B cells, erythroid-megakaryocytic cells, eosinophils, macrophages, T cells, islet beta cells, exocrine cells, pancreatic progenitors, endocrine progenitors, adipocytes, preadipocytes, neurons, glial cells, neural stem cells, neurons, hepatoblasts, hepatocytes, cardiomyocytes, skeletal myoblasts, smooth muscle cells, ductal cells, acinar cells, alpha cells, beta cells, delta cells, PP cells, cholangiocytes, white or brown adipocytes, or ocular cells (e.g., trabecular meshwork cells, retinal pigment epithelial cells, retinal microvascular endothelial cells, retinal pericyte cells, conjunctival epithelial cells, conjunctival fibroblasts, iris pigment epithelial cells, keratocytes, lens epithelial cells, non-pigment ciliary epithelial cells, ocular choroid fibroblasts, photoreceptor cells, ganglion cells, bipolar cells, horizontal cells, or amacrine cells). For example, the cells can be eye cells, such as retinal cells (e.g., photoreceptors).

[00336] The cells provided herein can be normal, healthy cells, or can be diseased or mutant-bearing cells. For example, the cells can comprise one or more mutations associated with or that cause XLRS (e.g., R141C).

[00337] The cells can be, for example, eukaryotic, including, for example, animal, mammalian, non-human mammalian, and human. In a specific example, the cells are human cells. The term "animal" includes mammals, fishes, and birds. A mammal can be, for example, a non-human mammal, a human, a rodent, a rat, a mouse, or a hamster. Other non-human mammals include, for example, non-human primates, monkeys, apes, cats, dogs, rabbits, horses, bulls, deer, bison, livestock (e.g., bovine species such as cows, steer, and so forth; ovine species

such as sheep, goats, and so forth; and porcine species such as pigs and boars). Birds include, for example, chickens, turkeys, ostrich, geese, ducks, and so forth. Domesticated animals and agricultural animals are also included. The term "non-human" excludes humans.

[00338] The cells can be *in vivo* within an animal. The animal can be a human or can be a non-human animal. Non-human animals comprising a nucleic acid or expression cassette as described herein can be made by the methods described elsewhere herein. The term "animal" includes mammals, fishes, and birds. Mammals include, for example, humans, non-human primates, monkeys, apes, cats, dogs, horses, bulls, deer, bison, sheep, rabbits, rodents (e.g., mice, rats, hamsters, and guinea pigs), and livestock (e.g., bovine species such as cows and steer; ovine species such as sheep and goats; and porcine species such as pigs and boars). Birds include, for example, chickens, turkeys, ostrich, geese, and ducks. Domesticated animals and agricultural animals are also included. The term "non-human animal" excludes humans. Particular examples of non-human animals include rodents, such as mice and rats.

[00339] Non-human animals can be from any genetic background. For example, suitable mice can be from a 129 strain, a C57BL/6 strain, a mix of 129 and C57BL/6, a BALB/c strain, or a Swiss Webster strain. Examples of 129 strains include 129P1, 129P2, 129P3, 129X1, 129S1 (e.g., 129S1/SV, 129S1/Svlm), 129S2, 129S4, 129S5, 129S9/SvEvH, 129S6 (129/SvEvTac), 129S7, 129S8, 129T1, and 129T2. *See, e.g.*, Festing et al. (1999) *Mammalian Genome* 10:836, herein incorporated by reference in its entirety for all purposes. Examples of C57BL strains include C57BL/A, C57BL/An, C57BL/GrFa, C57BL/Kal_wN, C57BL/6, C57BL/6J, C57BL/6ByJ, C57BL/6NJ, C57BL/10, C57BL/10ScSn, C57BL/10Cr, and C57BL/Ola. Suitable mice can also be from a mix of an aforementioned 129 strain and an aforementioned C57BL/6 strain (e.g., 50% 129 and 50% C57BL/6). Likewise, suitable mice can be from a mix of aforementioned 129 strains or a mix of aforementioned BL/6 strains (e.g., the 129S6 (129/SvEvTac) strain).

[00340] Similarly, rats can be from any rat strain, including, for example, an ACI rat strain, a Dark Agouti (DA) rat strain, a Wistar rat strain, a LEA rat strain, a Sprague Dawley (SD) rat strain, or a Fischer rat strain such as Fisher F344 or Fisher F6. Rats can also be obtained from a strain derived from a mix of two or more strains recited above. For example, a suitable rat can be from a DA strain or an ACI strain. The ACI rat strain is characterized as having black agouti, with white belly and feet and an $RT1^{av1}$ haplotype. Such strains are available from a variety of

sources including Harlan Laboratories. The Dark Agouti (DA) rat strain is characterized as having an agouti coat and an *RT1*^{av1} haplotype. Such rats are available from a variety of sources including Charles River and Harlan Laboratories. In some cases, suitable rats can be from an inbred rat strain. *See, e.g.*, US 2014/0235933, herein incorporated by reference in its entirety for all purposes.

[00341] Also provided are methods of treating a subject with X-linked juvenile retinoschisis (XLRS). Such methods can comprise administering a nucleic acid construct, vector, or lipid nanoparticle as described elsewhere herein to a subject with XLRS, wherein the nucleic acid construct is integrated into and expressed from the target genomic locus in one or more retinal cells (e.g., photoreceptors) in the subject, and a therapeutically effective level of retinoschisin expression is achieved in the subject. The subject can have, for example, an endogenous *RS1* gene comprising at least one mutation associated with or that causes X-linked juvenile retinoschisis (e.g., R141C). The retinoschisin coding sequence can be operably linked to an endogenous promoter at the target genomic locus upon integration into the target genomic locus, or it can be operably linked to an exogenous promoter present in the nucleic acid construct. Such methods can also comprise administering to the subject a nucleic acid construct, vector, or lipid nanoparticle as described elsewhere herein and a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus, the nucleic acid construct is integrated into and expressed from the target genomic locus in one or more retinal cells (e.g., photoreceptors) in the subject, and a therapeutically effective level of retinoschisin expression is achieved in the subject. Such methods can also comprise administering to the subject a composition comprising a nucleic acid construct, vector, or lipid nanoparticle disclosed herein and a nuclease agent or a nucleic acid encoding the nuclease agent, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus, the nucleic acid construct is integrated into and expressed from the target genomic locus in one or more retinal cells (e.g., photoreceptors) in the subject, and a therapeutically effective level of retinoschisin expression is achieved in the subject.

[00342] XLRS is a vitreo-retinal dystrophy characterized by macular pathology and by splitting of the superficial layer of the retina. Macular changes are present in almost all cases. In the fundi, radially oriented intraretinal foveomacular cysts are seen in a spoke-wheel configuration, with the absence of foveal reflex in most cases. In addition, approximately half of

cases have bilateral peripheral retinoschisis in the inferotemporal part of the retina. Aside from the typical fundus appearance, strabismus, nystagmus, axial hyperopia, defective color vision and foveal ectopy can be present. The most important complications are vitreous hemorrhage, retinal detachment, and neovascular glaucoma. Foveal schisis with "spoke-wheel" pattern is the characteristic finding on fundus exam, present in nearly 100% of cases. Schisis may occur peripherally in up to 50% of patients. Peripheral schisis can lead to holes and tears of the inner leaf with potential for hemorrhage from unsupported crossing vessels. Additional peripheral changes include pigmentation resembling RP, retinal fibrosis and white flecks.

[00343] Because XLRS is a recessive disease caused by the loss in retinoschisin function, gene replacement therapy has been considered as a potential treatment for this disease. Furthermore, because retinoschisin functions as an extracellular protein, beneficial treatment is not necessarily restricted to the transfected cell expressing the replacement gene but can encompass a wider area due to the spread of the secreted protein from the site of expression.

[00344] In some methods, integration of the nucleic acid construct results in retinal structural restoration (e.g., at least partial retinal structural restoration). In some methods, integration of the nucleic acid construct results in retinal functional restoration (e.g., at least partial retinal functional restoration).

[00345] The subject with XLRS in the above methods can be any type of animal as disclosed above. In a particular example, the subject is a human.

[00346] In methods targeting a cell *in vivo* in an animal, the nucleic acid construct can be inserted in particular types of cells in the animal. The method and vehicle for introducing the nuclease agent (or nucleic acid encoding the nuclease agent) and the nucleic acid construct into the animal can affect which types of cells in the animal are targeted. In some methods, for example, the nucleic acid construct is inserted into a target genomic locus (e.g., an endogenous *RS1* locus) in retinal cells, such as photoreceptors. Methods and vehicles for introducing the nuclease agent (or nucleic acid encoding the nuclease agent) and the nucleic acid construct into the animal (including methods and vehicles that target the eye or retinal cells (e.g., photoreceptors), such as lipid nanoparticle-mediated delivery and AAV2-mediated delivery, AAV5-mediated delivery, AAV8-mediated delivery, or AAV7m8-mediated delivery and intravitreal or subretinal injection), are disclosed in more detail elsewhere herein.

[00347] Any target genomic locus capable of expressing a gene can be used, such as a safe

harbor locus (safe harbor gene) or an endogenous *RS1* locus. Such loci are described in more detail elsewhere herein. In a specific example, the target genomic locus can be an endogenous *RS1* locus, such as an endogenous *RS1* locus comprising one or more mutations associated with or that cause XLRS (e.g., R141C). For example, the nucleic acid construct can be genomically integrated in intron 1 of the endogenous *RS1* locus. Endogenous *RS1* exon 1 can then splice into the coding sequence for the retinoschisin protein or fragment or variant thereof in the nucleic acid construct. In a specific example, the modified *RS1* locus comprising the genomically integrated nucleic acid construct encodes a protein comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 2 or 4. In a specific example, the modified *RS1* locus comprising the genomically integrated nucleic acid construct comprises an *RS1* coding sequence comprising, consisting essentially of, or consisting of a sequence at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, or 100% identical to SEQ ID NO: 6, 11, or 12.

[00348] Integration of the nucleic acid construct into the endogenous *RS1* locus can, in some cases, prevent transcription of the endogenous *RS1* gene downstream of the integration site. The integration of the nucleic acid construct into the endogenous *RS1* locus can reduce or eliminate expression of the endogenous retinoschisin protein and replace it with expression of the retinoschisin protein or fragment or variant thereof encoded by the nucleic acid construct. In one example, integration of the nucleic acid construct into the endogenous *RS1* locus reduces expression of the endogenous retinoschisin protein. In another example, integration of the nucleic acid construct into the endogenous *RS1* locus eliminates expression of the endogenous retinoschisin protein. In methods targeting cells *in vivo*, such as methods of treating a subject with XLRS, the integration of the nucleic acid construct into the endogenous *RS1* locus in one or more cells can reduce or eliminate expression of the endogenous retinoschisin protein in those cells and replace it with expression of the retinoschisin protein or fragment or variant thereof encoded by the nucleic acid construct. In this way, integration of the nucleic acid construct can simultaneously knock out the endogenous *RS1* gene (e.g., an endogenous *RS1* gene comprising one or more mutations associated with or that cause XLRS, such as R141C) and knock in a

replacement retinoschisin coding sequence (e.g., a replacement retinoschisin coding sequence that does not comprise mutations associated with or that cause XLRS). In other methods, however, an endogenous *RS1* gene comprising one or more mutations associated with or that cause XLRS can first be inactivated (e.g., using one or more nuclease agents that target and disrupt the endogenous *RS1* gene), and a nucleic acid construct comprising a replacement retinoschisin coding sequence (e.g., a replacement retinoschisin coding sequence that does not comprise mutations associated with or that cause XLRS) can subsequently be integrated into a target genomic locus. In other methods, the nucleic acid construct can be integrated first, and the endogenous *RS1* gene can subsequently be inactivated.

[00349] Targeted insertion of the nucleic acid construct comprising the retinoschisin coding sequence into a target genomic locus, and particularly an endogenous *RS1* locus, offers multiple advantages. Such methods result in stable modification to allow for stable, long-term expression of the retinoschisin coding sequence. With respect to the *RS1* locus, such methods are able to utilize the endogenous *RS1* promoter and regulatory regions to achieve physiologically relevant expression (level of expression, timing of expression, and location of expression). For example, the retinoschisin coding sequence in the nucleic acid construct can comprise a promoterless gene, and the inserted nucleic acid construct can be operably linked to an endogenous promoter in the target genomic locus (e.g., *RS1* locus). Use of an endogenous promoter is advantageous because it obviates the need for inclusion of a promoter in the nucleic acid construct, allowing packaging of larger transgenes that may not normally package efficiently (e.g., in AAV). Alternatively, the retinoschisin coding sequence in the nucleic acid construct can be operably linked to an exogenous promoter in the nucleic acid construct. Examples of types of promoters that can be used are disclosed elsewhere herein.

[00350] Optionally, some or all of the endogenous gene (e.g., endogenous *RS1* gene) at the target genomic locus can be expressed upon insertion of the retinoschisin coding sequence from the nucleic acid construct. Alternatively, in some methods, none of the endogenous gene at the target genomic locus is expressed. As one example, the modified target genomic locus (e.g., modified *RS1* locus) after integration of the nucleic acid construct can encode a chimeric protein comprising an endogenous secretion signal or a fragment thereof and the retinoschisin protein encoded by the nucleic acid construct. In another example, the first intron of an *RS1* locus can be targeted. The secretion signal peptide of *RS1* is encoded by exon 1 and part of exon 2 of the *RS1*

gene. In such a scenario, a promoterless cassette bearing a splice acceptor and the retinoschisin coding sequence will support expression and secretion of the retinoschisin protein. Splicing between endogenous *RS1* exon 1 and the integrated retinoschisin coding sequence creates a chimeric mRNA and protein including the endogenous retinoschisin sequence encoded by exon 1 operably linked to the retinoschisin protein sequence encoded by the integrated nucleic acid construct.

[00351] The retinoschisin coding sequence in the nucleic acid construct can be inserted into the target genomic locus by any means, including homologous recombination (HR) and non-homologous end joining (NHEJ) as described elsewhere herein.

[00352] In a specific example, the nucleic acid construct can be inserted via homology-independent targeted integration (e.g., directional homology-independent targeted integration). For example, the retinoschisin coding sequence in the nucleic acid construct can be flanked on each side by a target site for a nuclease agent (e.g., the same target site as in the target genomic locus, and the same nuclease agent being used to cleave the target site in the target genomic locus). The nuclease agent can then cleave the target sites flanking the retinoschisin coding sequence. In a specific example, the nucleic acid construct is delivered AAV-mediated delivery, and cleavage of the target sites flanking the retinoschisin coding sequence can remove the inverted terminal repeats (ITRs) of the AAV. Removal of the ITRs can make it easier to assess successful targeting, because presence of the ITRs can hamper sequencing efforts due to the repeated sequences. In some methods, the target site in the target genomic locus (e.g., a gRNA target sequence including the flanking protospacer adjacent motif) is no longer present if the retinoschisin coding sequence is inserted into the target genomic locus in the correct orientation but it is reformed if the retinoschisin protein coding sequence is inserted into the target genomic locus in the opposite orientation. This can help ensure that the retinoschisin coding sequence is inserted in the correct orientation for expression.

[00353] In methods in which a nucleic acid construct (or vector or LNP) and a nuclease agent or nucleic acid encoding a nuclease agent are administered together with a nucleic acid construct, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent can be administered simultaneously. Alternatively, the nucleic acid construct and the nuclease agent or the nucleic acid encoding the nuclease agent can be administered sequentially in any order. For example, the nucleic acid construct can be administered after the nuclease agent or the

nucleic acid encoding the nuclease agent, or the nuclease agent or the nucleic acid encoding the nuclease agent can be administered after the nucleic acid construct. For example, the nuclease agent or the nucleic acid encoding the nuclease agent can be administered about 1 hour to about 48 hours, about 1 hour to about 24 hours, about 1 hour to about 12 hours, about 1 hour to about 6 hours, about 1 hour to about 2 hours, about 2 hours to about 48 hours, about 2 hours to about 24 hours, about 2 hours to about 12 hours, about 2 hours to about 6 hours, about 3 hours to about 48 hours, about 6 hours to about 48 hours, about 12 hours to about 48 hours, or about 24 hours to about 48 hours prior to or subsequent to administration of the nucleic acid construct.

[00354] The nucleic acid construct and the nuclease agent or nucleic acid encoding a nuclease agent can be administered in any suitable delivery vehicle. In some methods, the nucleic acid construct and the nuclease agent or nucleic acid encoding a nuclease agent can be administered in the same delivery vehicle (e.g., the same lipid nanoparticle or vector). In some methods in which the nuclease agent comprises a Cas protein or a nucleic acid encoding a Cas protein and a guide RNA or a DNA encoding a guide RNA, both components can be administered in the same delivery vehicle, or alternatively they can be delivered in separate delivery vehicles. In other methods, the nucleic acid construct and the nuclease agent or nucleic acid encoding a nuclease agent can be administered in different delivery vehicles (e.g., administration of the nuclease agent or the nucleic acid encoding the nuclease agent in a first vector or in an LNP, and administration of the nucleic acid construct in a second vector, such as an AAV vector).

[00355] The nuclease agent (or nucleic acid encoding the nuclease agent) and the nucleic acid construct can be introduced in any form (e.g., DNA or RNA for guide RNAs; DNA, RNA, or protein for Cas proteins) via any delivery method (e.g., AAV, LNP, or HDD) and any route of administration (e.g., intravitreal injection or subretinal injection) as disclosed elsewhere herein. As one example, the nucleic acid construct is delivered via adeno-associated virus (AAV)-mediated delivery (e.g., AAV2-mediated delivery, AAV5-mediated delivery, AAV8-mediated delivery, or AAV7m8-mediated delivery). Likewise, the nuclease agent (or nucleic acid encoding the nuclease agent) can be delivered by lipid nanoparticle (LNP)-mediated delivery or AAV-mediated delivery. For example, the nuclease agent can be CRISPR/Cas9, and a Cas9 mRNA and a gRNA targeting an endogenous *RS1* locus (e.g., intron 1 of *RS1*) can be delivered via LNP-mediated delivery or AAV-mediated delivery, and the nucleic acid construct (e.g., a bidirectional construct or a homology-independent targeted integration construct) can be

delivered via AAV2-mediated delivery, AAV5-mediated delivery, AAV8-mediated delivery, or AAV7m8-mediated delivery. In another specific example, both the nucleic acid encoding the nuclease agent and the nucleic acid construct are delivered via AAV-mediated delivery (e.g., in a single AAV or via two separate AAVs). For example, a first AAV can carry a Cas9 expression cassette, and a second AAV can carry a gRNA expression cassette and the nucleic acid construct. Similarly, a first AAV can carry a Cas9 expression cassette, and a second AAV can carry two or more gRNA expression cassettes and the nucleic acid construct. Alternatively, a first AAV can carry a Cas9 expression cassette (e.g., Cas9 coding sequence operably linked to a promoter) and a gRNA expression cassette (e.g., gRNA coding sequence operably linked to a promoter), and the second AAV can carry the nucleic acid construct. Similarly, a first AAV can carry a Cas9 expression cassette (e.g., Cas9 coding sequence operably linked to a promoter) and two gRNA expression cassettes (e.g., gRNA coding sequences operably linked to promoters), and the second AAV can carry the nucleic acid construct. Different promoters can be used to drive expression of the gRNA, such as a U6 promoter or the small tRNA Gln. Likewise, different promoters can be used to drive Cas9 expression. In some methods, small promoters are used so that the Cas9 coding sequence can fit into an AAV construct. In some methods, small Cas9 proteins (e.g., SaCas9 or CjCas9 are used to maximize the AAV packaging capacity).

[00356] The methods disclosed herein comprise administering or introducing into a cell or animal nuclease agents (or nucleic acids encoding nuclease agents) and nucleic acid constructs (i.e., exogenous donor nucleic acids) comprising a retinoschisin coding sequence (i.e., encoding a retinoschisin protein or fragment or variant thereof) for integration into and expression from a target genomic locus. "Introducing" includes presenting to the cell or animal the nucleic acid or protein in such a manner that the nucleic acid or protein gains access to the interior of the cell or to the interior of cells within the animal. The introducing can be accomplished by any means, and two or more of the components (e.g., two of the components, or all of the components) can be introduced into the cell or animal simultaneously or sequentially in any combination. For example, a nuclease agent can be introduced into a cell or animal before introduction of the nucleic acid construct. In addition, two or more of the components can be introduced into the cell or animal by the same delivery method or different delivery methods. Similarly, two or more of the components can be introduced into an animal by the same route of administration or different routes of administration.

[00357] A guide RNA can be introduced into the cell in the form of an RNA (e.g., *in vitro* transcribed RNA) or in the form of a DNA encoding the guide RNA. Likewise, protein components such as Cas9 proteins, ZFNs, or TALENs can be introduced into the cell in the form of DNA, RNA, or protein. For example, a guide RNA and a Cas9 protein can both be introduced in the form of RNA. When introduced in the form of a DNA, the DNA encoding a guide RNA can be operably linked to a promoter active in the cell. For example, a guide RNA may be delivered via AAV and expressed *in vivo* under a U6 promoter. Such DNAs can be in one or more expression constructs. For example, such expression constructs can be components of a single nucleic acid molecule. Alternatively, they can be separated in any combination among two or more nucleic acid molecules (i.e., DNAs encoding one or more CRISPR RNAs and DNAs encoding one or more tracrRNAs can be components of a separate nucleic acid molecules).

[00358] Nucleic acids encoding guide RNAs or nuclease agents can be operably linked to a promoter in an expression construct. Expression constructs include any nucleic acid constructs capable of directing expression of a gene or other nucleic acid sequence of interest and which can transfer such a nucleic acid sequence of interest to a target cell. Suitable promoters that can be used in an expression construct include promoters active, for example, in one or more of a eukaryotic cell, a human cell, a non-human cell, a mammalian cell, a non-human mammalian cell, a rodent cell, a mouse cell, a rat cell, a hamster cell, a rabbit cell, a pluripotent cell, an embryonic stem (ES) cell, an adult stem cell, a developmentally restricted progenitor cell, an induced pluripotent stem (iPS) cell, or a one-cell stage embryo. Such promoters can be, for example, conditional promoters, inducible promoters, constitutive promoters, or tissue-specific promoters. Optionally, the promoter can be a bidirectional promoter driving expression of both a guide RNA in one direction and another component in the other direction. Such bidirectional promoters can consist of (1) a complete, conventional, unidirectional Pol III promoter that contains 3 external control elements: a distal sequence element (DSE), a proximal sequence element (PSE), and a TATA box; and (2) a second basic Pol III promoter that includes a PSE and a TATA box fused to the 5′ terminus of the DSE in reverse orientation. For example, in the H1 promoter, the DSE is adjacent to the PSE and the TATA box, and the promoter can be rendered bidirectional by creating a hybrid promoter in which transcription in the reverse direction is controlled by appending a PSE and TATA box derived from the U6 promoter. *See, e.g.*, US 2016/0074535, herein incorporated by references in its entirety for all purposes. Use of a

bidirectional promoter to express genes encoding a guide RNA and another component simultaneously allows for the generation of compact expression cassettes to facilitate delivery.

[00359] Guide RNAs or nucleic acids encoding guide RNAs (or other components) can be provided in compositions comprising a carrier increasing the stability of the guide RNA (e.g., prolonging the period under given conditions of storage (e.g., -20°C, 4°C, or ambient temperature) for which degradation products remain below a threshold, such below 0.5% by weight of the starting nucleic acid or protein; or increasing the stability in vivo). Non-limiting examples of such carriers include poly(lactic acid) (PLA) microspheres, poly(D,L-lactic-coglycolic-acid) (PLGA) microspheres, liposomes, micelles, inverse micelles, lipid cochleates, and lipid microtubules.

[00360] The methods provided herein do not depend on a particular method for introducing a nucleic acid or protein into the cell, only that the nucleic acid or protein gains access to the interior of a least one cell. Methods for introducing nucleic acids and proteins into various cell types are known in the art and include, for example, stable transfection methods, transient transfection methods, and virus-mediated methods.

[00361] Transfection protocols as well as protocols for introducing nucleic acids or proteins into cells may vary. Non-limiting transfection methods include chemical-based transfection methods using liposomes; nanoparticles; calcium phosphate (Graham et al. (1973) *Virology* 52 (2): 456–67, Bacchetti et al. (1977) *Proc. Natl. Acad. Sci. USA* 74 (4): 1590–4, and Kriegler, M (1991). Transfer and Expression: A Laboratory Manual. New York: W. H. Freeman and Company. pp. 96–97); dendrimers; or cationic polymers such as DEAE-dextran or polyethylenimine. Non-chemical methods include electroporation, sonoporation, and optical transfection. Particle-based transfection includes the use of a gene gun, or magnet-assisted transfection (Bertram (2006) *Current Pharmaceutical Biotechnology* 7, 277–28). Viral methods can also be used for transfection.

[00362] Introduction of nucleic acids or proteins into a cell can also be mediated by electroporation, by intracytoplasmic injection, by viral infection, by adenovirus, by lentivirus, by retrovirus, by transfection, by lipid-mediated transfection, or by nucleofection. Introduction of nucleic acids or proteins into a cell can also be mediated by adeno-associated virus. Nucleofection is an improved electroporation technology that enables nucleic acid substrates to be delivered not only to the cytoplasm but also through the nuclear membrane and into the

nucleus. In addition, use of nucleofection in the methods disclosed herein typically requires much fewer cells than regular electroporation (e.g., only about 2 million compared with 7 million by regular electroporation). In one example, nucleofection is performed using the LONZA® NUCLEOFECTOR™ system.

[00363] Introduction of nucleic acids or proteins into a cell (e.g., a one-cell stage embryo) can also be accomplished by microinjection. In one-cell stage embryos, microinjection can be into the maternal and/or paternal pronucleus or into the cytoplasm. If the microinjection is into only one pronucleus, the paternal pronucleus is preferable due to its larger size. Microinjection of an mRNA is preferably into the cytoplasm (e.g., to deliver mRNA directly to the translation machinery), while microinjection of a Cas protein or a nucleic acid encoding a Cas protein or encoding an RNA is preferable into the nucleus/pronucleus. Alternatively, microinjection can be carried out by injection into both the nucleus/pronucleus and the cytoplasm: a needle can first be introduced into the nucleus/pronucleus and a first amount can be injected, and while removing the needle from the one-cell stage embryo a second amount can be injected into the cytoplasm. If a Cas protein is injected into the cytoplasm, the Cas protein preferably comprises a nuclear localization signal to ensure delivery to the nucleus/pronucleus. Methods for carrying out microinjection are well known. *See, e.g.*, Nagy et al. (Nagy A, Gertsenstein M, Vintersten K, Behringer R., 2003, Manipulating the Mouse Embryo. Cold Spring Harbor, New York: Cold Spring Harbor Laboratory Press); Meyer et al. (2010) *Proc. Natl. Acad. Sci. USA* 107:15022-15026 and Meyer et al. (2012) *Proc. Natl. Acad. Sci. USA* 109:9354-9359. Introduction into one-cell stage embryos can also be accomplished by electroporation.

[00364] Various methods and compositions are provided herein to allow for introduction of a nucleic acid or protein into a cell or animal. Such methods for introducing nucleic acid or proteins into a cell or animal can include, for example, vector delivery, particle-mediated delivery, exosome-mediated delivery, lipid-nanoparticle (LNP)-mediated delivery, cell-penetrating-peptide-mediated delivery, or implantable-device-mediated delivery. As specific examples, a nucleic acid or protein can be introduced into a cell or animal in a carrier such as a poly(lactic acid) (PLA) microsphere, a poly(D,L-lactic-coglycolic-acid) (PLGA) microsphere, a liposome, a micelle, an inverse micelle, a lipid cochleate, or a lipid microtubule. Some specific examples of delivery to an animal include hydrodynamic delivery, virus-mediated delivery (e.g., adeno-associated virus (AAV)-mediated delivery, or by adenovirus, by lentivirus, or by

retrovirus), and lipid-nanoparticle-mediated delivery. In one specific example, both the nuclease agent and nucleic acid construct can be delivered via LNP-mediated delivery. In another specific example, both the nuclease agent and nucleic acid construct can be delivered via AAV-mediated delivery. For example, the nuclease agent and the nucleic acid construct can be delivered via multiple different AAV vectors (e.g., two different AAV vectors). In a specific example in which the nuclease agent is CRISPR/Cas (e.g., CRISPR/Cas9), a first AAV vector can deliver the Cas (e.g., Cas9), and a second AAV vector can deliver the gRNA and the nucleic acid construct. For example, small promoters can be used so that the Cas9 coding sequence can fit into an AAV construct.

[00365] In another specific example, the nuclease agent can be delivered via LNP-mediated delivery and the nucleic acid construct can be delivered via AAV-mediated delivery. In another specific example, the nuclease agent can be delivered via AAV-mediated delivery and the nucleic acid construct can be delivered via LNP-mediated delivery.

[00366] Introduction of nucleic acids can also be accomplished by virus-mediated delivery, such as AAV-mediated delivery or lentivirus-mediated delivery (e.g., an AAV vector or a lentiviral vector). Other exemplary viruses/viral vectors include retroviruses, adenoviruses, vaccinia viruses, poxviruses, and herpes simplex viruses. The viruses can infect dividing cells, non-dividing cells, or both dividing and non-dividing cells. The viruses can integrate into the host genome or alternatively do not integrate into the host genome. Such viruses can also be engineered to have reduced immunity. The viruses can be replication-competent or can be replication-defective (e.g., defective in one or more genes necessary for additional rounds of virion replication and/or packaging). Viruses can cause transient expression, long-lasting expression (e.g., at least 1 week, 2 weeks, 1 month, 2 months, or 3 months), or permanent expression (e.g., of Cas9 and/or gRNA). Exemplary viral titers (e.g., AAV titers) include 10^{12}, 10^{13}, 10^{14}, 10^{15}, and 10^{16} vector genomes/mL. Exemplary viral titers (e.g., AAV titers) include about 10^{12}, about 10^{13}, about 10^{14}, about 10^{15}, and about 10^{16} vector genomes (vg)/mL, or between about 10^{12} to about 10^{16}, between about 10^{12} to about 10^{15}, between about 10^{12} to about 10^{14}, between about 10^{12} to about 10^{13}, between about 10^{13} to about 10^{16}, between about 10^{14} to about 10^{16}, between about 10^{15} to about 10^{16}, or between about 10^{13} to about 10^{15} vg/mL. Other exemplary viral titers (e.g., AAV titers) include about 10^{12}, about 10^{13}, about 10^{14}, about 10^{15}, and about 10^{16} vector genomes (vg)/kg of body weight, or between about 10^{12} to about 10^{16},

between about 10^{12} to about 10^{15}, between about 10^{12} to about 10^{14}, between about 10^{12} to about 10^{13}, between about 10^{13} to about 10^{16}, between about 10^{14} to about 10^{16}, between about 10^{15} to about 10^{16}, or between about 10^{13} to about 10^{15} vg/kg of body weight.

[00367] The ssDNA AAV genome consists of two open reading frames, Rep and Cap, flanked by two inverted terminal repeats that allow for synthesis of the complementary DNA strand. When constructing an AAV transfer plasmid, the transgene is placed between the two ITRs, and Rep and Cap can be supplied *in trans*. In addition to Rep and Cap, AAV can require a helper plasmid containing genes from adenovirus. These genes (E4, E2a, and VA) mediate AAV replication. For example, the transfer plasmid, Rep/Cap, and the helper plasmid can be transfected into HEK293 cells containing the adenovirus gene E1+ to produce infectious AAV particles. Alternatively, the Rep, Cap, and adenovirus helper genes may be combined into a single plasmid. Similar packaging cells and methods can be used for other viruses, such as retroviruses.

[00368] Multiple serotypes of AAV have been identified. These serotypes differ in the types of cells they infect (i.e., their tropism), allowing preferential transduction of specific cell types. Serotypes for photoreceptor cells include AAV2, AAV5, and AAV8. Serotypes for retinal pigment epithelium tissue include AAV1, AAV2, AAV4, AAV5, and AAV8. In a specific example, the AAV vector comprising the nucleic acid construct can be AAV2, AAV5, or AAV8.

[00369] Tropism can be further refined through pseudotyping, which is the mixing of a capsid and a genome from different viral serotypes. For example AAV2/5 indicates a virus containing the genome of serotype 2 packaged in the capsid from serotype 5. Use of pseudotyped viruses can improve transduction efficiency, as well as alter tropism. Hybrid capsids derived from different serotypes can also be used to alter viral tropism. For example, AAV-DJ contains a hybrid capsid from eight serotypes and displays high infectivity across a broad range of cell types *in vivo*. AAV-DJ8 is another example that displays the properties of AAV-DJ but with enhanced brain uptake. AAV serotypes can also be modified through mutations. Examples of mutational modifications of AAV2 include Y444F, Y500F, Y730F, and S662V. Examples of mutational modifications of AAV3 include Y705F, Y731F, and T492V. Examples of mutational modifications of AAV6 include S663V and T492V. Other pseudotyped/modified AAV variants include AAV2/1, AAV2/6, AAV2/7, AAV2/8, AAV2/9, AAV2.5, AAV8.2, and AAV/SASTG. In a specific example, the AAV is AAV7m8, an AAV variant that mediates highly efficient

delivery to all retinal layers and to photoreceptors. *See, e.g.*, Dalkara et al. (2013) *Sci. Transl. Med.* 5:189ra76, herein incorporated by reference in its entirety for all purposes.

[00370] To accelerate transgene expression, self-complementary AAV (scAAV) variants can be used. Because AAV depends on the cell's DNA replication machinery to synthesize the complementary strand of the AAV's single-stranded DNA genome, transgene expression may be delayed. To address this delay, scAAV containing complementary sequences that are capable of spontaneously annealing upon infection can be used, eliminating the requirement for host cell DNA synthesis. However, single-stranded AAV (ssAAV) vectors can also be used.

[00371] To increase packaging capacity, longer transgenes may be split between two AAV transfer plasmids, the first with a 3' splice donor and the second with a 5' splice acceptor. Upon co-infection of a cell, these viruses form concatemers, are spliced together, and the full-length transgene can be expressed. Although this allows for longer transgene expression, expression is less efficient. Similar methods for increasing capacity utilize homologous recombination. For example, a transgene can be divided between two transfer plasmids but with substantial sequence overlap such that co-expression induces homologous recombination and expression of the full-length transgene.

[00372] In certain AAVs, the cargo can include a nuclease agent (i.e., nucleic acid encoding a nuclease agent). In certain AAVs, the cargo can include a guide RNA or a nucleic acid encoding a guide RNA. In certain AAVs, the cargo can include an mRNA encoding a Cas nuclease, such as Cas9, and a guide RNA or a nucleic acid encoding a guide RNA. In certain AAVs, the cargo can include a nucleic acid construct as described elsewhere herein. In certain AAVs, the cargo can include a nuclease agent and a nucleic acid construct as described elsewhere herein. In certain AAVs, the cargo can include an mRNA encoding a Cas nuclease, such as Cas9, a guide RNA or a nucleic acid encoding a guide RNA, and a nucleic acid construct as described elsewhere herein.

[00373] Introduction of nucleic acids and proteins can also be accomplished by lipid nanoparticle (LNP)-mediated delivery. For example, LNP-mediated delivery can be used to deliver a guide RNA in the form of RNA. Delivery through such methods results in transient presence of the guide RNA, and the biodegradable lipids improve clearance, improve tolerability, and decrease immunogenicity. Lipid formulations can protect biological molecules from degradation while improving their cellular uptake. Lipid nanoparticles are particles

comprising a plurality of lipid molecules physically associated with each other by intermolecular forces. These include microspheres (including unilamellar and multilamellar vesicles, e.g., liposomes), a dispersed phase in an emulsion, micelles, or an internal phase in a suspension. Such lipid nanoparticles can be used to encapsulate one or more nucleic acids or proteins for delivery. Formulations which contain cationic lipids are useful for delivering polyanions such as nucleic acids. Other lipids that can be included are neutral lipids (i.e., uncharged or zwitterionic lipids), anionic lipids, helper lipids that enhance transfection, and stealth lipids that increase the length of time for which nanoparticles can exist *in vivo*. Examples of suitable cationic lipids, neutral lipids, anionic lipids, helper lipids, and stealth lipids can be found in WO 2016/010840 A1 and WO 2017/173054 A1, each of which is herein incorporated by reference in its entirety for all purposes. An exemplary lipid nanoparticle can comprise a cationic lipid and one or more other components. In one example, the other component can comprise a helper lipid such as cholesterol. In another example, the other components can comprise a helper lipid such as cholesterol and a neutral lipid such as DSPC. In another example, the other components can comprise a helper lipid such as cholesterol, an optional neutral lipid such as DSPC, and a stealth lipid such as S010, S024, S027, S031, or S033.

[00374] The LNP may contain one or more or all of the following: (i) a lipid for encapsulation and for endosomal escape; (ii) a neutral lipid for stabilization; (iii) a helper lipid for stabilization; and (iv) a stealth lipid. *See, e.g.*, Finn et al. (2018) *Cell Rep.* 22(9):2227-2235 and WO 2017/173054 A1, each of which is herein incorporated by reference in its entirety for all purposes. In certain LNPs, the cargo can include a nuclease agent. In certain LNPs, the cargo can include a guide RNA or a nucleic acid encoding a guide RNA. In certain LNPs, the cargo can include an mRNA encoding a Cas nuclease, such as Cas9, and a guide RNA or a nucleic acid encoding a guide RNA. In certain LNPs, the cargo can include an exogenous donor sequence. In certain LNPs, the cargo can include a nuclease agent and an exogenous donor sequence. In certain LNPs, the cargo can include an mRNA encoding a Cas nuclease, such as Cas9, a guide RNA or a nucleic acid encoding a guide RNA, and an exogenous donor sequence.

[00375] The lipid for encapsulation and endosomal escape can be a cationic lipid. The lipid can also be a biodegradable lipid, such as a biodegradable ionizable lipid. One example of a suitable lipid is Lipid A or LP01, which is (9Z,12Z)-3-((4,4-bis(octyloxy)butanoyl)oxy)-2-((((3-(diethylamino)propoxy)carbonyl)oxy)methyl)propyl octadeca-9,12-dienoate, also called 3-((4,4-

bis(octyloxy)butanoyl)oxy)-2-((((3-(diethylamino)propoxy)carbonyl)oxy)methyl)propyl (9Z,12Z)-octadeca-9,12-dienoate. *See, e.g.*, Finn et al. (2018) *Cell Rep.* 22(9):2227-2235 and WO 2017/173054 A1, each of which is herein incorporated by reference in its entirety for all purposes. Another example of a suitable lipid is Lipid B, which is ((5-((dimethylamino)methyl)-1,3-phenylene)bis(oxy))bis(octane-8,1-diyl)bis(decanoate), also called ((5-((dimethylamino)methyl)-1,3-phenylene)bis(oxy))bis(octane-8,1-diyl)bis(decanoate). Another example of a suitable lipid is Lipid C, which is 2-((4-(((3-(dimethylamino)propoxy)carbonyl)oxy)hexadecanoyl)oxy)propane-1,3-diyl(9Z,9'Z,12Z,12'Z)-bis(octadeca-9,12-dienoate). Another example of a suitable lipid is Lipid D, which is 3-(((3-(dimethylamino)propoxy)carbonyl)oxy)-13-(octanoyloxy)tridecyl 3-octylundecanoate. Other suitable lipids include heptatriaconta-6,9,28,31-tetraen-19-yl 4-(dimethylamino)butanoate (also known as Dlin-MC3-DMA (MC3))).

[00376] Some such lipids suitable for use in the LNPs described herein are biodegradable *in vivo*. For example, LNPs comprising such a lipid include those where at least 75% of the lipid is cleared from the plasma within 8, 10, 12, 24, or 48 hours, or 3, 4, 5, 6, 7, or 10 days. As another example, at least 50% of the LNP is cleared from the plasma within 8, 10, 12, 24, or 48 hours, or 3, 4, 5, 6, 7, or 10 days.

[00377] Such lipids may be ionizable depending upon the pH of the medium they are in. For example, in a slightly acidic medium, the lipids may be protonated and thus bear a positive charge. Conversely, in a slightly basic medium, such as, for example, blood where pH is approximately 7.35, the lipids may not be protonated and thus bear no charge. In some embodiments, the lipids may be protonated at a pH of at least about 9, 9.5, or 10. The ability of such a lipid to bear a charge is related to its intrinsic pKa. For example, the lipid may, independently, have a pKa in the range of from about 5.8 to about 6.2.

[00378] Neutral lipids function to stabilize and improve processing of the LNPs. Examples of suitable neutral lipids include a variety of neutral, uncharged or zwitterionic lipids. Examples of neutral phospholipids suitable for use in the present disclosure include, but are not limited to, 5-heptadecylbenzene-1,3-diol (resorcinol), dipalmitoylphosphatidylcholine (DPPC), distearoylphosphatidylcholine (DSPC), phosphocholine (DOPC), dimyristoylphosphatidylcholine (DMPC), phosphatidylcholine (PLPC), 1,2-distearoyl-sn-glycero-3-phosphocholine (DAPC), phosphatidylethanolamine (PE), egg phosphatidylcholine

(EPC), dilauryloylphosphatidylcholine (DLPC), dimyristoylphosphatidylcholine (DMPC), 1-myristoyl-2-palmitoyl phosphatidylcholine (MPPC), 1-palmitoyl-2-myristoyl phosphatidylcholine (PMPC), 1-palmitoyl-2-stearoyl phosphatidylcholine (PSPC), 1,2-diarachidoyl-sn-glycero-3-phosphocholine (DBPC), 1-stearoyl-2-palmitoyl phosphatidylcholine (SPPC), 1,2-dieicosenoyl-sn-glycero-3-phosphocholine (DEPC), palmitoyloleoyl phosphatidylcholine (POPC), lysophosphatidyl choline, dioleoyl phosphatidylethanolamine (DOPE), dilinoleoylphosphatidylcholine distearoylphosphatidylethanolamine (DSPE), dimyristoyl phosphatidylethanolamine (DMPE), dipalmitoyl phosphatidylethanolamine (DPPE), palmitoyloleoyl phosphatidylethanolamine (POPE), lysophosphatidylethanolamine, and combinations thereof. For example, the neutral phospholipid may be selected from the group consisting of distearoylphosphatidylcholine (DSPC) and dimyristoyl phosphatidyl ethanolamine (DMPE).

[00379] Helper lipids include lipids that enhance transfection. The mechanism by which the helper lipid enhances transfection can include enhancing particle stability. In certain cases, the helper lipid can enhance membrane fusogenicity. Helper lipids include steroids, sterols, and alkyl resorcinols. Examples of suitable helper lipids suitable include cholesterol, 5-heptadecylresorcinol, and cholesterol hemisuccinate. In one example, the helper lipid may be cholesterol or cholesterol hemisuccinate.

[00380] Stealth lipids include lipids that alter the length of time the nanoparticles can exist in vivo. Stealth lipids may assist in the formulation process by, for example, reducing particle aggregation and controlling particle size. Stealth lipids may modulate pharmacokinetic properties of the LNP. Suitable stealth lipids include lipids having a hydrophilic head group linked to a lipid moiety.

[00381] The hydrophilic head group of stealth lipid can comprise, for example, a polymer moiety selected from polymers based on PEG (sometimes referred to as poly(ethylene oxide)), poly(oxazoline), poly(vinyl alcohol), poly(glycerol), poly(N- vinylpyrrolidone), polyaminoacids, and poly N-(2-hydroxypropyl)methacrylamide. The term PEG means any polyethylene glycol or other polyalkylene ether polymer. In certain LNP formulations, the PEG, is a PEG-2K, also termed PEG 2000, which has an average molecular weight of about 2,000 daltons. *See, e.g.,* WO 2017/173054 A1, herein incorporated by reference in its entirety for all purposes.

[00382] The lipid moiety of the stealth lipid may be derived, for example, from diacylglycerol

or diacylglycamide, including those comprising a dialkylglycerol or dialkylglycamide group having alkyl chain length independently comprising from about C4 to about C40 saturated or unsaturated carbon atoms, wherein the chain may comprise one or more functional groups such as, for example, an amide or ester. The dialkylglycerol or dialkylglycamide group can further comprise one or more substituted alkyl groups.

[00383] As one example, the stealth lipid may be selected from PEG-dilauroylglycerol, PEG-dimyristoylglycerol (PEG-DMG), PEG-dipalmitoylglycerol, PEG-distearoylglycerol (PEG-DSPE), PEG-dilaurylglycamide, PEG- dimyristylglycamide, PEG-dipalmitoylglycamide, and PEG-distearoylglycamide, PEG- cholesterol (l-[8'-(Cholest-5-en-3[beta]-oxy)carboxamido-3',6'-dioxaoctanyl]carbamoyl-[omega]-methyl-poly(ethylene glycol), PEG-DMB (3,4-ditetradecoxylbenzyl-[omega]-methyl-poly(ethylene glycol)ether), 1,2-dimyristoyl-sn- glycero-3-phosphoethanolamine-N-[methoxy(polyethylene glycol)-2000] (PEG2k- DMG), 1,2-distearoyl-sn-glycero-3-phosphoethanolamine-N-[methoxy(polyethylene glycol)-2000] (PEG2k-DSPE), 1,2-distearoyl-sn-glycerol, methoxypoly ethylene glycol (PEG2k-DSG), poly(ethylene glycol)-2000-dimethacrylate (PEG2k-DMA), and 1,2- distearyloxypropyl-3-amine-N-[methoxy(polyethylene glycol)-2000] (PEG2k-DSA). In one particular example, the stealth lipid may be PEG2k-DMG.

[00384] The LNPs can comprise different respective molar ratios of the component lipids in the formulation. The mol-% of the CCD lipid may be, for example, from about 30 mol-% to about 60 mol-%, from about 35 mol-% to about 55 mol-%, from about 40 mol-% to about 50 mol-%, from about 42 mol-% to about 47 mol-%, or about 45%. The mol-% of the helper lipid may be, for example, from about 30 mol-% to about 60 mol-%, from about 35 mol-% to about 55 mol-%, from about 40 mol-% to about 50 mol-%, from about 41 mol-% to about 46 mol-%, or about 44 mol-%. The mol-% of the neutral lipid may be, for example, from about 1 mol-% to about 20 mol-%, from about 5 mol-% to about 15 mol-%, from about 7 mol-% to about 12 mol-%, or about 9 mol-%. The mol-% of the stealth lipid may be, for example, from about 1 mol-% to about 10 mol-%, from about 1 mol-% to about 5 mol-%, from about 1 mol-% to about 3 mol-%, about 2 mol-%, or about 1 mol-%.

[00385] The LNPs can have different ratios between the positively charged amine groups of the biodegradable lipid (N) and the negatively charged phosphate groups (P) of the nucleic acid to be encapsulated. This may be mathematically represented by the equation N/P. For example,

the N/P ratio may be from about 0.5 to about 100, from about 1 to about 50, from about 1 to about 25, from about 1 to about 10, from about 1 to about 7, from about 3 to about 5, from about 4 to about 5, about 4, about 4.5, or about 5.

[00386] In some LNPs, the cargo can comprise Cas mRNA and gRNA. The Cas mRNA and gRNAs can be in different ratios. For example, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid ranging from about 25:1 to about 1:25, ranging from about 10:1 to about 1:10, ranging from about 5:1 to about 1:5, or about 1:1. Alternatively, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid from about 1:1 to about 1:5, or about 10:1. Alternatively, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid of about 1:10, 25:1, 10:1, 5:1, 3:1, 1:1, 1:3, 1:5, 1:10, or 1:25. Alternatively, the LNP formulation can include a ratio of Cas mRNA to gRNA nucleic acid of from about 1:1 to about 1:2. In specific examples, the ratio of Cas mRNA to gRNA can be about 1:1 or about 1:2.

[00387] Exemplary dosing of LNPs includes about 0.1, about 0.25, about 0.3, about 0.5, about 1, about 2, about 3, about 4, about 5, about 6, about 8, or about 10 mg/kg body weight (mpk) or about 0.1 to about 10, about 0.25 to about 10, about 0.3 to about 10, about 0.5 to about 10, about 1 to about 10, about 2 to about 10, about 3 to about 10, about 4 to about 10, about 5 to about 10, about 6 to about 10, about 8 to about 10, about 0.1 to about 8, about 0.1 to about 6, about 0.1 to about 5, about 0.1 to about 4, about 0.1 to about 3, about 0.1 to about 2, about 0.1 to about 1, about 0.1 to about 0.5, about 0.1 to about 0.3, about 0.1 to about 0.25, about 0.25 to about 8, about 0.3 to about 6, about 0.5 to about 5, about 1 to about 5, or about 2 to about 3 mg/kg body weight with respect to total RNA (Cas9 mRNA and gRNA) cargo content. Such LNPs can be administered, for example, intravenously. In one example, LNP doses between about 0.01 mg/kg and about 10 mg/kg, between about 0.1 and about 10 mg/kg, or between about 0.01 and about 0.3 mg/kg can be used. For example, LNP doses of about 0.01, about 0.03, about 0.1, about 0.3, about 1, about 3, or about 10 mg/kg can be used. Additional exemplary dosing of LNPs includes about 0.1, about 0.25, about 0.3, about 0.5, about 1, about 2, about 3, about 4, about 5, about 6, about 8, or about 10 mg/kg (mpk) body weight or about 0.1 to about 10, about 0.25 to about 10, about 0.3 to about 10, about 0.5 to about 10, about 1 to about 10, about 2 to about 10, about 3 to about 10, about 4 to about 10, about 5 to about 10, about 6 to about 10, about 8 to about 10, about 0.1 to about 8, about 0.1 to about 6, about 0.1 to about 5, about 0.1 to about 4, about 0.1 to about 3, about 0.1 to about 2, about 0.1 to about 1, about 0.1 to about 0.5, about 0.1 to about 0.3,

about 0.1 to about 0.25, about 0.25 to about 8, about 0.3 to about 6, about 0.5 to about 5, about 1 to about 5, or about 2 to about 3 mg/kg body weight with respect to total RNA (Cas9 mRNA and gRNA) cargo content. Such LNPs can be administered, for example, intravenously. In one example, LNP doses between about 0.01 mg/kg and about 10 mg/kg, between about 0.1 and about 10 mg/kg, or between about 0.01 and about 0.3 mg/kg can be used. For example, LNP doses of about 0.01, about 0.03, about 0.1, about 0.3, about 0.5, about 1, about 2, about 3, or about 10 mg/kg can be used. In another example, LNP doses between about 0.5 and about 10, between about 0.5 and about 5, between about 0.5 and about 3, between about 1 and about 10, between about 1 and about 5, between about 1 and about 3, or between about 1 and about 2 mg/kg can be used.

[00388] The mode of delivery can be selected to decrease immunogenicity. For example, different components may be delivered by different modes (e.g., bi-modal delivery). These different modes may confer different pharmacodynamics or pharmacokinetic properties on the subject delivered molecule. For example, the different modes can result in different tissue distribution, different half-life, or different temporal distribution. Some modes of delivery (e.g., delivery of a nucleic acid vector that persists in a cell by autonomous replication or genomic integration) result in more persistent expression and presence of the molecule, whereas other modes of delivery are transient and less persistent (e.g., delivery of an RNA or a protein). Delivery of components in a more transient manner, for example as RNA, can ensure that the Cas/gRNA complex is only present and active for a short period of time and can reduce immunogenicity. Such transient delivery can also reduce the possibility of off-target modifications.

[00389] Administration *in vivo* can be by any suitable route including, for example, via intravitreal injection or subretinal injection. Significantly smaller amounts of the components (compared with systemic approaches) may exert an effect when administered locally (for example, subretinal or intravitreal) compared to when administered systemically (for example, intravenously). Local modes of administration may also reduce or eliminate the incidence of potentially toxic side effects that may occur when therapeutically effective amounts of a component are administered systemically.

[00390] Compositions comprising the nuclease agents (e.g., Cas9 mRNAs and guide RNAs or nucleic acids encoding the guide RNAs) and/or nucleic acid constructs disclosed herein can be

formulated using one or more physiologically and pharmaceutically acceptable carriers, diluents, excipients or auxiliaries. The formulation can depend on the route of administration chosen. The term "pharmaceutically acceptable" means that the carrier, diluent, excipient, or auxiliary is compatible with the other ingredients of the formulation and not substantially deleterious to the recipient thereof.

[00391] The frequency of administration and the number of dosages can depend on the half-life of the nucleic acid constructs or nuclease agents (or nucleic acids encoding the nuclease agents) and the route of administration among other factors. The introduction of nucleic acids or proteins into the cell or animal can be performed one time or multiple times over a period of time. For example, the introduction can be performed only once over a period of time, at least two times over a period of time, at least three times over a period of time, at least four times over a period of time, at least five times over a period of time, at least six times over a period of time, at least seven times over a period of time, at least eight times over a period of time, at least nine times over a period of times, at least ten times over a period of time, at least eleven times, at least twelve times over a period of time, at least thirteen times over a period of time, at least fourteen times over a period of time, at least fifteen times over a period of time, at least sixteen times over a period of time, at least seventeen times over a period of time, at least eighteen times over a period of time, at least nineteen times over a period of time, or at least twenty times over a period of time.

[00392] Optionally, such methods can further comprise assessing expression and/or activity of the inserted retinoschisin coding sequence or the encoded retinoschisin protein in the animal or in a cell. Various methods can be used to identify cells having a targeted genetic modification. The screening can comprise a quantitative assay for assessing modification of allele (MOA) of a parental chromosome. For example, the quantitative assay can be carried out via a quantitative PCR, such as a real-time PCR (qPCR). The real-time PCR can utilize a first primer set that recognizes the target locus and a second primer set that recognizes a non-targeted reference locus. The primer set can comprise a fluorescent probe that recognizes the amplified sequence. Other examples of suitable quantitative assays include fluorescence-mediated in situ hybridization (FISH), comparative genomic hybridization, isothermic DNA amplification, quantitative hybridization to an immobilized probe(s), INVADER® Probes, TAQMAN®

Molecular Beacon probes, or ECLIPSE™ probe technology (*see, e.g.*, US 2005/0144655, herein incorporated by reference in its entirety for all purposes).

[00393] Next-generation sequencing (NGS) can also be used for screening. Next-generation sequencing can also be referred to as "NGS" or "massively parallel sequencing" or "high throughput sequencing." NGS can be used as a screening tool in addition to the MOA assays to define the exact nature of the targeted genetic modification and whether it is consistent across cell types or tissue types or organ types.

[00394] Assessing modification of the target genomic locus in an animal can be in any cell type from any tissue or organ. For example, the assessment can be in multiple cell types from the same tissue or organ (e.g., eye) or in cells from multiple locations within the tissue or organ. This can provide information about which cell types within a target tissue or organ are being targeted or which sections of a tissue or organ are being reached by the nucleic acid construct. As another example, the assessment can be in multiple types of tissue or in multiple organs. In methods in which a particular tissue, organ, or cell type is being targeted, this can provide information about how effectively that tissue or organ is being targeted and whether there are off-target effects in other tissues or organs.

[00395] Methods for measuring expression of retinoschisin can include, for example, measuring protein expression. Such methods are well-known. Such methods can also comprise assessing expression of the mRNA encoded by the retinoschisin coding sequence. This measuring can be within the eye or particular cell types or regions within the eye (e.g., retinal cells such as photoreceptors).

[00396] One example of an assay that can be used is the BASESCOPE™ RNA *in situ* hybridization (ISH) assay, which a method that can quantify cell-specific edited transcripts, including single nucleotide changes, in the context of intact fixed tissue. The BASESCOPE™ RNA ISH assay can complement NGS and qPCR in characterization of gene editing. Whereas NGS/qPCR can provide quantitative average values of wild type and edited sequences, they provide no information on heterogeneity or percentage of edited cells within a tissue. The BASESCOPE™ ISH assay can provide a landscape view of an entire tissue and quantification of wild type versus edited transcripts with single-cell resolution, where the actual number of cells within the target tissue containing the edited mRNA transcript can be quantified. The BASESCOPE™ assay achieves single-molecule RNA detection using paired oligo ("ZZ")

probes to amplify signal without non-specific background. However, the BASESCOPE™ probe design and signal amplification system enables single-molecule RNA detection with a 1 ZZ probe and it can differentially detect single nucleotide edits and mutations in intact fixed tissue.

[00397] Assays for measuring activity of a retinoschisin protein can include, for example, optical coherence tomography (OCT) and electroretinogram (ERG) testing. OCT scans can be used to score retinal cavities and/or to measure retinal photoreceptor thickness). Other assays include optokinetic tests. Such methods are well-known. For example, if the cell or animal being modified is a cell with a mutation that is associated with or causes X-linked juvenile retinoschisis (e.g., an R141C mutation), such functional assays can be used to assess rescue of the disease phenotype. Optical coherence tomography (OCT) provides high-resolution cross-sectional images of the macular region. In individuals with XLRS, OCT reveals cystic spaces primarily in the inner nuclear and outer plexiform layers of the retina. Such functional testing can also include electroretinogram (ERG) testing, which are diagnostic tests that measure the electrical activity generated by neural and non-neuronal cells in the retina in response to a light stimulus. XLRS is associated with reduced phototopic and scotopic b-wave amplitudes in ERGs.

[00398] All patent filings, websites, other publications, accession numbers and the like cited above or below are incorporated by reference in their entirety for all purposes to the same extent as if each individual item were specifically and individually indicated to be so incorporated by reference. If different versions of a sequence are associated with an accession number at different times, the version associated with the accession number at the effective filing date of this application is meant. The effective filing date means the earlier of the actual filing date or filing date of a priority application referring to the accession number if applicable. Likewise, if different versions of a publication, website or the like are published at different times, the version most recently published at the effective filing date of the application is meant unless otherwise indicated. Any feature, step, element, embodiment, or aspect of the invention can be used in combination with any other unless specifically indicated otherwise. Although the present invention has been described in some detail by way of illustration and example for purposes of clarity and understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims.

BRIEF DESCRIPTION OF THE SEQUENCES

[00399] The nucleotide and amino acid sequences listed in the accompanying sequence listing are shown using standard letter abbreviations for nucleotide bases, and three-letter code for amino acids. The nucleotide sequences follow the standard convention of beginning at the 5' end of the sequence and proceeding forward (i.e., from left to right in each line) to the 3' end. Only one strand of each nucleotide sequence is shown, but the complementary strand is understood to be included by any reference to the displayed strand. When a nucleotide sequence encoding an amino acid sequence is provided, it is understood that codon degenerate variants thereof that encode the same amino acid sequence are also provided. The amino acid sequences follow the standard convention of beginning at the amino terminus of the sequence and proceeding forward (i.e., from left to right in each line) to the carboxy terminus.

[00400] Table 4. Description of Sequences.

SEQ ID NO	Type	Description
1	Protein	Mouse Retinoschisin (UniProt Q9Z1L4)
2	Protein	Human Retinoschisin (UniProt O15537)
3	Protein	Human Retinoschisin R141C
4	Protein	Chimeric Mouse-Human Retinoschisin
5	Protein	Human Portion of Chimeric Human Retinoschisin
6	DNA	Human *RS1* Coding Sequence (NCBI CCDS14187.1)
7	DNA	Mouse *Rs1* Sequence in Hybrid cDNA
8	DNA	Human *RS1* cDNA Exons 2-6
9	DNA	Codon-Optimized Human *RS1* cDNA Exons 2-6
10	DNA	Reverse Complement of Codon-Optimized Human *RS1* cDNA Exons 2-6
11	DNA	T^{h} Hybrid *RS1* cDNA
12	DNA	T^{mh} Hybrid *RS1* cDNA
13	DNA	T^{h} Nucleotide Sequence (SA, *hRS1*, polyA)
14	DNA	T^{mh} Hybrid *RS1* Sequence (SA, *hRS1*, polyA)
15	DNA	Fragment of Human *RS1* Intron 1 with Splice Acceptor (V1)
16	DNA	Fragment of Human *RS1* Intron 1 with Splice Acceptor (V1)
17	DNA	Mouse Splice Acceptor V1
18	DNA	Mouse Splice Acceptor V2
19	DNA	Reverse Complement of Mouse Splice Acceptor V1
20	DNA	Reverse Complement of Mouse Splice Acceptor V2
21	DNA	ADML Splice Acceptor
22	DNA	bGH PolyA
23	DNA	SV40 PolyA
24	DNA	Reverse Complement of SV40 PolyA
25	DNA	Human *RS1* PolyA
26	DNA	Cas9 DNA
27	Protein	Cas9 Protein
28	DNA	Cas9 cDNA
29	RNA	crRNA Tail
30	RNA	TracrRNA V1
31	RNA	TracrRNA V2

SEQ ID NO	Type	Description
32	RNA	TracrRNA V3
33	RNA	Guide RNA Scaffold V1
34	RNA	Guide RNA Scaffold V2
35	RNA	Guide RNA Scaffold V3
36	RNA	Guide RNA Scaffold V4
37	RNA	Guide RNA Scaffold V5
38	RNA	Guide RNA Scaffold V6
39	RNA	Guide RNA Scaffold V7
40	DNA	Guide RNA Target Sequence Plus PAM V1
41	DNA	Guide RNA Target Sequence Plus PAM V2
42	DNA	Guide RNA Target Sequence Plus PAM V3
43	RNA	Mouse *Rs1* Intron 1 Guide RNA
44	DNA	Generic Modified sgRNA
45	DNA	pAAV hRs1_cDNA, HITI
46	DNA	pscAAV_Rs1_tandem.sgU
47	DNA	pAAV_mhRs1_sgU
48	Protein	Mouse Retinoschisin R141C
49	Protein	NLS v1
50	Protein	NLS v2
51	Protein	NLS v3
52	RNA	crRNA Tail v2
53	RNA	Guide RNA Scaffold V8
54-1895	DNA	Human *RS1* Intron 1 Guide RNA Target Sequences
1896-3147	DNA	Mouse *Rs1* Intron 1 Guide RNA Target Sequences
3148-4989	RNA	Human *RS1* Intron 1 Guide Sequences
4990-6241	RNA	Mouse *Rs1* Intron 1 Guide Sequences
6242	Protein	Cas9 Protein
6243	RNA	Cas9 mRNA
6244	DNA	Cas9 DNA
6245	RNA	Cas9 mRNA
6246	Protein	Cas9 Protein
6247	DNA	HDR-1800 Construct
6248	DNA	HDR-900 Construct
6249	DNA	HDR-450 Construct

EXAMPLES

Example 1. Insertion of *RS1* Coding Sequence into Mouse *Rs1* Locus in XLRS Mouse Model

[00401] In order to model potential X-linked juvenile retinoschisis therapy (XLRS) CRISPR therapeutics strategies *in vivo,* we generated a mouse line with constitutive expression of Cas9 protein in all tissues ($Rosa^{Cas9/+}$; *see, e.g.*, US 2019/0032155 and WO 2019/028032, each of which is herein incorporated by reference in its entirety for all purposes) and crossed it to mice containing a mutant copy of murine *retinoschisin (Rs1)* ($Rs1^{R141C/Y}$) to generate $Rosa^{Cas9/+}$; $Rs1^{R141C/Y}$ mice. The mice with the *Rs1* R141C mutation, which causes intracellular retention of

retinoschisin to replicate key features of the human condition, including intraretinal schisis, retinal degeneration, and a reduced ERG b-wave.

[00402] The *Rs1* gene is a highly conserved extracellular protein involved in the cellular organization of the retina. It is assembled and secreted from photoreceptors and bipolar cells as a homo-oligomeric protein complex. Over 200 mutations have been detected in *Rs1,* many leading to early onset of macular degeneration due to a non-functional protein or the absence of protein secretion. Lack of functional *Rs1* expression causes schisis within the retinal layers leading to the early and progressive vision loss associated with XLRS. To date, there are no publications reporting pre-clinical or clinical studies using Cas9 technology for XLRS treatment. Here, we describe an approach for the use of Cas9 in combination with adeno-associated virus (AAV) to rescue the non-secreting R141C variant of *Rs1* in mice. The constructs are designed to be integrated into the endogenous *Rs1* locus in the retina (e.g., photoreceptors), where the hybrid mouse-human *RS1* transcript will be expressed through the endogenous *Rs1* promoter.

[00403] Subretinal delivery of AAV serotype 7m8 has led to successful expression of transgenes (data not shown). While AAVs have the potential to persist ectopically for a year or more, we endeavor to develop a strategy for permanent rescue of mutant *Rs1* phenotypes. To this end, three viral vectors were designed encoding WT human *RS1* exons 2-6 (without a promoter) as well as a guide RNA targeting mouse *Rs1* intron 1. The sequence of the guide RNA is set forth in SEQ ID NO: 43, and the guide RNA target sequence in mouse *Rs1* intron 1 is set forth in SEQ ID NO: 2383. Upon injection of any one of these viruses into *RosaCas9*/+ ; *Rs1R141C/Y* mice, we expected the guide RNA expression to lead to cutting at the *Rs1* locus and integration of the viral genome containing the human *RS1* cDNA fragment. The mouse *Rs1* locus is shown in **Figure 1**. Mouse exon 1 would splice into human exon 2-6 cDNA (**Figure 2**), and expression of the hybrid mouse human protein should prevent transcription of mutant mouse *Rs1*.

[00404] Viral vector version 1 (SEQ ID NO: 47) was generated by bidirectional insertion in a single stranded AAV (ssAAV) vector. Two hundred bases of *RS1* human intron 1 (containing exon 2 splice signals) were placed in front of a cDNA encoding exons 2-6 of human *RS1* transcript followed by bovine growth hormone (bGH) polyA (T^h). A second human cDNA was generated with mouse codon optimization and integrated into the vector in the opposite orientation. This sequence was flanked by 200 bp containing the mouse splice signals and an SV40 polyA (T^{mh}). The sequences were designed to be divergent enough so as to reduce the

likelihood of viral transcripts self-annealing. Further, an sgRNA expression unit was added in between the transcripts (**Figure 3A**). The benefit of this strategy is that the viral genome can be inserted in either orientation and still form a viable reading frame for allele rescue.

[00405] Viral vector version 2 (SEQ ID NO: 46) was generated by bidirectional insertion in a self-complimentary AAV (scAAV) vector. This version is configured just as version 1, with two differences. First, the sequence was incorporated into a self-complimentary AAV vector. Second, to comply with the maximum self-complimentary genome size of 2100 bp, the splice signal regions were reduced to 60 bp (**Figure 3A**).

[00406] Viral vector version 3 (SEQ ID NO: 45) was designed for homology-independent targeted integration (HITI). HITI leverages the need for the Cas9 recognition sequence to have a protospacer adjacent motif (PAM). The construct was designed to express T^h and the same guide RNA targeting the *Rs1* intron 1. However, where versions 1 and 2 do not contain guide RNA target sequences, version 3 is flanked by an inverted guide RNA target sequence on each side (**Figure 3B**). Once the viral genome is double-stranded, it will express one guide RNA sequence that should simultaneously cause a double-strand break in mouse *Rs1* intron 1 as well as on both sides of the viral genome, effectively cleaving off the ITR sequences. The liberated viral genome is now free to insert into the mouse genome in either orientation. However, if the cDNA integrates in the reverse orientation, the guide RNA target sequences should be reconstituted and available for further Cas9 cleavage. If the cDNA integrates in the desired orientation, the guide RNA target sequences will be destroyed, and the sequence locked in place.

[00407] While the *Rs1* sequences of version 1 and 2 are near identical, the viral backbones may change the timing of double-stranded viral production and thus impact gene insertion efficiencies. An scAAV will become double stranded faster than an ssAAV due to differences in the mechanism by which the second strand is synthesized. Both ITRs in ssAAVs can act as replication origins and contain single-stranded nuclease domains that cut newly synthesized strands. Replication can be initiated from either ITR, so a mixture of the + strand and – strand will be generated. Once the polymerase gets to the other ITR, the synthesized strand is cleaved and released. The primary mechanism to synthesize the compliment strand is to use host-cell machinery. However, at a low level, the + and – strands synthesized by the virus may spontaneously anneal to create the double-stranded virus. In the case of scAAV, one of the two ITR sequences is mutated to remove the nuclease domain. The replication fork starts at the active

ITR and moves through the mutant ITR, without being cleaved, and the synthesis continues on the opposite strand. The single-stranded synthesis containing both the + and – strand self-compliment to make the double-stranded virus.

[00408] Versions 1-3 were each able to mediate gene insertion at the mouse *Rs1* locus in the Cas9 mouse background. In the pilot study, a small amount of virus was injected into right eye of each mouse, and the left eye was not injected as a control. Both retinas were harvested and cut in half. Half of each retina was used for non-homologous end joining (NHEJ) characterization at the intron 1 of mouse *Rs1* locus. The other half was used to generate cDNA for NGS amplicon sequencing over the mutant region. Due to PCR efficiencies and bias, we were able to amplify each transcript variant, but we could not quantify the actual expression profiles. NHEJ characterization provides a clue to guide RNA activity as well as insertion activity. Detection of NHEJ implies an allele without gene insertion that will likely express the mutant mouse transcript. Detection of either modified transcript indicates that gene insertion has occurred.

[00409] Thirteen mice were injected in the right eyes: three for version 1, and five each for versions 2 and 3. All injected eyes had improved retinal organization as seen in optical coherence tomography (OCT) imaging. *See* **Figure 4**. Scoring of retinal cavities shown in OCT scans (containing 61 images each) from 3 different locations of each eye was conducted based on the following preset criteria by three independent readers. A score of 1 was assigned if there were 1-4 cavities on at least one individual image. A score of 2 was assigned if there were ≥ 4 cavities on at least one individual image, but the cavities were not fused. A score of 3 was assigned if there were fused cavities on at least one individual image. A score of 4 was assigned if there were fused cavities on at least one individual image and the retina was stretched. The average scores for each treatment group were compared with a control group containing the pooled non-treated eyes by nonparametric Kruskal–Wallis one-way analysis of variance and Post hoc test Dunn's multiple comparisons test.

[00410] Next generation targeted resequencing amplicons were designed for the regions depicted in **Figure 3** (horizontal arrows) as these regions are distinct in the four expected sequence variants ((1) WT mouse, the mouse reference sequence not containing the R141C mutant; (2) mutant mouse, the mouse reference sequence harboring the R141C mutant; (3) humanized transcript 1, the human reference sequence; and (4) humanized transcript 2, the mouse codon-optimized human reference sequence). Mouse retinas were harvested from study

mice and total mRNA was extracted from the tissues. mRNA was used to generate cDNA to act as a template for next generation sequencing (NGS) amplification. Target-specific oligos with incorporated barcodes for sequence identification were used to amplify all four variants per tissue. The PCR products from each mouse were normalized and pooled into a single tube for further preparation. The finalized library was loaded on to a MiSeq and the 2x300 program was used to sequence samples. Informatic codes were then used to deconvolute the samples and create a de novo sequence reference. The number of reads that matched each variant were quantified and the percentage was obtained by dividing the variant read count by the total read count. As expected, WT mouse sequences were only found in female $Rosa^{Cas9/+};Rs1^{R141C/+}$ mice. The NGS results for the four expected sequence variants are shown in **Figure 5**. PCR bias and efficiency are not accounted for. A separate amplicon was used to amplify the *Rs1* intron 1 guide RNA target sequence. Reads that matched the mouse reference sequence or contained non-homologous end joining were quantified to assess how often the guide RNA cut without making an insertion. *See* **Figures 6A** and **6B**. Bar graphs showing some of the data from the tables in **Figure 5** are shown in **Figures 7A-7C** for versions 1-3, respectively.

[00411] All mice showed varying levels of all transcripts, with more T^{h} reads than T^{mh} reads in all mice. As expected, mice with very high NHEJ rates had lower amounts of human transcripts present. While versions 1 and 2 had similar sequence profiles, version 3 had a greater presence of residual mutant mouse transcript. This was likely due to the need for a specific insertion orientation. While the guide RNA design should help to push the insertion towards the desired insertion, it is likely that Cas9 cleavage damaged the recognition sequences beyond the possibility of re-targeting. Additionally, a large insertion/deletion (indel) on the viral genome may have disrupted the splice signals and prevented proper expression.

Example 2. Insertion of *RS1* Coding Sequence into Human *RS1* Locus in Human Retinoblastoma Cells

[00412] We next tested insertion of *RS1* coding sequence into the human *RS1* locus in WERI-Rb1 human retinoblastoma cells *in vitro*. The WERI-Rb1 cell line (ATCC® HTB 169TM) was derived from human retinoblastoma. Retinoblastoma cells are precursors of photoreceptors and are an appropriate *in vitro* photoreceptor cell model because photoreceptor cell lines are not available. The cells were characterized in-house with retinal specific cell markers by ICC and RT-PCR, which showed only cone-specific mRNAs/proteins but not their rod counterparts were

found, suggesting that this neoplasm was of cone cell lineage. In addition, RS1 was reported to be expressed and released by WERI-Rb1 cells. We also detected RS1 expression at mRNA level and protein levels (data not shown). Lipid nanoparticles (LNPs) were formulated with one of six guide RNAs targeting intron 1 of the human *RS1* and Cas9 mRNA (sequence set forth in SEQ ID NO: 6245).

[00413] Table 5. Human *RS1* Guide RNAs.

gRNA	Guide RNA Target Sequence (5' to 3')	Direction	SEQ ID NO
hG1	CTGTATCTTCTTAGCCAGTA	+	57
hG2	CCCTTTTGTACGTTTTTTAA	+	56
hG3	AAAAAAGGACTTGACATGCA	+	65
hG4	AGAGCTTTGGCCGAGGACGA	+	1210
hG5	TCTAGGACTTCTTCGCATCG	-	1203
hG6	AGTCTGAGGCTGGGGCAACT	-	581

[00414] In a first experiment, human retinoblastoma cells in suspension were transduced with approximately 5e5 MOI of AAV donor (viral vector versions 1 and 2 from Example 1), and CRISPR/Cas9 LNPs were administered 2 hours post-infection. All LNPs were dosed at 500 ng per well (48-well plate), except the "high" samples, which were dosed at 1000 ng LNP. Complete gene expression analysis by RT-qPCR was then done. RT-qPCR was performed by harvesting the total RNA from samples and treating them with DNAse to degrade all DNA contained in the samples. Next, the RNA samples were subjected to reverse transcription to create cDNA for all mRNA contained in the sample. Target specific TaqMan assays were then used to quantify the unique *RS1* sequences expressed in the cells. RNA was harvested 72 hours post-infection. A no reverse transcription control was completed by harvesting the total RNA and DNAase treating as above. For the control, the reverse transcription polymerase was replaced with water such that no cDNA should be generated. Reverse transcribed and control non-reverse transcribed samples were run with a housekeeping gene (DROSHA). Results for viral vector version 1 (bidirectional insertion in a single stranded AAV (ssAAV) vector) are shown in **Figure 8A**. Results for viral vector version 1 (bidirectional insertion in a self-complimentary AAV (scAAV) vector) are shown in **Figure 8B**. These results are shown as delta Ct in order to normalize differences in RNA quantity and quality. The lower the number, the higher the expression of the target sequence. These results indicate robust expression of the introduced sequences. TaqMan assays and viral sequences were optimized to reduce cross-detection of the

endogenous human *RS1* expression. In a second experiment, human retinoblastoma cells in suspension were transduced with approximately 5e5 MOI of AAV donor (viral vector versions 1 and 2 from Example 1), and CRISPR/Cas9 LNPs were administered 2 hours prior to infection. All LNPs were dosed at 500 ng per well (48-well plate), except the "high" samples, which were dosed at 1000 ng LNP. Complete gene expression analysis by RT-qPCR was then done. Results for viral vector version 1 (bidirectional insertion in a single stranded AAV (ssAAV) vector) are shown in **Figure 9A**. Results for viral vector version 1 (bidirectional insertion in a self-complimentary AAV (scAAV) vector) are shown in **Figure 9B**. These results are shown as delta Ct in order to normalize differences in RNA quantity and quality. The lower the number, the higher the expression of the target sequence. These results indicate robust expression of the introduced sequences. TaqMan assays and viral sequences were optimized to reduce cross-detection of the endogenous human *RS1* expression.

Example 3. Insertion of *RS1* Coding Sequence into Mouse *Rs1* Locus in XLRS Mouse Model via Homologous Recombination

[00415] In order to model potential X-linked juvenile retinoschisis therapy (XLRS) CRISPR therapeutics strategies *in vivo,* we use the mouse line described in Example 1 with constitutive expression of Cas9 protein in all tissues crossed to mice containing a mutant copy of murine *retinoschisin (Rs1)* (*Rosa*$^{Cas9/+}$; *Rs1*$^{R141C/Y}$ mice). CRISPR/Cas9 is used in combination with adeno-associated virus (AAV) to rescue the non-secreting R141C variant of *Rs1* in mice. The constructs are designed to be integrated into the endogenous *Rs1* locus in the retina (e.g., photoreceptors) via homologous recombination, where the hybrid mouse-human *RS1* transcript will be expressed through the endogenous *Rs1* promoter. The mice are at the age of P14 when the retina is still undergoing mitosis, cellular differentiation, and maturation. Injection is during mitosis of the retina, and the evaluation is post-mitosis at 2 months post-injection.

[00416] Three viral vectors were designed encoding WT human *RS1* exons 2-6 (without a promoter) as well as a guide RNA targeting mouse *Rs1* intron 1 (guide RNA target sequence set forth in SEQ ID NO: 2887), with all of these elements flanked by homology arms. *See* **Figure 10**. These elements are flanked by an inverted guide RNA target sequence on each side. Once the viral genome is double-stranded, it will express one guide RNA sequence that simultaneously causes a double-strand break in mouse *Rs1* intron 1 as well as on both sides of the viral genome,

effectively cleaving off the ITR sequences. The homology arms in the first viral vector are approximately 1800 bp each, the homology arms in the second viral vector are approximately 900 bp each, and the homology arms in the third viral vector are approximately 450 bp each. The sequences for the three vectors are set forth in SEQ ID NOS: 6247-6249, respectively. Upon injection of any one of these viruses into the eye of *RosaCas9*/+ ; *Rs1R141C/Y* mice, guide RNA expression leads to cutting at the *Rs1* locus and homologous recombination with the viral genome containing the human *RS1* cDNA fragment. The mouse *Rs1* locus is shown in **Figure 1**. Mouse exon 1 splices into human exon 2-6 cDNA (**Figure 2**), and expression of the hybrid mouse human protein prevents transcription of mutant mouse *Rs1*.

[00417] Retinas are harvested and cut in half. Half of each retina is used for non-homologous end joining (NHEJ) characterization at the intron 1 of mouse *Rs1* locus. The other half is used to generate cDNA for NGS amplicon sequencing over the mutant region. NHEJ characterization provides information on guide RNA activity as well as insertion activity. Detection of NHEJ implies an allele without gene insertion that will likely express the mutant mouse transcript. Detection of the inserted transcript indicates that gene insertion has occurred.

[00418] Retinal organization is assessed by optical coherence tomography (OCT) imaging. Scoring of retinal cavities in OCT scans is conducted based on the following preset criteria by three independent readers. A score of 1 is assigned if there are 1-4 cavities on at least one individual image. A score of 2 is assigned if there are $\geq$ 4 cavities on at least one individual image, but the cavities are not fused. A score of 3 is assigned if there are fused cavities on at least one individual image. A score of 4 is assigned if there are fused cavities on at least one individual image and the retina is stretched. The average scores for each treatment group are compared with a control group containing the pooled non-treated eyes by nonparametric Kruskal–Wallis one-way analysis of variance and Post hoc test Dunn's multiple comparisons test.

[00419] Mouse retinas are harvested from study mice, and total mRNA is extracted from the tissues. mRNA is used to generate cDNA to act as a template for next generation sequencing (NGS) amplification. Target-specific oligos with incorporated barcodes for sequence identification are used to amplify all variants per tissue. The PCR products from each mouse are normalized and pooled into a single tube for further preparation. The finalized library is loaded on to a MiSeq, and the 2x300 program is used to sequence samples. Informatic codes are then

used to deconvolute the samples and create a de novo sequence reference. The number of reads that match each variant are quantified, and the percentage is obtained by dividing the variant read count by the total read count.

Example 4. Insertion of *RS1* Coding Sequence into Human *RS1* Locus in Human Retinoblastoma Cells via Homologous Recombination

[00420] We next test insertion of *RS1* coding sequence into the human *RS1* locus via homologous recombination in human retinoblastoma cells *in vitro*. Lipid nanoparticles (LNPs) are formulated with guide RNAs targeting intron 1 of the human *RS1* and Cas9 mRNA. In a first experiment, human retinoblastoma cells in suspension are transduced with approximately 5e5 MOI of AAV donor (viral vectors from Example 3, but with human *RS1* homology arms), and CRISPR/Cas9 LNPs are administered 2 hours post-infection. All LNPs are dosed at 500 ng per well or 1000 ng per well. Complete gene expression analysis by RT-qPCR is then done. In a second experiment, human retinoblastoma cells in suspension are transduced with approximately 5e5 MOI of AAV donor (viral vectors from Example 3, but with human *RS1* homology arms), and CRISPR/Cas9 LNPs were administered 2 hours prior to infection. All LNPs were dosed at 500 ng per well or 1000 ng per well. Complete gene expression analysis by RT-qPCR is then done.

2020379046 11 Feb 2025

The claims defining the invention are as follows:

1. A composition or combination for use in expressing retinoschisin or integrating a coding sequence for a retinoschisin protein or functional fragment thereof into a target genomic locus in a retinal cell, comprising:

(a) a nucleic acid construct comprising the coding sequence for the retinoschisin protein or functional fragment thereof for integration into the target genomic locus, wherein the coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof,

wherein the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or functional fragment thereof, wherein:

(I) the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, and

(II) the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, optionally wherein the splice acceptor site is from intron 1 of human *RS1*; and

(b) a nuclease agent comprising a Cas protein or a nucleic acid encoding the Cas protein and a guide RNA or a DNA encoding the guide RNA, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus,

wherein the target genomic locus is in an endogenous *RS1* locus comprising an endogenous *RS1* gene,

wherein integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site,

wherein the integration of the nucleic acid construct into the endogenous *RS1* locus in the retinal cell reduces or eliminates expression of endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or functional fragment thereof encoded by the nucleic acid construct, and

wherein (a) and (b) are administered simultaneously or sequentially, in any order.

2. The composition or combination for use of claim 1, wherein the nucleic acid construct comprises a fragment or portion of the first intron of human *RS1* located 5' of the coding sequence.

2020379046 11 Feb 2025

3. The composition or combination for use of claim 1 or 2, wherein the nucleic acid construct is for homology-independent targeted integration into the target genomic locus, wherein the nucleic acid construct comprises the coding sequence for the retinoschisin protein or functional fragment thereof flanked on each side by a nuclease target sequence for a nuclease agent, optionally:

(I) wherein the nuclease target sequence in the target genomic locus is identical to the nuclease target sequence in the nucleic acid construct, and wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted into the target genomic locus in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation; or

(II) wherein the coding sequence for the retinoschisin protein or functional fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, and

wherein the nuclease target sequence in the target genomic locus is identical to the nuclease target sequence in the nucleic acid construct, and wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted into the target genomic locus in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation.

4. The composition or combination for use of claim 1 or 2, wherein the nucleic acid construct is for homologous recombination with the target genomic locus, wherein the nucleic acid construct comprises the coding sequence for the retinoschisin protein or functional fragment thereof flanked by homology arms on each side, optionally wherein the coding sequence and homology arms are further flanked on each side by a nuclease target sequence for a nuclease agent, and optionally wherein each homology arm is between about 25 nucleotides and about 2.5 kb in length,

optionally wherein the retinoschisin protein or functional fragment thereof is a human retinoschisin protein or functional fragment thereof, the coding sequence for the retinoschisin protein or functional fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, and each homology arm is between about 25 nucleotides and about 2.5 kb in length.

5. The composition or combination for use of claim 1 or 2, wherein the nucleic acid construct is bidirectional and comprises:

2020379046 11 Feb 2025

(a) a first segment comprising a first coding sequence for a first retinoschisin protein or functional fragment thereof, wherein the first coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof; and

(b) a second segment comprising a reverse complement of a second coding sequence for a second retinoschisin protein or functional fragment thereof, wherein the second coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof,

optionally:

(I) wherein the nucleic acid construct does not comprise a homology arm; or

(II) wherein the first retinoschisin protein or functional fragment thereof is identical to the second retinoschisin protein or functional fragment thereof, and wherein the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence; or

(III) wherein the second segment is located 3' of the first segment,

wherein both the first retinoschisin protein or functional fragment thereof and the second retinoschisin protein or functional fragment thereof are a human retinoschisin protein or functional fragment thereof,

wherein the first retinoschisin protein or functional fragment thereof is identical to the second retinoschisin protein or functional fragment thereof,

wherein both the first coding sequence and the second coding sequence comprise complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof,

wherein the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence,

wherein the first segment comprises a first polyadenylation signal sequence located 3' of the first coding sequence, and the second segment comprises a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence,

wherein the first segment comprises a first splice acceptor site located 5' of the first coding sequence, and the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence,

2020379046 11 Feb 2025

wherein the nucleic acid construct does not comprise a promoter that drives expression of the first retinoschisin protein or functional fragment thereof or the second retinoschisin protein or functional fragment thereof, and

wherein the nucleic acid construct does not comprise a homology arm.

6. The composition or combination for use of any one of claims 1-5, wherein the nuclease target sequence in the target genomic locus is in the first intron in the endogenous *RS1* gene at the endogenous *RS1* locus.

7. The composition or combination for use of any one of claims 1-6, wherein the nucleic acid construct is in a viral vector, optionally wherein the viral vector is an adeno-associated virus (AAV) viral vector, and optionally wherein the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, and AAV7m8.

8. The composition or combination for use of any one of claims 1-7, wherein the Cas protein is a Cas9 protein, optionally wherein:

(I) the composition or combination comprises a DNA encoding the Cas protein, and wherein the composition or combination comprises the DNA encoding the guide RNA, and optionally wherein the DNA encoding the Cas protein and the DNA encoding the guide RNA are in one or more viral vectors; or

(II) the composition or combination comprises a messenger RNA encoding the Cas protein, wherein the composition or combination comprises the guide RNA in the form of RNA, and optionally wherein the guide RNA and the messenger RNA encoding the Cas protein are in a lipid nanoparticle.

9. The composition or combination for use of any one of claims 1-8, wherein the endogenous *RS1* locus comprises a mutated *RS1* gene comprising a mutation that causes X-linked juvenile retinoschisis.

10. The composition or combination for use of any one of claims 1-9, wherein the retinal cell is a human retinal cell.

11. The composition or combination for use of any one of claims 1-10, wherein the retinal cell is *in vivo* in an animal,

2020379046 11 Feb 2025

optionally wherein integration of the nucleic acid construct results in retinal structural restoration.

12. A method of expressing retinoschisin or integrating a coding sequence for a retinoschisin protein or functional fragment thereof into a target genomic locus in a retinal cell, comprising administering to the retinal cell a composition or combination comprising:

(a) a nucleic acid construct comprising the coding sequence for the retinoschisin protein or functional fragment thereof for integration into the target genomic locus, wherein the coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof,

wherein the nucleic acid construct does not comprise a promoter that drives expression of the retinoschisin protein or functional fragment thereof, and wherein:

(I) the nucleic acid construct comprises a polyadenylation signal sequence located 3' of the coding sequence, and

(II) the nucleic acid construct comprises a splice acceptor site located 5' of the coding sequence, optionally wherein the splice acceptor site is from intron 1 of human *RS1*; and

(b) a nuclease agent comprising a Cas protein or a nucleic acid encoding the Cas protein and a guide RNA or a DNA encoding the guide RNA, wherein the nuclease agent targets a nuclease target sequence in the target genomic locus,

wherein the target genomic locus is in an endogenous *RS1* locus comprising an endogenous *RS1* gene,

wherein integration of the nucleic acid construct into the endogenous *RS1* locus prevents transcription of the endogenous *RS1* gene downstream of the integration site,

wherein the integration of the nucleic acid construct into the endogenous *RS1* locus in the retinal cell reduces or eliminates expression of endogenous retinoschisin protein and replaces it with expression of the retinoschisin protein or functional fragment thereof encoded by the nucleic acid construct, and

wherein (a) and (b) are administered simultaneously or sequentially, in any order.

13. The method of claim 12, wherein the nucleic acid construct comprises a fragment or portion of the first intron of human *RS1* located 5' of the coding sequence.

2020379046 11 Feb 2025

14. The method of claim 12 or 13, wherein the nucleic acid construct is for homology-independent targeted integration into the target genomic locus, wherein the nucleic acid construct comprises the coding sequence for the retinoschisin protein or functional fragment thereof flanked on each side by a nuclease target sequence for a nuclease agent, optionally:

(I) wherein the nuclease target sequence in the target genomic locus is identical to the nuclease target sequence in the nucleic acid construct, and wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted into the target genomic locus in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation; or

(II) wherein the coding sequence for the retinoschisin protein or functional fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, and

wherein the nuclease target sequence in the target genomic locus is identical to the nuclease target sequence in the nucleic acid construct, and wherein the nuclease target sequence in the target genomic locus is destroyed if the nucleic acid construct is inserted into the target genomic locus in the correct orientation but is reformed if the nucleic acid construct is inserted into the target genomic locus in the opposite orientation.

15. The method of claim 12 or 13, wherein the nucleic acid construct is for homologous recombination with the target genomic locus, wherein the nucleic acid construct comprises the coding sequence for the retinoschisin protein or functional fragment thereof flanked by homology arms on each side, optionally wherein the coding sequence and homology arms are further flanked on each side by a nuclease target sequence for a nuclease agent, and optionally wherein each homology arm is between about 25 nucleotides and about 2.5 kb in length,

optionally wherein the retinoschisin protein or functional fragment thereof is a human retinoschisin protein or functional fragment thereof, the coding sequence for the retinoschisin protein or functional fragment thereof comprises complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof, and each homology arm is between about 25 nucleotides and about 2.5 kb in length.

16. The method of claim 12 or 13, wherein the nucleic acid construct is bidirectional and comprises:

2020379046 11 Feb 2025

(a) a first segment comprising a first coding sequence for a first retinoschisin protein or functional fragment thereof, wherein the first coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof; and

(b) a second segment comprising a reverse complement of a second coding sequence for a second retinoschisin protein or functional fragment thereof, wherein the second coding sequence comprises exons 2-6 of human *RS1* or degenerate variants thereof,

optionally:

(I) wherein the nucleic acid construct does not comprise a homology arm; or

(II) wherein the first retinoschisin protein or functional fragment thereof is identical to the second retinoschisin protein or functional fragment thereof, and wherein the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence; or

(III) wherein the second segment is located 3' of the first segment,

wherein both the first retinoschisin protein or functional fragment thereof and the second retinoschisin protein or functional fragment thereof are a human retinoschisin protein or functional fragment thereof,

wherein the first retinoschisin protein or functional fragment thereof is identical to the second retinoschisin protein or functional fragment thereof,

wherein both the first coding sequence and the second coding sequence comprise complementary DNA (cDNA) comprising exons 2-6 of human *RS1* or degenerate variants thereof,

wherein the second coding sequence adopts a different codon usage from the codon usage of the first coding sequence,

wherein the first segment comprises a first polyadenylation signal sequence located 3' of the first coding sequence, and the second segment comprises a reverse complement of a second polyadenylation signal sequence located 5' of the reverse complement of the second coding sequence,

wherein the first segment comprises a first splice acceptor site located 5' of the first coding sequence, and the second segment comprises a reverse complement of a second splice acceptor site located 3' of the reverse complement of the second coding sequence,

2020379046 11 Feb 2025

wherein the nucleic acid construct does not comprise a promoter that drives expression of the first retinoschisin protein or functional fragment thereof or the second retinoschisin protein or functional fragment thereof, and

wherein the nucleic acid construct does not comprise a homology arm.

17. The method of any one of claims 12-16, wherein the nuclease target sequence in the target genomic locus is in the first intron in the endogenous *RS1* gene at the endogenous *RS1* locus.

18. The method of any one of claims 12-17, wherein the nucleic acid construct is in a viral vector, optionally wherein the viral vector is an adeno-associated virus (AAV) viral vector, and optionally wherein the AAV is selected from the group consisting of: AAV2, AAV5, AAV8, and AAV7m8.

19. The method of any one of claims 12-18, wherein the Cas protein is a Cas9 protein, optionally wherein:

(I) the composition or combination comprises a DNA encoding the Cas protein, and wherein the composition or combination comprises the DNA encoding the guide RNA, and optionally wherein the DNA encoding the Cas protein and the DNA encoding the guide RNA are in one or more viral vectors; or

(II) the composition or combination comprises a messenger RNA encoding the Cas protein, wherein the composition or combination comprises the guide RNA in the form of RNA, and optionally wherein the guide RNA and the messenger RNA encoding the Cas protein are in a lipid nanoparticle.

20. The method of any one of claims 12-19, wherein the endogenous *RS1* locus comprises a mutated *RS1* gene comprising a mutation that causes X-linked juvenile retinoschisis.

21. The method of any one of claims 12-20, wherein the retinal cell is a human retinal cell.

22. The method of any one of claims 12-21, wherein the retinal cell is *in vivo* in an animal,

2020379046 11 Feb 2025

optionally wherein integration of the nucleic acid construct results in retinal structural restoration.

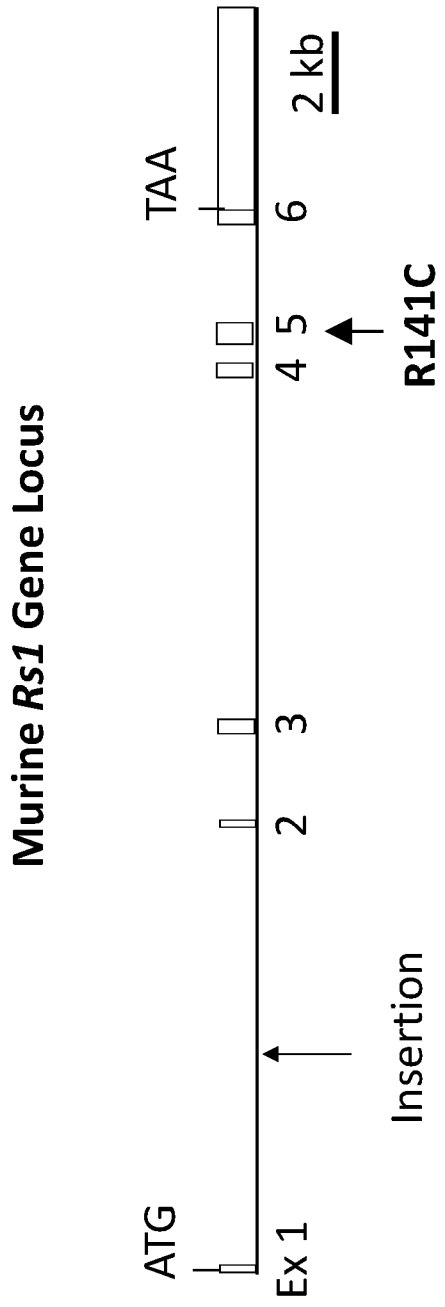


FIG. 1

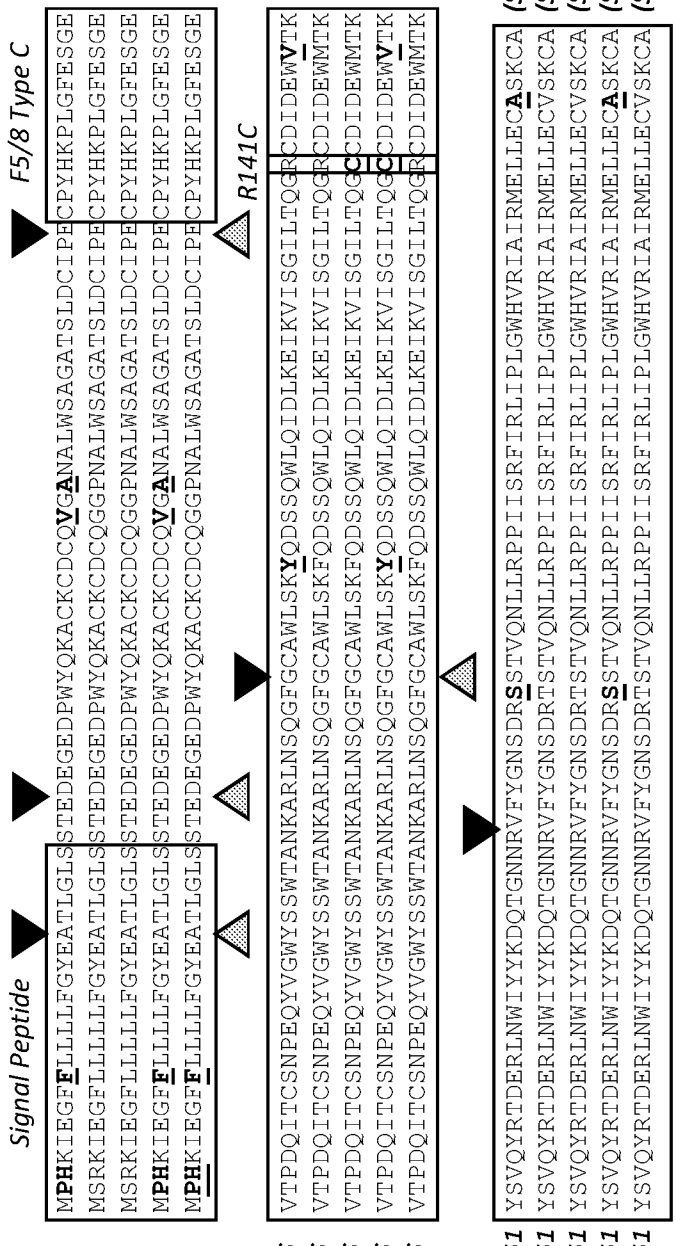

Signal Peptide
F5/8 Type C
R141C
mRS1 1 MPHKIEGFFLLLLFGYEATLGLSSTEDEGEDPWYQKACKCDCQVGANALWSAGATSLDCIPHCPYHKPLGFESGE
hRS1 1 MSRKIEGFLLLLLFGYEATLGLSSTEDEGEDPWYQKACKCDCQGGPNALWSAGATSLDCIPHCPYHKPLGFESGE
hRS1_R141C 1 MSRKIEGFLLLLLFGYEATLGLSSTEDEGEDPWYQKACKCDCQGGPNALWSAGATSLDCIPHCPYHKPLGFESGE
mRS1_R141C 1 MPHKIEGFFLLLLFGYEATLGLSSTEDEGEDPWYQKACKCDCQVGANALWSAGATSLDCIPHCPYHKPLGFESGE
mhRS1 hybrid 1 MPHKIEGFFLLLLFGYEATLGLSSTEDEGEDPWYQKACKCDCQGGPNALWSAGATSLDCIPHCPYHKPLGFESGE
mRS1 76 VTPDQITCSNPEQYVGWYSSWTANKARLNSQGFGCAWLSKYQDSSQWLQIDLKEIKVISGILTQGRCDIDEWVTK
hRS1 76 VTPDQITCSNPEQYVGWYSSWTANKARLNSQGFGCAWLSKFQDSSQWLQIDLKEIKVISGILTQGRCDIDEWMTK
hRS1_R141C 76 VTPDQITCSNPEQYVGWYSSWTANKARLNSQGFGCAWLSKFQDSSQWLQIDLKEIKVISGILTQGCCDIDEWMTK
mRS1_R141C 76 VTPDQITCSNPEQYVGWYSSWTANKARLNSQGFGCAWLSKYQDSSQWLQIDLKEIKVISGILTQGCCDIDEWVTK
mhRS1 hybrid 76 VTPDQITCSNPEQYVGWYSSWTANKARLNSQGFGCAWLSKFQDSSQWLQIDLKEIKVISGILTQGRCDIDEWMTK
mRS1 151 YSVQYRTDERLNWIYYKDQTGNNRVFYGNSDRSSTVQNLLRPPIISRFIRLIPLGWHVRIAIRMELLECASKCA (SEQ ID NO: 1)
hRS1 151 YSVQYRTDERLNWIYYKDQTGNNRVFYGNSDRTSTVQNLLRPPIISRFIRLIPLGWHVRIAIRMELLECVSKCA (SEQ ID NO: 2)
hRS1_R141C 151 YSVQYRTDERLNWIYYKDQTGNNRVFYGNSDRTSTVQNLLRPPIISRFIRLIPLGWHVRIAIRMELLECVSKCA (SEQ ID NO: 3)
mRS1_R141C 151 YSVQYRTDERLNWIYYKDQTGNNRVFYGNSDRSSTVQNLLRPPIISRFIRLIPLGWHVRIAIRMELLECASKCA (SEQ ID NO: 48)
mhRS1 hybrid 151 YSVQYRTDERLNWIYYKDQTGNNRVFYGNSDRTSTVQNLLRPPIISRFIRLIPLGWHVRIAIRMELLECVSKCA (SEQ ID NO: 4)

FIG. 2

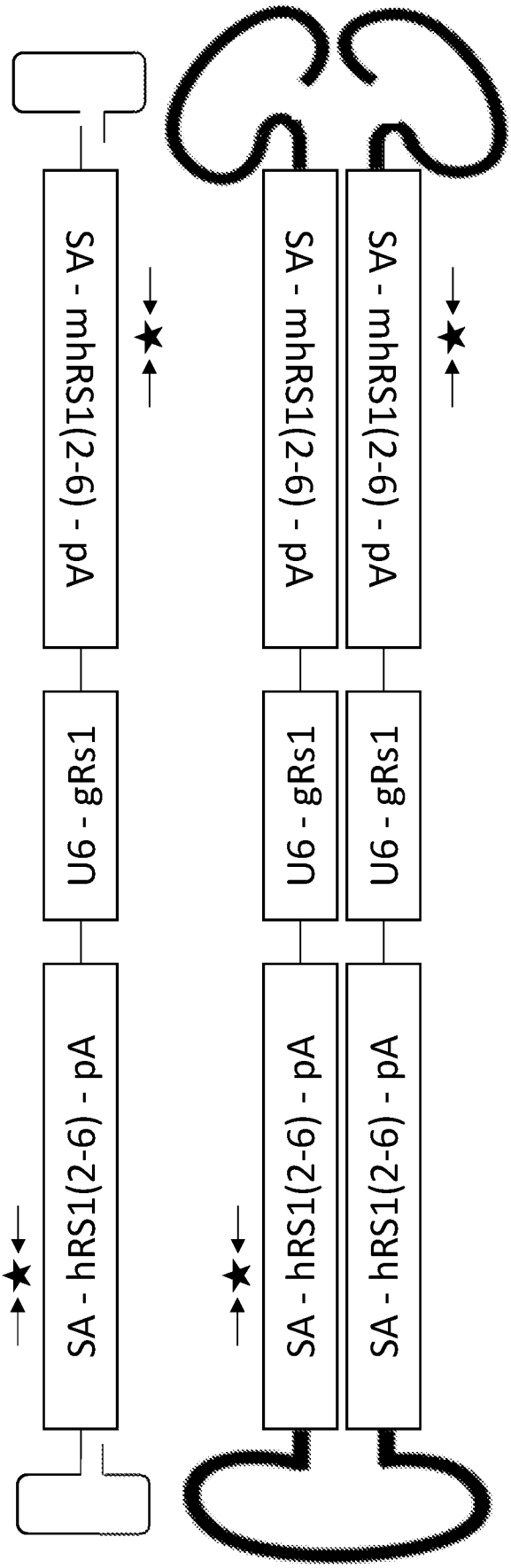

SA - hRS1(2-6) - pA
U6 - gRs1
SA - mhRS1(2-6) - pA
SA - hRS1(2-6) - pA
U6 - gRs1
SA - mhRS1(2-6) - pA
SA - hRS1(2-6) - pA
U6 - gRs1
SA - mhRS1(2-6) - pA

FIG. 3A

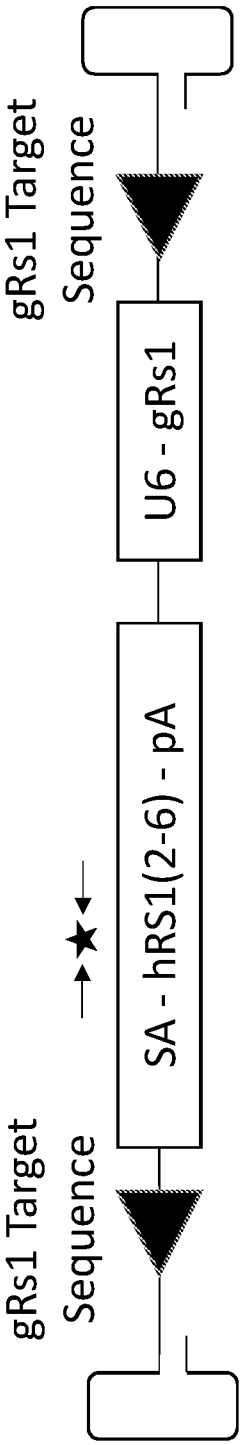

gRs1 Target Sequence
U6 - gRs1
SA - hRS1(2-6) - pA
gRs1 Target Sequence

FIG. 3B

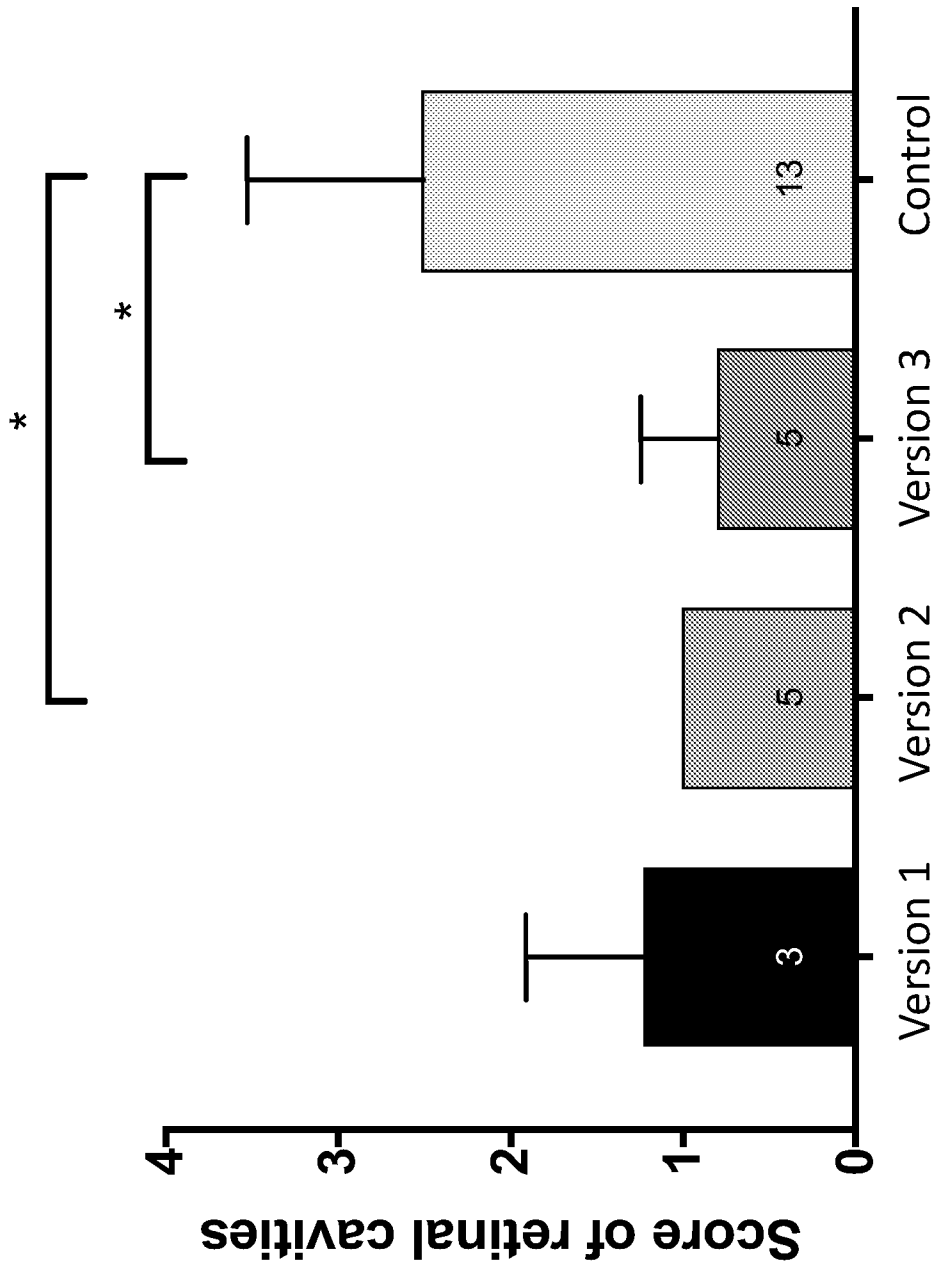

Score of retinal cavities
0
1
2
3
4
3
5
5
13
Version 1
Version 2
Version 3
Control
*
*
Kruskal-Wallis test: p = 0.0023
Post hoc test: Dunn's multiple comparisons test

FIG. 4

AAV		Humanized Transcript 1		Humanized Transcript 2		Mutant Mouse		WT Mouse		Total Reads
		Read Count	Percent of Total Reads	Read Count	Percent of Total Reads	Read Count	Percent of Total Reads	Read Count	Percent of Total Reads	
pssAAV mhRS1-sgu	**6209**	4843	66%	1739	24%	793	11%			7375.00
	6210	925	68%	244	18%	201	15%			1370.00
	6211	1583	87%	0	0%	245	13%			1828.00
	6214	3037	41%	366	5%	547	7%	441	6%	7375.00
	6215	2946	40%	666	9%	713	10%	209	3%	7375.00
	6216	1561	21%	307	4%	202	3%	847	11%	7375.00
pscAAV rs1_tandem	**6228**	5460	80%	796	12%	541	8%			6797.00
	6229	3037	70%	860	20%	430	10%			4327.00
	6212	2085	83%	167	7%	267	11%			2519.00
	6230	2762	81%	266	8%	370	11%			3398.00
	6213	2295	64%	329	9%	947	27%			3571.00
	6225	1987	27%	0	0%	135	2%	349	5%	7375.00
	6266	1416	19%	125	2%	397	5%	337	5%	7375.00
	6267	1145	16%	64	1%	433	6%	1034	14%	7375.00
pssAAV hRs1_HITI	**6227**	3101	40%			4608	60%			7709.00
	6233	1599	47%			1770	53%			3369.00
	6231	3814	92%			324	8%			4138.00
	6226	425	12%			3081	88%			3506.00
	6232	4429	65%			2347	35%			6776.00
	6224	463	6%			3746	51%	356	5%	7375.00
	6222	1613	22%			2019	27%	1140	15%	7375.00
	6223	245	3%			211	3%	0	0%	7375.00

FIG. 5

Sample_ID	Gene	Mouse ID	Virus	Sex	Block	Well	Sample_ID	Gene	% INDEL	INDEL_READS	Total reads
S37	Rs1	4416227.00	7m8 hRS1_cDNA HITI	Male	Rs1_cDNA	B3	S339	Rs1	16.24	612.00	3768.00
S38	Rs1				Rs1_cDNA	B4	S340	Rs1	0.04	4.00	11396.00
S39	Rs1	4416233.00	7m8 hRS1_cDNA HITI	Male	Rs1_cDNA	B5	S341	Rs1	13.15	1575.00	11973.00
S40	Rs1				Rs1_cDNA	B6	S342	Rs1	0.25	21.00	8251.00
S41	Rs1	4416224.00	7m8 hRS1_cDNA HITI	Female	Rs1_cDNA	B7	S343	Rs1	10.68	2000.00	18721.00
S42	Rs1				Rs1_cDNA	B8	S344	Rs1	0.35	67.00	19102.00
S43	Rs1	4416231.00	7m8 hRS1_cDNA HITI	Male	Rs1_cDNA	F3	S371	Rs1	15.60	1143.00	7327.00
S44	Rs1				Rs1_cDNA	F4	S372	Rs1	0.03	3.00	10484.00
S45	Rs1	4416222.00	7m8 hRS1_cDNA HITI	Female	Rs1_cDNA	F5	S373	Rs1	2.28	750.00	32964.00
S46	Rs1				Rs1_cDNA	F6	S374	Rs1	0.06	12.00	21631.00
S47	Rs1	4416226.00	7m8 hRS1_cDNA HITI	Male	Rs1_cDNA	G1	S375	Rs1	44.36	4745.00	10697.00
S48	Rs1				Rs1_cDNA	G2	S376	Rs1	0.06	10.00	18139.00
S49	Rs1	4416232.00	7m8 hRS1_cDNA HITI	Male	Rs1_cDNA	G3	S377	Rs1	0.10	13.00	13314.00
S50	Rs1				Rs1_cDNA	G4	S378	Rs1	0.96	117.00	12153.00
S51	Rs1	4416223.00	7m8 hRS1_cDNA HITI	Female	Rs1_cDNA	G5	S379	Rs1	6.39	1218.00	19070.00
S52	Rs1				Rs1_cDNA	G6	S380	Rs1	0.06	10.00	17282.00
S61	Rs1	4416209.00	7m8 mhRS1-sgu	Male	Rs1_cDNA	B1	S337	Rs1	40.37	2558.00	6337.00
S62	Rs1				Rs1_cDNA	B2	S338	Rs1	0.06	4.00	7098.00
S63	Rs1	4416210.00	7m8 mhRS1-sgu	Male	Rs1_cDNA	C1	S345	Rs1	31.26	5276.00	16880.00
S64	Rs1				Rs1_cDNA	C2	S346	Rs1	0.20	19.00	9494.00
S65	Rs1	4416214.00	7m8 mhRS1-sgu	Female	Rs1_cDNA	C5	S349	Rs1	0.21	58.00	27275.00
S66	Rs1				Rs1_cDNA	C6	S350	Rs1	0.57	107.00	18717.00

FIG. 6A

S67	Rs1	4416211.00	7m8 mhRS1-sgu	Male	Rs1_cDNA	D1	S353	Rs1	0.16	18.00	11198.00
S68	Rs1				Rs1_cDNA	D2	S354	Rs1	2.95	241.00	8171.00
S69	Rs1	4416215.00	7m8 mhRS1-sgu	Female	Rs1_cDNA	D5	S357	Rs1	1.67	344.00	20657.00
S70	Rs1				Rs1_cDNA	D6	S358	Rs1	0.71	131.00	18442.00
S71	Rs1	4416216.00	7m8 mhRS1-sgu	Female	Rs1_cDNA	E5	S365	Rs1	10.05	1648.00	16399.00
S72	Rs1				Rs1_cDNA	E6	S366	Rs1	0.27	52.00	19225.00
S73	Rs1	4416228.00	7m8 pscAAV_rs1_tandem	Male	Rs1_cDNA	C3	S347	Rs1	10.14	1049.00	10346.00
S74	Rs1				Rs1_cDNA	C4	S348	Rs1	0.11	15.00	14040.00
S75	Rs1	4416225.00	7m8 pscAAV_rs1_tandem	Female	Rs1_cDNA	C7	S351	Rs1	32.82	4701.00	14325.00
S76	Rs1				Rs1_cDNA	C8	S352	Rs1	0.05	8.00	15328.00
S77	Rs1	4416229.00	7m8 pscAAV_rs1_tandem	Male	Rs1_cDNA	D3	S355	Rs1	32.67	4416.00	13519.00
S78	Rs1				Rs1_cDNA	D4	S356	Rs1	0.09	15.00	16677.00
S79	Rs1	4416226.00	7m8 pscAAV_rs1_tandem	Female	Rs1_cDNA	D7	S359	Rs1	19.87	3759.00	18917.00
S80	Rs1				Rs1_cDNA	D8	S360	Rs1	0.13	25.00	19461.00
S81	Rs1	4416212.00	7m8 pscAAV_rs1_tandem	Male	Rs1_cDNA	E1	S361	Rs1	0.07	8.00	11742.00
S82	Rs1				Rs1_cDNA	E2	S362	Rs1	0.17	21.00	12432.00
S83	Rs1	4416230.00	7m8 pscAAV_rs1_tandem	Male	Rs1_cDNA	E3	S363	Rs1	7.06	986.00	13974.00
S84	Rs1				Rs1_cDNA	E4	S364	Rs1	1.32	142.00	10767.00
S53	Rs1	4416227.00	7m8 pscAAV_rs1_tandem	Female	Rs1_cDNA	E7	S367	Rs1	1.48	260.00	17523.00
S54	Rs1				Rs1_cDNA	E8	S368	Rs1	0.39	63.00	16357.00
S55	Rs1	4416213.00	7m8 pscAAV_rs1_tandem	Male	Rs1_cDNA	F1	S369	Rs1	19.75	1286.00	6512.00
S56	Rs1				Rs1_cDNA	F2	S370	Rs1	0.28	24.00	8481.00

FIG. 6B

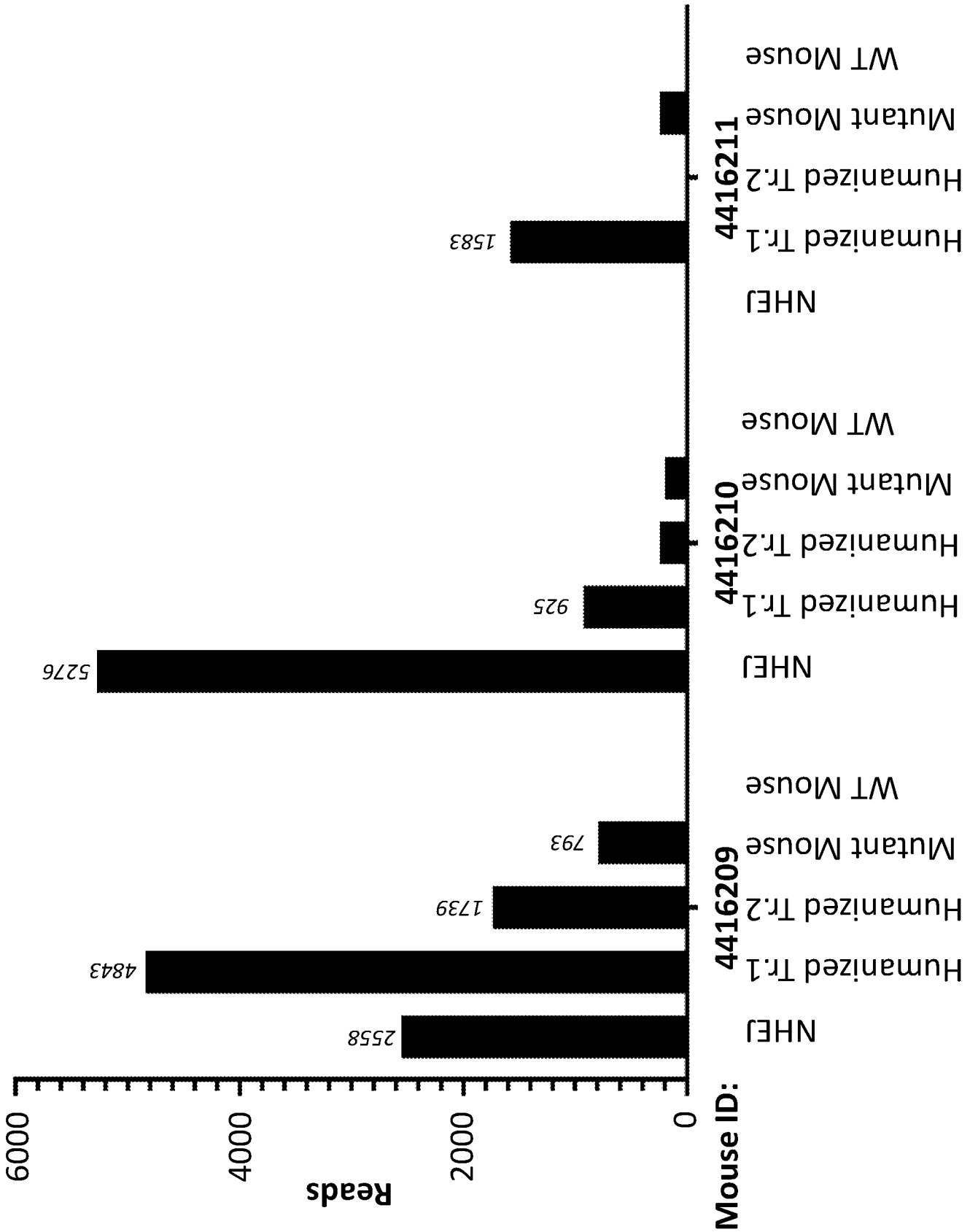

Reads
6000
4000
2000
0
Mouse ID:
NHEJ
Humanized Tr.1
Humanized Tr.2
Mutant Mouse
WT Mouse
4416209
2558
4843
1739
793
NHEJ
Humanized Tr.1
Humanized Tr.2
Mutant Mouse
WT Mouse
4416210
5276
925
NHEJ
Humanized Tr.1
Humanized Tr.2
Mutant Mouse
WT Mouse
4416211
1583

FIG. 7A

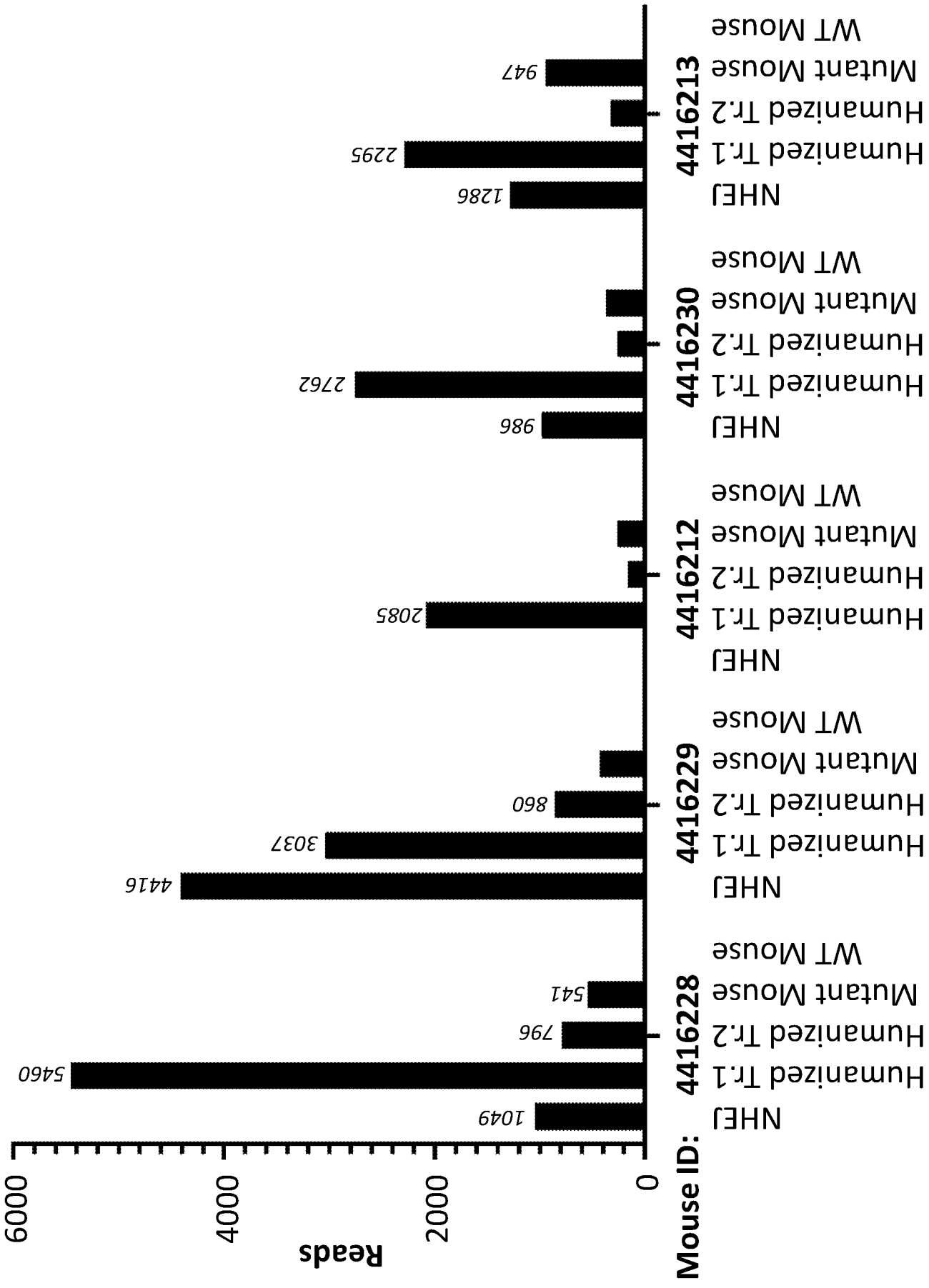

Reads
6000
4000
2000
0
Mouse ID:
4416228
4416229
4416212
4416230
4416213
NHEJ
Humanized Tr.1
Humanized Tr.2
Mutant Mouse
WT Mouse
1049
5460
796
541
4416
3037
860
2085
986
2762
1286
2295
947

FIG. 7B

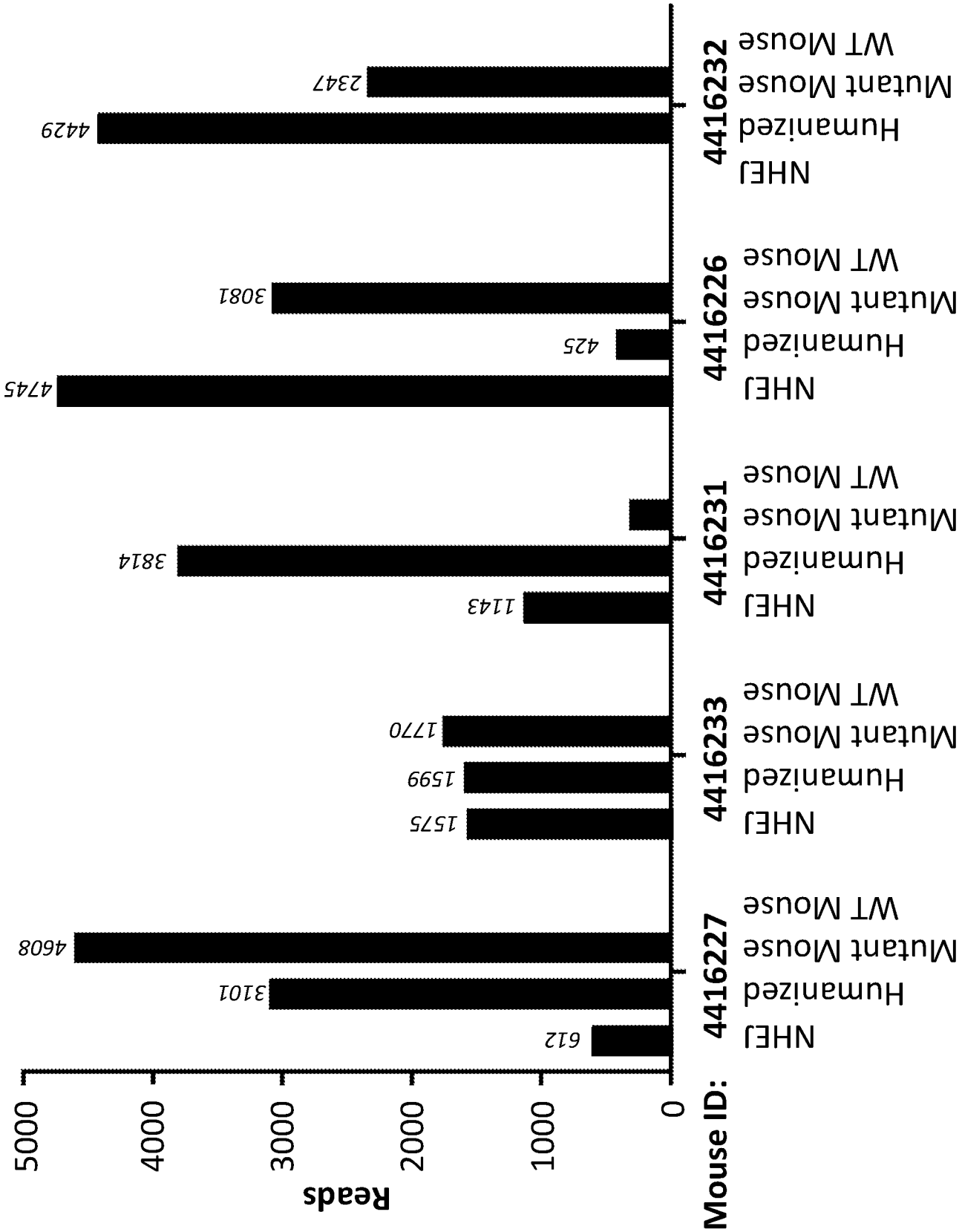

Reads
5000
4000
3000
2000
1000
0
Mouse ID:
4416227
NHEJ
Humanized
Mutant Mouse
WT Mouse
612
3101
4608
4416233
NHEJ
Humanized
Mutant Mouse
WT Mouse
1575
1599
1770
4416231
NHEJ
Humanized
Mutant Mouse
WT Mouse
1143
3814
4416226
NHEJ
Humanized
Mutant Mouse
WT Mouse
425
3081
4745
4416232
NHEJ
Humanized
Mutant Mouse
WT Mouse
2347
4429

FIG. 7C

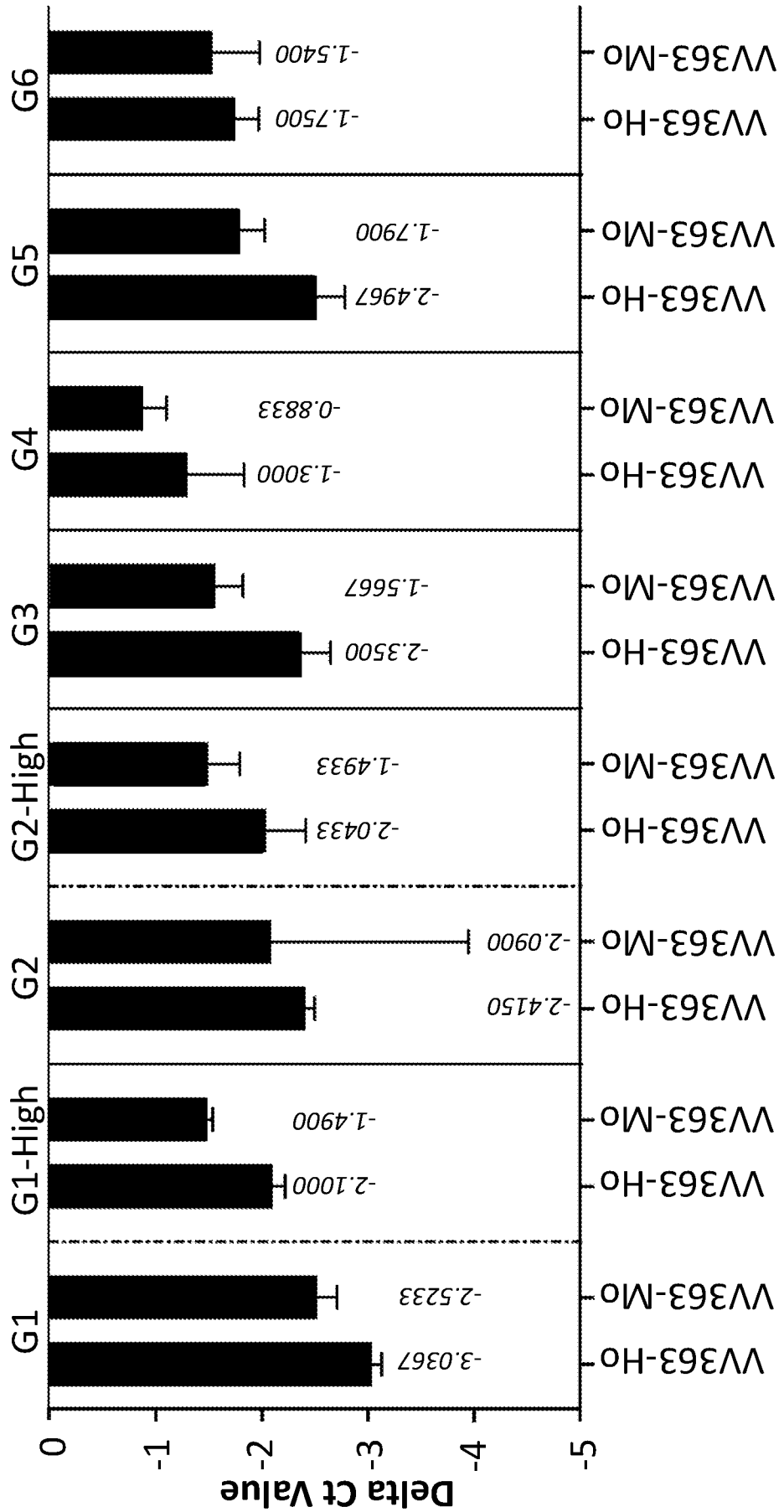

Delta Ct Value
0
-1
-2
-3
-4
-5
G1
G1-High
G2
G2-High
G3
G4
G5
G6
VV363-Ho
VV363-Mo
-3.0367
-2.5233
-2.1000
-1.4900
-2.4150
-2.0900
-2.0433
-1.4933
-2.3500
-1.5667
-1.3000
-0.8833
-2.4967
-1.7900
-1.7500
-1.5400

FIG. 8A

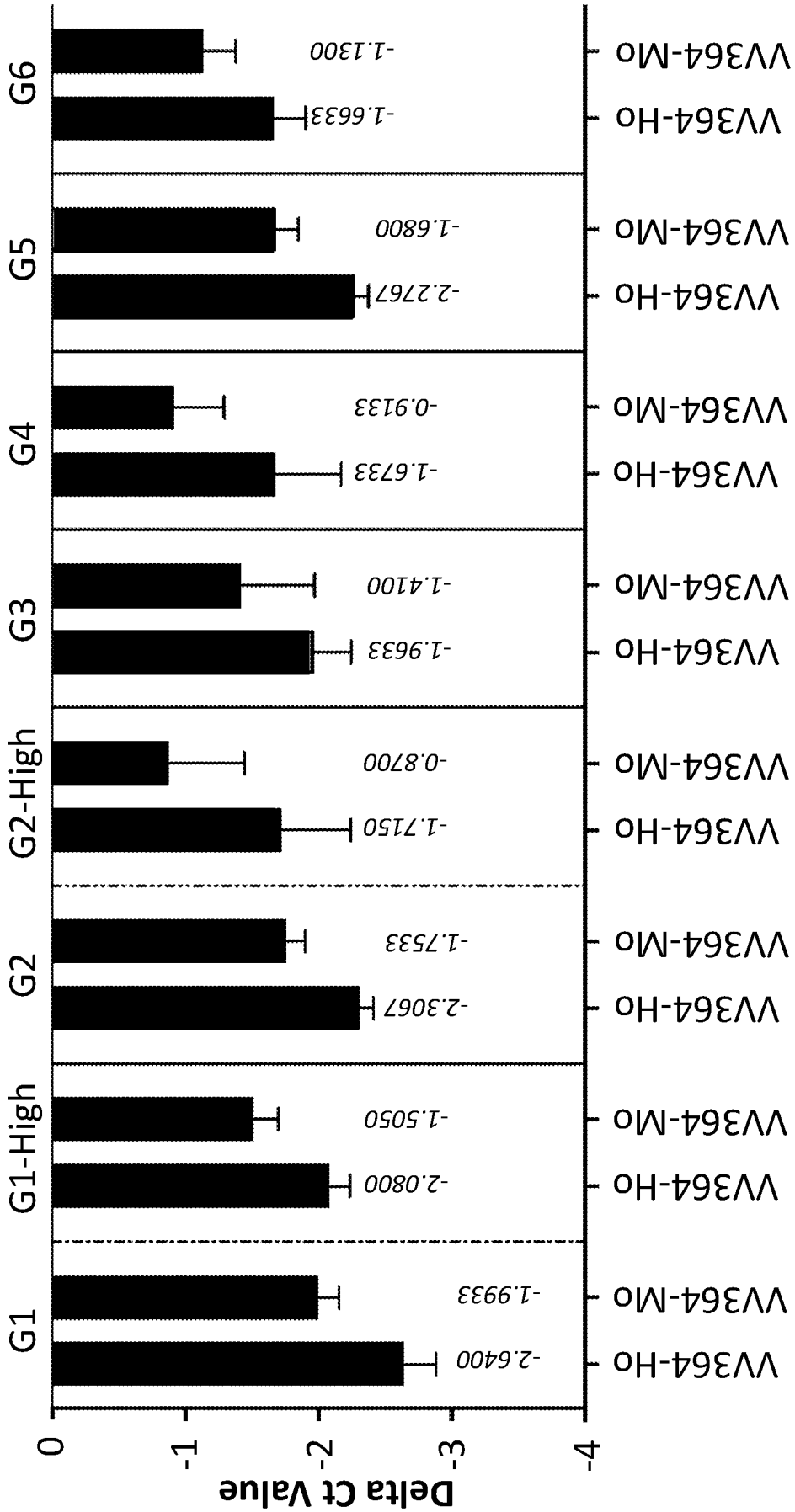

Delta Ct Value
0
-1
-2
-3
-4
G1
G1-High
G2
G2-High
G3
G4
G5
G6
VV364-Ho
VV364-Mo
-2.6400
-1.9933
-2.0800
-1.5050
-2.3067
-1.7533
-1.7150
-0.8700
-1.9633
-1.4100
-1.6733
-0.9133
-2.2767
-1.6800
-1.6633
-1.1300

FIG. 8B

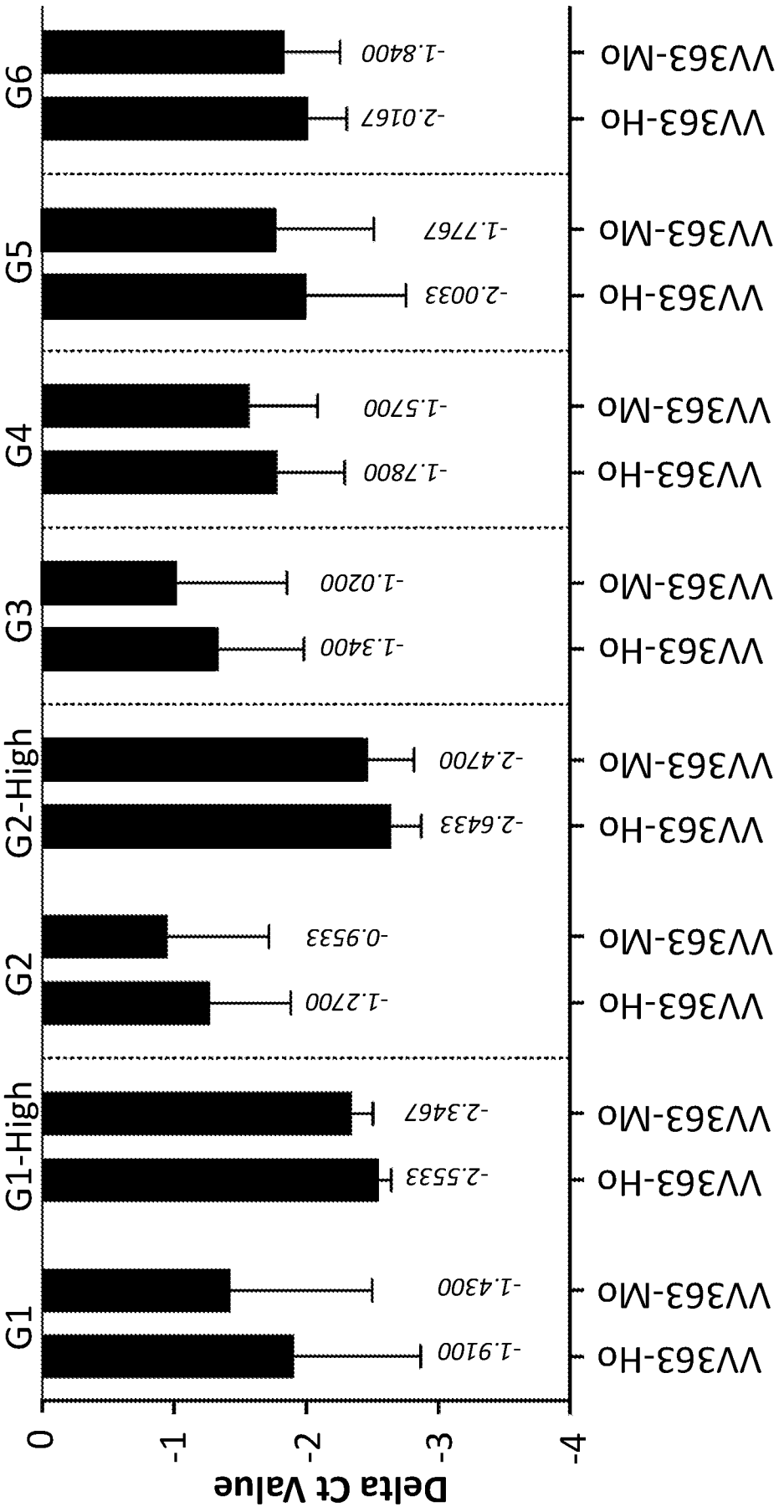

Delta Ct Value
0
-1
-2
-3
-4
G1
G1-High
G2
G2-High
G3
G4
G5
G6
VV363-Ho
VV363-Mo
-1.9100
-1.4300
-2.5533
-2.3467
-1.2700
-0.9533
-2.6433
-2.4700
-1.3400
-1.0200
-1.7800
-1.5700
-2.0033
-1.7767
-2.0167
-1.8400

FIG. 9A

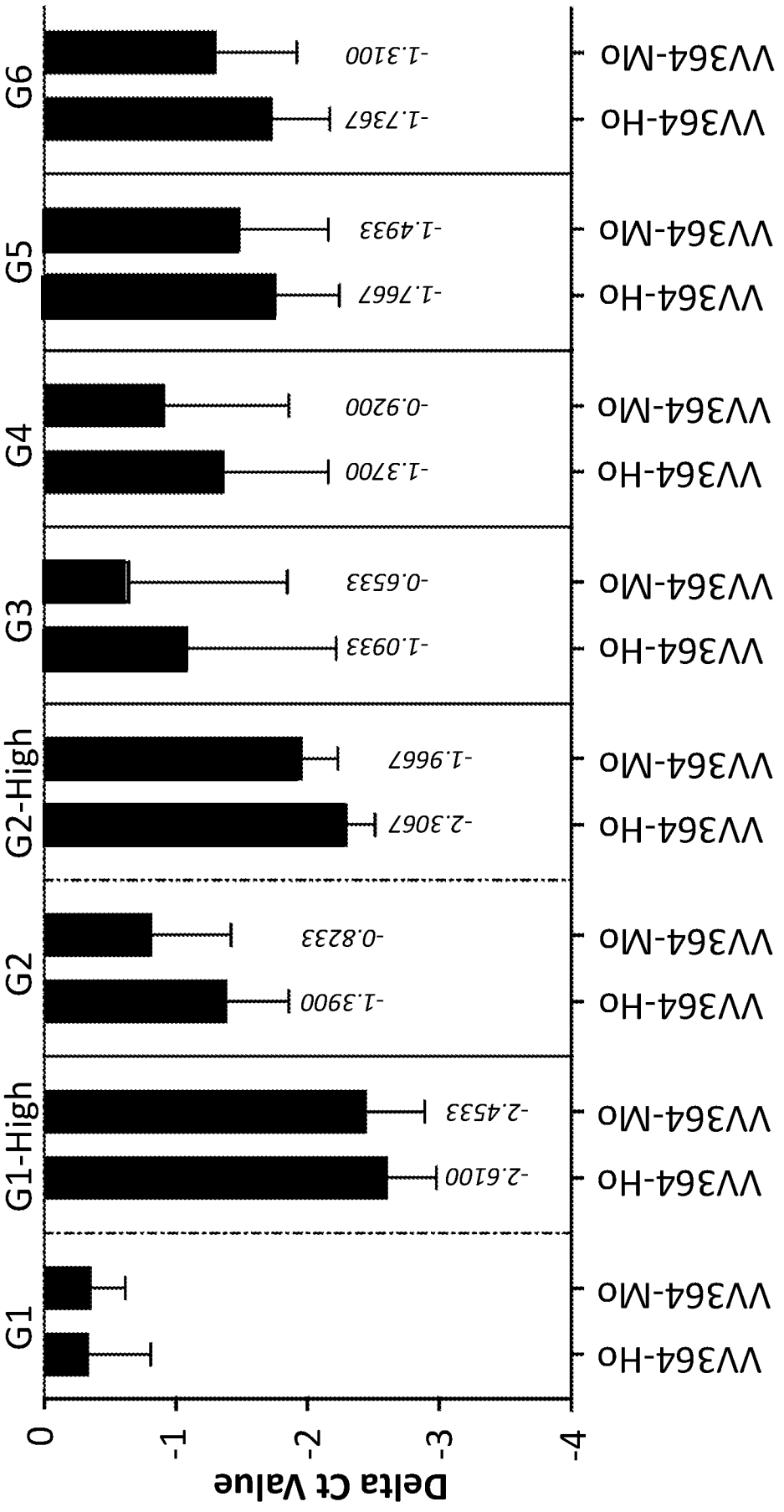

Delta Ct Value
0
-1
-2
-3
-4
G1
G1-High
G2
G2-High
G3
G4
G5
G6
VV364-Ho
VV364-Mo
-2.6100
-2.4533
-1.3900
-0.8233
-2.3067
-1.9667
-1.0933
-0.6533
-1.3700
-0.9200
-1.7667
-1.4933
-1.7367
-1.3100

FIG. 9B

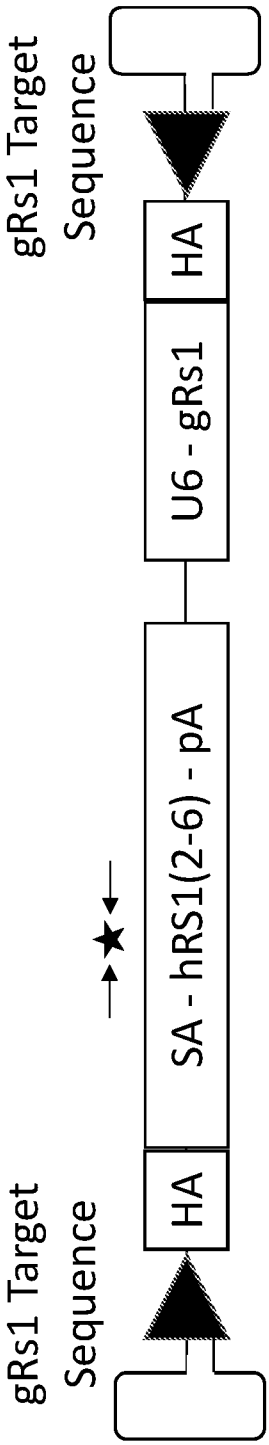

gRs1 Target Sequence
HA
U6 - gRs1
SA - hRS1(2-6) - pA
HA
gRs1 Target Sequence

FIG. 10

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> CRISPR AND AAV STRATEGIES FOR X-LINKED JUVENILE RETINOSCHISIS THERAPY

<130> 057766/694232

<150> US 62/932,608
<151> 2019-11-08

<160> 6249

<170> PatentIn version 3.5

<210> 1
<211> 224
<212> PRT
<213> Mus musculus

<400> 1

Met Pro His Lys Ile Glu Gly Phe Phe Leu Leu Leu Leu Phe Gly Tyr
1 5 10 15

Glu Ala Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro
20 25 30

Trp Tyr Gln Lys Ala Cys Lys Cys Asp Cys Gln Val Gly Ala Asn Ala
35 40 45

Leu Trp Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro
50 55 60

Tyr His Lys Pro Leu Gly Phe Glu Ser Gly Glu Val Thr Pro Asp Gln
65 70 75 80

Ile Thr Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp
85 90 95

Thr Ala Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp
100 105 110

Leu Ser Lys Tyr Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys
115 120 125

Glu Ile Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Arg Cys Asp Ile
130 135 140

Asp Glu Trp Val Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg
145 150 155 160

Leu Asn Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe
165 170 175

Tyr Gly Asn Ser Asp Arg Ser Ser Thr Val Gln Asn Leu Leu Arg Pro

```
            180                 185                 190

Pro Ile Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val
        195                 200                 205

Arg Ile Ala Ile Arg Met Glu Leu Leu Glu Cys Ala Ser Lys Cys Ala
    210                 215                 220
```

<210> 2
<211> 224
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Ser Arg Lys Ile Glu Gly Phe Leu Leu Leu Leu Leu Phe Gly Tyr
1               5                   10                  15

Glu Ala Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro
            20                  25                  30

Trp Tyr Gln Lys Ala Cys Lys Cys Asp Cys Gln Gly Gly Pro Asn Ala
        35                  40                  45

Leu Trp Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro
    50                  55                  60

Tyr His Lys Pro Leu Gly Phe Glu Ser Gly Glu Val Thr Pro Asp Gln
65                  70                  75                  80

Ile Thr Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp
                85                  90                  95

Thr Ala Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp
            100                 105                 110

Leu Ser Lys Phe Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys
        115                 120                 125

Glu Ile Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Arg Cys Asp Ile
    130                 135                 140

Asp Glu Trp Met Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg
145                 150                 155                 160

Leu Asn Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe
                165                 170                 175

Tyr Gly Asn Ser Asp Arg Thr Ser Thr Val Gln Asn Leu Leu Arg Pro
            180                 185                 190

Pro Ile Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val
        195                 200                 205
```

```
Arg Ile Ala Ile Arg Met Glu Leu Leu Glu Cys Val Ser Lys Cys Ala
    210                 215                 220


<210>  3
<211>  224
<212>  PRT
<213>  Homo sapiens

<400>  3

Met Ser Arg Lys Ile Glu Gly Phe Leu Leu Leu Leu Leu Phe Gly Tyr
1               5                   10                  15


Glu Ala Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro
            20                  25                  30


Trp Tyr Gln Lys Ala Cys Lys Cys Asp Cys Gln Gly Gly Pro Asn Ala
        35                  40                  45


Leu Trp Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro
    50                  55                  60


Tyr His Lys Pro Leu Gly Phe Glu Ser Gly Glu Val Thr Pro Asp Gln
65                  70                  75                  80


Ile Thr Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp
                85                  90                  95


Thr Ala Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp
            100                 105                 110


Leu Ser Lys Phe Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys
        115                 120                 125


Glu Ile Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Cys Cys Asp Ile
    130                 135                 140


Asp Glu Trp Met Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg
145                 150                 155                 160


Leu Asn Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe
                165                 170                 175


Tyr Gly Asn Ser Asp Arg Thr Ser Thr Val Gln Asn Leu Leu Arg Pro
            180                 185                 190


Pro Ile Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val
        195                 200                 205


Arg Ile Ala Ile Arg Met Glu Leu Leu Glu Cys Val Ser Lys Cys Ala
    210                 215                 220


<210>  4
```

<211> 224
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4

```
Met Pro His Lys Ile Glu Gly Phe Phe Leu Leu Leu Leu Phe Gly Tyr
1               5                   10                  15


Glu Ala Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro
            20                  25                  30


Trp Tyr Gln Lys Ala Cys Lys Cys Asp Cys Gln Gly Gly Pro Asn Ala
        35                  40                  45


Leu Trp Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro
    50                  55                  60


Tyr His Lys Pro Leu Gly Phe Glu Ser Gly Glu Val Thr Pro Asp Gln
65                  70                  75                  80


Ile Thr Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp
                85                  90                  95


Thr Ala Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp
            100                 105                 110


Leu Ser Lys Phe Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys
        115                 120                 125


Glu Ile Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Arg Cys Asp Ile
    130                 135                 140


Asp Glu Trp Met Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg
145                 150                 155                 160


Leu Asn Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe
                165                 170                 175


Tyr Gly Asn Ser Asp Arg Thr Ser Thr Val Gln Asn Leu Leu Arg Pro
            180                 185                 190


Pro Ile Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val
        195                 200                 205


Arg Ile Ala Ile Arg Met Glu Leu Leu Glu Cys Val Ser Lys Cys Ala
    210                 215                 220
```

<210> 5
<211> 206
<212> PRT
<213> Homo sapiens

<400> 5

Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro Trp Tyr
1 5 10 15

Gln Lys Ala Cys Lys Cys Asp Cys Gln Gly Gly Pro Asn Ala Leu Trp
20 25 30

Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro Tyr His
35 40 45

Lys Pro Leu Gly Phe Glu Ser Gly Glu Val Thr Pro Asp Gln Ile Thr
50 55 60

Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp Thr Ala
65 70 75 80

Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp Leu Ser
85 90 95

Lys Phe Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys Glu Ile
100 105 110

Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Arg Cys Asp Ile Asp Glu
115 120 125

Trp Met Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg Leu Asn
130 135 140

Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe Tyr Gly
145 150 155 160

Asn Ser Asp Arg Thr Ser Thr Val Gln Asn Leu Leu Arg Pro Pro Ile
165 170 175

Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val Arg Ile
180 185 190

Ala Ile Arg Met Glu Leu Leu Glu Cys Val Ser Lys Cys Ala
195 200 205

<210> 6
<211> 675
<212> DNA
<213> Homo sapiens

<400> 6
atgtcacgca agatagaagg ctttttgtta ttacttctct ttggctatga agccacattg 60

ggattatcgt ctaccgagga tgaaggcgag gacccctggt accaaaaagc atgcaagtgc 120

gattgccaag gaggacccaa tgctctgtgg tctgcaggtg ccacctcctt ggactgtata 180

ccagaatgcc catatcacaa gcctctgggt ttcgagtcag gggaggtcac accggaccag 240

atcacctgct ctaacccgga gcagtatgtg ggctggtatt cttcgtggac tgcaaacaag 300

gcccggctca acagtcaagg ctttgggtgt gcctggctct ccaagttcca ggacagtagc 360

cagtggttac agatagatct gaaggagatc aaagtgattt cagggatcct cacccagggg 420

cgctgtgaca tcgatgagtg gatgaccaag tacagcgtgc agtacaggac cgatgagcgc 480

ctgaactgga tttactacaa ggaccagact ggaaacaacc gggtcttcta tggcaactcg 540

gaccgcacct ccacggttca gaacctgctg cggcccccca tcatctcccg cttcatccgc 600

ctcatcccgc tgggctggca cgtccgcatt gccatccgga tggagctgct ggagtgcgtc 660

agcaagtgtg cctga 675

<210> 7
<211> 52
<212> DNA
<213> Mus musculus

<400> 7
atgccacaca agattgaagg cttcttcttg ttacttctct ttggctatga ag 52

<210> 8
<211> 623
<212> DNA
<213> Homo sapiens

<400> 8
ccacattggg attatcgtct accgaggatg aaggcgagga cccctggtac caaaaagcat 60

gcaagtgcga ttgccaagga ggacccaatg ctctgtggtc tgcaggtgcc acctccttgg 120

actgtatacc agaatgccca tatcacaagc ctctgggttt cgagtcaggg gaggtcacac 180

cggaccagat cacctgctct aacccggagc agtatgtggg ctggtattct tcgtggactg 240

caaacaaggc ccggctcaac agtcaaggct ttgggtgtgc ctggctctcc aagttccagg 300

acagtagcca gtggttacag atagatctga aggagatcaa agtgatttca gggatcctca 360

cccaggggcg ctgtgacatc gatgagtgga tgaccaagta cagcgtgcag tacaggaccg 420

atgagcgcct gaactggatt tactacaagg accagactgg aaacaaccgg gtcttctatg 480

gcaactcgga ccgcacctcc acggttcaga acctgctgcg gccccccatc atctcccgct 540

tcatccgcct catcccgctg ggctggcacg tccgcattgc catccggatg gagctgctgg 600

agtgcgtcag caagtgtgcc tga 623

<210> 9
<211> 623
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 9
ccacactggg cctgagcagc acagaagatg aaggcgagga cccctggtat cagaaagcct 60

gcaagtgcga ctgtcaaggc ggccctaatg ctctttggag cgctggcgct acaagcctgg 120

actgcatccc tgagtgcccc taccataagc ctctgggctt cgagagcggc gaagtgaccc 180

ctgaccagat cacctgtagc aaccccgagc agtacgtcgg ctggtactct agctggacag 240

ccaacaaggc cagactgaac agccaaggct tcggctgtgc ctggctgagc aagttccagg 300

actctagcca gtggctgcag atcgacctga aagagatcaa agtcatcagc ggcatcctga 360

cacagggcag atgcgacatc gacgagtgga tgaccaagta cagcgtgcag tacagaaccg 420

acgagagact gaactggatc tactacaagg accagaccgg caacaacaga gtgttctacg 480

gcaacagcga cagaaccagc accgtgcaga atctgctgag gcctcctatc atctccagat 540

tcatcagact gatccctctc ggctggcacg tgcggatcgc catcagaatg gaactgctgg 600

aatgcgtgtc caagtgcgcc tga 623

<210> 10
<211> 623
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 10
tcaggcgcac ttggacacgc attccagcag ttccattctg atggcgatcc gcacgtgcca 60

gccgagaggg atcagtctga tgaatctgga gatgatagga ggcctcagca gattctgcac 120

ggtgctggtt ctgtcgctgt tgccgtagaa cactctgttg ttgccggtct ggtccttgta 180

gtagatccag ttcagtctct cgtcggttct gtactgcacg ctgtacttgg tcatccactc 240

gtcgatgtcg catctgccct gtgtcaggat gccgctgatg actttgatct ctttcaggtc 300

gatctgcagc cactggctag agtcctggaa cttgctcagc caggcacagc cgaagccttg 360

gctgttcagt ctggccttgt tggctgtcca gctagagtac cagccgacgt actgctcggg 420

gttgctacag gtgatctggt caggggtcac ttcgccgctc tcgaagccca gaggcttatg 480

gtaggggcac tcagggatgc agtccaggct tgtagcgcca gcgctccaaa gagcattagg 540

gccgccttga cagtcgcact tgcaggcttt ctgataccag gggtcctcgc cttcatcttc 600

tgtgctgctc aggcccagtg tgg 623

<210> 11
<211> 675
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(52)
<223> Mouse Sequence

<220>
<221> misc_feature
<222> (53)..(675)
<223> Human Sequence

<400> 11
atgccacaca agattgaagg cttcttcttg ttacttctct ttggctatga agccacattg 60

ggattatcgt ctaccgagga tgaaggcgag gacccctggt accaaaaagc atgcaagtgc 120

gattgccaag gaggacccaa tgctctgtgg tctgcaggtg ccacctcctt ggactgtata 180

ccagaatgcc catatcacaa gcctctgggt ttcgagtcag gggaggtcac accggaccag 240

atcacctgct ctaacccgga gcagtatgtg ggctggtatt cttcgtggac tgcaaacaag 300

gcccggctca acagtcaagg ctttgggtgt gcctggctct ccaagttcca ggacagtagc 360

cagtggttac agatagatct gaaggagatc aaagtgattt cagggatcct cacccagggg 420

cgctgtgaca tcgatgagtg gatgaccaag tacagcgtgc agtacaggac cgatgagcgc 480

ctgaactgga tttactacaa ggaccagact ggaaacaacc gggtcttcta tggcaactcg 540

gaccgcacct ccacggttca gaacctgctg cggcccccca tcatctcccg cttcatccgc 600

ctcatcccgc tgggctggca cgtccgcatt gccatccgga tggagctgct ggagtgcgtc 660

agcaagtgtg cctga 675

<210> 12
<211> 675
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(52)
<223> Mouse Sequence

<220>
<221> misc_feature
<222> (53)..(675)
<223> Human Sequence

<400> 12
atgccacaca agattgaagg cttcttcttg ttacttctct ttggctatga agccacactg 60

ggcctgagca gcacagaaga tgaaggcgag gacccctggt atcagaaagc ctgcaagtgc 120

gactgtcaag gcggccctaa tgctctttgg agcgctggcg ctacaagcct ggactgcatc 180

cctgagtgcc cctaccataa gcctctgggc ttcgagagcg gcgaagtgac ccctgaccag 240

atcacctgta gcaaccccga gcagtacgtc ggctggtact ctagctggac agccaacaag 300

gccagactga acagccaagg cttcggctgt gcctggctga gcaagttcca ggactctagc 360

cagtggctgc agatcgacct gaaagagatc aaagtcatca gcggcatcct gacacagggc 420

agatgcgaca tcgacgagtg gatgaccaag tacagcgtgc agtacagaac cgacgagaga 480

ctgaactgga tctactacaa ggaccagacc ggcaacaaca gagtgttcta cggcaacagc 540

gacagaacca gcaccgtgca gaatctgctg aggcctccta tcatctccag attcatcaga 600

ctgatccctc tcggctggca cgtgcggatc gccatcagaa tggaactgct ggaatgcgtg 660

tccaagtgcg cctga 675

<210> 13
<211> 1073
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(224)
<223> Intron with Splice Acceptor

<220>
<221> misc_feature
<222> (225)..(847)
<223> Human RS1 Sequence

<220>
<221> misc_feature
<222> (848)..(1073)
<223> bGH polyA

<400> 13
ctataatgat gatcttgttc tttctgttta attttactgt ccctagcttc ttagcatctg   60

cggatgtttt tcctggcaga tatttactca ccatgacttc ttccagaagg ggtgttggta   120

gctttcatgt gactatttct atttcacttt tccatgtaac gagtgatgct gttggatttc   180

tctttcatta attagatttt ttctgtctca tccttttgct ttagccacat tgggattatc   240

gtctaccgag gatgaaggcg aggacccctg gtaccaaaaa gcatgcaagt gcgattgcca   300

aggaggaccc aatgctctgt ggtctgcagg tgccacctcc ttggactgta taccagaatg   360

cccatatcac aagcctctgg gtttcgagtc aggggaggtc acaccggacc agatcacctg   420

ctctaacccg gagcagtatg tgggctggta ttcttcgtgg actgcaaaca aggcccggct   480

caacagtcaa ggctttgggt gtgcctggct ctccaagttc caggacagta gccagtggtt   540

acagatagat ctgaaggaga tcaaagtgat ttcagggatc ctcacccagg ggcgctgtga   600

catcgatgag tggatgacca agtacagcgt gcagtacagg accgatgagc gcctgaactg   660

gatttactac aaggaccaga ctggaaacaa ccgggtcttc tatggcaact cggaccgcac   720

ctccacggtt cagaacctgc tgcggccccc catcatctcc cgcttcatcc gcctcatccc   780

gctgggctgg cacgtccgca ttgccatccg gatggagctg ctggagtgcg tcagcaagtg   840

tgcctgactg tgccttctag ttgccagcca tctgttgttt gcccctcccc cgtgccttcc   900

ttgaccctgg aaggtgccac tcccactgtc ctttcctaat aaaatgagga aattgcatcg   960

cattgtctga gtaggtgtca ttctattctg gggggtgggg tggggcagga cagcaagggg   1020

gaggattggg aagacaatag caggcatgct ggggatgcgg tgggctctat ggc   1073

<210> 14
<211> 1028
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(183)
<223> Intron with Splice Acceptor

<220>
<221> misc_feature
<222> (184)..(806)
<223> Mouse-Codon-Optimized Human RS1

<220>
<221> misc_feature
<222> (807)..(1028)
<223> SV40 polyA

<400> 14
gctgtactgc accctgcttt gctatattaa tatattttcc ataattctat aagaaaaaac 60

aacagtcatt gccatccttt tcctccctcc agaatgagct ccttaatctc tatggcattg 120

ttttcatttt gccttctttc ctttcttaat ttcatttttt ccctctcttg ttcttttgct 180

cagccacact gggcctgagc agcacagaag atgaaggcga ggacccctgg tatcagaaag 240

cctgcaagtg cgactgtcaa ggcggcccta atgctctttg gagcgctggc gctacaagcc 300

tggactgcat ccctgagtgc ccctaccata agcctctggg cttcgagagc ggcgaagtga 360

cccctgacca gatcacctgt agcaaccccg agcagtacgt cggctggtac tctagctgga 420

cagccaacaa ggccagactg aacagccaag gcttcggctg tgcctggctg agcaagttcc 480

aggactctag ccagtggctg cagatcgacc tgaaagagat caaagtcatc agcggcatcc 540

tgacacaggg cagatgcgac atcgacgagt ggatgaccaa gtacagcgtg cagtacagaa 600

ccgacgagag actgaactgg atctactaca aggaccagac cggcaacaac agagtgttct 660

acggcaacag cgacagaacc agcaccgtgc agaatctgct gaggcctcct atcatctcca 720

gattcatcag actgatccct ctcggctggc acgtgcggat cgccatcaga atggaactgc 780

tggaatgcgt gtccaagtgc gcctgacaga catgataaga tacattgatg agtttggaca 840

aaccacaact agaatgcagt gaaaaaaatg ctttatttgt gaaatttgtg atgctattgc 900

tttatttgta accattataa gctgcaataa acaagttaac aacaacaatt gcattcattt 960

tatgtttcag gttcaggggg aggtgtggga ggtttttttaa agcaagtaaa acctctacaa 1020

atgtggta 1028

<210> 15
<211> 224
<212> DNA
<213> Homo sapiens

<400> 15
ctataatgat gatcttgttc tttctgttta attttactgt ccctagcttc ttagcatctg 60

cggatgtttt tcctggcaga tatttactca ccatgacttc ttccagaagg ggtgttggta 120

gctttcatgt gactatttct atttcacttt tccatgtaac gagtgatgct gttggatttc 180

tctttcatta attagatttt ttctgtctca tccttttgct ttag 224

<210> 16
<211> 60
<212> DNA
<213> Homo sapiens

<400> 16
gatgctgttg gatttctctt tcattaatta gatttttttct gtctcatcct tttgctttag 60

<210> 17
<211> 183
<212> DNA
<213> Mus musculus

<400> 17
gctgtactgc accctgcttt gctatattaa tatattttcc ataattctat aagaaaaaac 60

aacagtcatt gccatccttt tcctccctcc agaatgagct ccttaatctc tatggcattg 120

ttttcatttt gccttctttc ctttcttaat ttcatttttt ccctctcttg ttcttttgct 180

cag 183

<210> 18
<211> 63
<212> DNA
<213> Mus musculus

<400> 18
ttttcatttt gccttctttc ctttcttaat ttcatttttt ccctctcttg ttcttttgct 60

cag 63

<210> 19
<211> 183
<212> DNA
<213> Mus musculus

<400> 19
ctgagcaaaa gaacaagaga gggaaaaaat gaaattaaga aaggaaagaa ggcaaaatga 60

aaacaatgcc atagagatta aggagctcat tctggaggga ggaaaaggat ggcaatgact 120

gttgtttttt cttatagaat tatggaaaat atattaatat agcaaagcag ggtgcagtac 180

agc 183

<210> 20
<211> 63
<212> DNA
<213> Mus musculus

<400> 20
ctgagcaaaa gaacaagaga gggaaaaaat gaaattaaga aaggaaagaa ggcaaaatga 60

aaa 63

<210> 21
<211> 96
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 21
gttgaccagc tcggcggtga cctgcacgtc tagggcgcag tagtccaggg tttccttgat 60

gatgtcatac ttatcctgtc ccttttttt ccacag 96

<210> 22
<211> 226
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 22
ctgtgccttc tagttgccag ccatctgttg tttgcccctc ccccgtgcct tccttgaccc 60

tggaaggtgc cactcccact gtcctttcct aataaaatga ggaaattgca tcgcattgtc 120

tgagtaggtg tcattctatt ctgggggggtg gggtggggca ggacagcaag ggggaggatt 180

gggaagacaa tagcaggcat gctggggatg cggtgggctc tatggc 226

<210> 23
<211> 222
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 23
cagacatgat aagatacatt gatgagtttg gacaaaccac aactagaatg cagtgaaaaa 60

aatgctttat ttgtgaaatt tgtgatgcta ttgctttatt tgtaaccatt ataagctgca 120

ataaacaagt taacaacaac aattgcattc attttatgtt tcaggttcag ggggaggtgt 180

gggaggtttt ttaaagcaag taaaacctct acaaatgtgg ta 222

<210> 24
<211> 222
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 24
taccacattt gtagaggttt tacttgcttt aaaaaacctc ccacacctcc ccctgaacct 60

gaaacataaa atgaatgcaa ttgttgttgt taacttgttt attgcagctt ataatggtta 120

caaataaagc aatagcatca caaatttcac aaataaagca ttttttttcac tgcattctag 180

ttgtggtttg tccaaactca tcaatgtatc ttatcatgtc tg 222

<210> 25
<211> 2094
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 25
tgcctgcctc agctcggcgc ctgccagggg gtgactggca cagagcgggc cgtaggggac 60

cccctcacac accaccgaga tggacagggc tatatttcgc aaagcaattg taactgcagt 120

gctgggtaga taatttttt ttttttaaga tatagctttc tgatttcaat gaaataaaaa 180

tgaacttatt ccccactcag ggccagagaa agtcagaaca aagaaaatgt ccccgaaacg 240

aattttctta caaaagccta agtagcaggg gtaattttct gctcattttt tgtctcagtg 300

atactgtgaa aggtgcagtc tcaggggaac acaaagcagc cctgataatt tgaaaattca 360

tttgctttac cacattcaag acagaaacat acagtttcct aaagcctggc tttgaatgca 420

gaagggagca gctcctccta gttaagtttc cactaaatca tcgccaaaga ggacttcaga 480

gccctgggga ggcagctgag ggtctcaagg gtgactgggt ggcagggatg agtgcggtgg 540

gtgagaatcc cggtgccctg agaggctata cgtgacaaat gaccaaaagc ccaaggtagg 600

ggagtttcct ctgctcacag ttcttacctt caaggcggat ctgggcttcc accctcatga 660

acacagggat tggggaggga ccagagcgcc caatacacac agctccatta tgcaatccat 720

tccagcaaat tccccgtgtc tgtggtcacc atttaggtga tcatacagga caggctgcac 780

atctcagtat atgtagggac cccaaatgac cacaacacag tacaattgcc ctttacctag 840

ggctaccatt tcctagcaaa ccaaacatag ttcgagaaca gctggcccag gagctaccac 900

tggctactca gaggaggctc attagctggc tacatgcttc gcaggaagtg ggaaggactc 960

acatcataaa aaggaccatg tagctttttc cctgaaagct tctcaccctc caccctctgc 1020

cttgcaatac gcaaactgcg cctgctcctg aaaagctctc tgggaaggaa tgggcctggc 1080

tttccgttcc tggaggcggc gccttagatt gggaggcctc attggccact tagagcgcag 1140

cctgagtttc caggcccctt cctgggagag gctgttaaca cgggggaggg gcaggagagg 1200

gatatggaga gcaggtggtg gaatcagagg acgaggctgc tctaaagact gttctggccc 1260

cagacacagg gtagtctttg ctagcagctc atttccgagt tacttttcat tttcaaatgc 1320

caaggcaagt gactagactc gcgctaatac agtgctggac aacacattca ccttttctgt 1380

gaacaggcag ccttctaaaa gccccaaaca tccttcttga tgctttgggg gctcaattat 1440

tttatatcca acccagcatc tttctagtcc ctatgctgta tgcttgaact tcggaaaatg 1500

cttttccccg cccaatcttc tctcaaatat aaacacatca cacagggtgt tgggggtggg 1560

ggggggggggt gggggactt atccctggcc ttaggacaca ggacaaatct attttggata 1620

gaaatgcctg aacagagacc cttatttgga aaggtgaatt aactttggtc acgacatgga 1680

ctgtcagaca aaatggcagt atcctaagag ttaaggcaca tcaaacacag gagtcgagag 1740

agtgcagttc agggaaaaag gagaggagga aacagtgagg cagggagaaa ggctttccaa 1800

ataagagttc atgttggaaa cttttgtcac ggctttattg agattaagtt cacatacaat 1860

ttgtatccat ttaaagtata caatttgatg acttttggta tattcagagt tgtgcaacca 1920

ttatcactag atcaatttta gaaagtttat caccccaaag agaaatcctg cacccatcag 1980

ccaacactcc ccaacccatc ggccacccca agccctctgc aaccacgaat cgactgtctc 2040

tgtagattgg ccttctggac gttctacata aatgaaatca tatagtatgt ggta 2094

<210> 26
<211> 4176
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 26
atggacaagc ccaagaaaaa gcggaaagtg aagtacagca tcggcctgga catcggcacc 60

aactctgtgg gctgggccgt gatcaccgac gagtacaagg tgcccagcaa gaaattcaag 120

gtgctgggca acaccgacag gcacagcatc aagaagaacc tgatcggcgc cctgctgttc 180

gacagcggcg aaacagccga ggccaccaga ctgaagagaa ccgccagaag aagatacacc 240

aggcggaaga acaggatctg ctatctgcaa gagatcttca gcaacgagat ggccaaggtg 300

gacgacagct tcttccacag actggaagag tccttcctgg tggaagagga caagaagcac 360

gagagacacc ccatcttcgg caacatcgtg gacgaggtgg cctaccacga gaagtacccc 420

accatctacc acctgagaaa gaaactggtg gacagcaccg acaaggccga cctgagactg 480

atctacctgg ccctggccca catgatcaag ttcagaggcc acttcctgat cgagggcgac 540

ctgaaccccg acaacagcga cgtggacaag ctgttcatcc agctggtgca gacctacaac 600

cagctgttcg aggaaaaccc catcaacgcc agcggcgtgg acgccaaggc tatcctgtct 660

gccagactga gcaagagcag aaggctggaa aatctgatcg cccagctgcc cggcgagaag 720

aagaacggcc tgttcggcaa cctgattgcc ctgagcctgg gcctgacccc caacttcaag 780

agcaacttcg acctggccga ggatgccaaa ctgcagctga gcaaggacac ctacgacgac 840

gacctggaca acctgctggc ccagatcggc gaccagtacg ccgacctgtt cctggccgcc 900

aagaacctgt ctgacgccat cctgctgagc gacatcctga gagtgaacac cgagatcacc 960

aaggcccccc tgagcgcctc tatgatcaag agatacgacg agcaccacca ggacctgacc 1020

ctgctgaaag ctctcgtgcg gcagcagctg cctgagaagt acaaagaaat cttcttcgac 1080

cagagcaaga acggctacgc cggctacatc gatggcggcg ctagccagga agagttctac 1140

aagttcatca agcccatcct ggaaaagatg gacggcaccg aggaactgct cgtgaagctg 1200

aacagagagg acctgctgag aaagcagaga accttcgaca acggcagcat cccccaccag 1260

atccacctgg gagagctgca cgctatcctg agaaggcagg aagatttta cccattcctg 1320

aaggacaacc gggaaaagat cgagaagatc ctgaccttca ggatccccta ctacgtgggc 1380

cccctggcca gaggcaacag cagattcgcc tggatgacca gaaagagcga ggaaaccatc 1440

acccctgga acttcgagga agtggtggac aagggcgcca gcgcccagag cttcatcgag 1500

agaatgacaa acttcgataa gaacctgccc aacgagaagg tgctgcccaa gcacagcctg 1560

ctgtacgagt acttcaccgt gtacaacgag ctgaccaaag tgaaatacgt gaccgaggga 1620

atgagaaagc ccgccttcct gagcggcgag cagaaaaagg ccatcgtgga cctgctgttc 1680

aagaccaaca gaaaagtgac cgtgaagcag ctgaaagagg actacttcaa gaaaatcgag 1740

tgcttcgact ccgtggaaat ctccggcgtg gaagatagat tcaacgcctc cctgggcaca 1800

taccacgatc tgctgaaaat tatcaaggac aaggacttcc tggataacga agagaacgag 1860

gacattctgg aagatatcgt gctgaccctg acactgtttg aggaccgcga gatgatcgag 1920

gaaaggctga aaacctacgc tcacctgttc gacgacaaag tgatgaagca gctgaagaga 1980

aggcggtaca ccggctgggg caggctgagc agaaagctga tcaacggcat cagagacaag 2040

cagagcggca agacaatcct ggatttcctg aagtccgacg gcttcgccaa ccggaacttc 2100

atgcagctga tccacgacga cagcctgaca ttcaaagagg acatccagaa agcccaggtg 2160

tccggccagg gcgactctct gcacgagcat atcgctaacc tggccggcag ccccgctatc 2220

aagaagggca tcctgcagac agtgaaggtg gtggacgagc tcgtgaaagt gatgggcaga 2280

cacaagcccg agaacatcgt gatcgagatg gctagagaga accagaccac ccagaaggga 2340

cagaagaact cccgcgagag gatgaagaga atcgaagagg gcatcaaaga gctgggcagc 2400

cagatcctga aagaacaccc cgtggaaaac acccagctgc agaacgagaa gctgtacctg 2460

tactacctgc agaatggccg ggatatgtac gtggaccagg aactggacat caacagactg 2520

tccgactacg atgtggacca tatcgtgcct cagagctttc tgaaggacga ctccatcgat 2580

aacaaagtgc tgactcggag cgacaagaac agaggcaaga gcgacaacgt gccctccgaa 2640

gaggtcgtga agaagatgaa gaactactgg cgacagctgc tgaacgccaa gctgattacc 2700

cagaggaagt tcgataacct gaccaaggcc gagagaggcg gcctgagcga gctggataag 2760

gccggcttca tcaagaggca gctggtggaa accagacaga tcacaaagca cgtggcacag 2820

atcctggact cccggatgaa cactaagtac gacgaaaacg ataagctgat ccgggaagtg 2880

aaagtgatca ccctgaagtc caagctggtg tccgatttcc ggaaggattt ccagttttac 2940

aaagtgcgcg agatcaacaa ctaccaccac gcccacgacg cctacctgaa cgccgtcgtg 3000

ggaaccgccc tgatcaaaaa gtaccctaag ctggaaagcg agttcgtgta cggcgactac 3060

aaggtgtacg acgtgcggaa gatgatcgcc aagagcgagc aggaaatcgg caaggctacc 3120

gccaagtact tcttctacag caacatcatg aacttttca agaccgaaat caccctggcc 3180

aacggcgaga tcagaaagcg ccctctgatc gagacaaacg gcgaaaccgg ggagatcgtg 3240

tgggataagg gcagagactt cgccacagtg cgaaaggtgc tgagcatgcc ccaagtgaat 3300

atcgtgaaaa agaccgaggt gcagacaggc ggcttcagca aagagtctat cctgcccaag 3360

aggaacagcg acaagctgat cgccagaaag aaggactggg accccaagaa gtacggcggc 3420

ttcgacagcc ctaccgtggc ctactctgtg ctggtggtgg ctaaggtgga aaagggcaag 3480

tccaagaaac tgaagagtgt gaaagagctg ctggggatca ccatcatgga aagaagcagc 3540

tttgagaaga accctatcga ctttctggaa gccaagggct acaaagaagt gaaaaaggac 3600

ctgatcatca agctgcctaa gtactccctg ttcgagctgg aaaacggcag aaagagaatg 3660

ctggcctctg ccggcgaact gcagaaggga aacgagctgg ccctgcctag caaatatgtg 3720

aacttcctgt acctggcctc ccactatgag aagctgaagg gcagccctga ggacaacgaa 3780

cagaaacagc tgtttgtgga acagcataag cactacctgg acgagatcat cgagcagatc 3840

agcgagttct ccaagagagt gatcctggcc gacgccaatc tggacaaggt gctgtctgcc 3900

tacaacaagc acagggacaa gcctatcaga gagcaggccg agaatatcat ccacctgttc 3960

accctgacaa acctgggcgc tcctgccgcc ttcaagtact ttgacaccac catcgaccgg 4020

aagaggtaca ccagcaccaa agaggtgctg gacgccaccc tgatccacca gagcatcacc 4080

ggcctgtacg agacaagaat cgacctgtct cagctgggag gcgacaagag acctgccgcc 4140

actaagaagg ccggacaggc caaaaagaag aagtga 4176

<210> 27
<211> 1391
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 27

Met Asp Lys Pro Lys Lys Lys Arg Lys Val Lys Tyr Ser Ile Gly Leu
1 5 10 15

Asp Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
20 25 30

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
35 40 45

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
50 55 60

Thr Ala Glu Ala Thr Arg Leu Lys Arg Thr Ala Arg Arg Arg Tyr Thr
65 70 75 80

Arg Arg Lys Asn Arg Ile Cys Tyr Leu Gln Glu Ile Phe Ser Asn Glu
85 90 95

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe
100 105 110

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
115 120 125

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
130 135 140

Leu Arg Lys Lys Leu Val Asp Ser Thr Asp Lys Ala Asp Leu Arg Leu
145 150 155 160

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
165 170 175

```
Ile Glu Gly Asp Leu Asn Pro Asp Asn Ser Asp Val Asp Lys Leu Phe
            180                 185                 190

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
        195                 200                 205

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
    210                 215                 220

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
225                 230                 235                 240

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
                245                 250                 255

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
            260                 265                 270

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
        275                 280                 285

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
    290                 295                 300

Asp Ala Ile Leu Leu Ser Asp Ile Leu Arg Val Asn Thr Glu Ile Thr
305                 310                 315                 320

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
                325                 330                 335

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
            340                 345                 350

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
        355                 360                 365

Tyr Ile Asp Gly Gly Ala Ser Gln Glu Glu Phe Tyr Lys Phe Ile Lys
    370                 375                 380

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
385                 390                 395                 400

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
                405                 410                 415

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
            420                 425                 430

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
        435                 440                 445
```

```
Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
    450                 455                 460

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
465                 470                 475                 480

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
                485                 490                 495

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
            500                 505                 510

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
        515                 520                 525

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
    530                 535                 540

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
545                 550                 555                 560

Lys Thr Asn Arg Lys Val Thr Val Lys Gln Leu Lys Glu Asp Tyr Phe
                565                 570                 575

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
            580                 585                 590

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
        595                 600                 605

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
    610                 615                 620

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
625                 630                 635                 640

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
                645                 650                 655

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
            660                 665                 670

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
        675                 680                 685

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
    690                 695                 700

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
705                 710                 715                 720
```

```
Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
                725                 730                 735

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
            740                 745                 750

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
        755                 760                 765

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
    770                 775                 780

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
785                 790                 795                 800

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
                805                 810                 815

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
            820                 825                 830

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp His Ile
        835                 840                 845

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
    850                 855                 860

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser Glu
865                 870                 875                 880

Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu Asn Ala
                885                 890                 895

Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys Ala Glu Arg
            900                 905                 910

Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile Lys Arg Gln Leu
        915                 920                 925

Val Glu Thr Arg Gln Ile Thr Lys His Val Ala Gln Ile Leu Asp Ser
    930                 935                 940

Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp Lys Leu Ile Arg Glu Val
945                 950                 955                 960

Lys Val Ile Thr Leu Lys Ser Lys Leu Val Ser Asp Phe Arg Lys Asp
                965                 970                 975

Phe Gln Phe Tyr Lys Val Arg Glu Ile Asn Asn Tyr His His Ala His
            980                 985                 990

Asp Ala Tyr Leu Asn Ala Val Val  Gly Thr Ala Leu Ile  Lys Lys Tyr
```

```
        995                 1000                1005

Pro Lys  Leu Glu Ser Glu Phe  Val Tyr Gly Asp Tyr  Lys Val Tyr
    1010                1015                1020

Asp Val  Arg Lys Met Ile Ala  Lys Ser Glu Gln Glu  Ile Gly Lys
    1025                1030                1035

Ala Thr  Ala Lys Tyr Phe Phe  Tyr Ser Asn Ile Met  Asn Phe Phe
    1040                1045                1050

Lys Thr  Glu Ile Thr Leu Ala  Asn Gly Glu Ile Arg  Lys Arg Pro
    1055                1060                1065

Leu Ile  Glu Thr Asn Gly Glu  Thr Gly Glu Ile Val  Trp Asp Lys
    1070                1075                1080

Gly Arg  Asp Phe Ala Thr Val  Arg Lys Val Leu Ser  Met Pro Gln
    1085                1090                1095

Val Asn  Ile Val Lys Lys Thr  Glu Val Gln Thr Gly  Gly Phe Ser
    1100                1105                1110

Lys Glu  Ser Ile Leu Pro Lys  Arg Asn Ser Asp Lys  Leu Ile Ala
    1115                1120                1125

Arg Lys  Lys Asp Trp Asp Pro  Lys Lys Tyr Gly Gly  Phe Asp Ser
    1130                1135                1140

Pro Thr  Val Ala Tyr Ser Val  Leu Val Val Ala Lys  Val Glu Lys
    1145                1150                1155

Gly Lys  Ser Lys Lys Leu Lys  Ser Val Lys Glu Leu  Leu Gly Ile
    1160                1165                1170

Thr Ile  Met Glu Arg Ser Ser  Phe Glu Lys Asn Pro  Ile Asp Phe
    1175                1180                1185

Leu Glu  Ala Lys Gly Tyr Lys  Glu Val Lys Lys Asp  Leu Ile Ile
    1190                1195                1200

Lys Leu  Pro Lys Tyr Ser Leu  Phe Glu Leu Glu Asn  Gly Arg Lys
    1205                1210                1215

Arg Met  Leu Ala Ser Ala Gly  Glu Leu Gln Lys Gly  Asn Glu Leu
    1220                1225                1230

Ala Leu  Pro Ser Lys Tyr Val  Asn Phe Leu Tyr Leu  Ala Ser His
    1235                1240                1245

Tyr Glu  Lys Leu Lys Gly Ser  Pro Glu Asp Asn Glu  Gln Lys Gln
    1250                1255                1260
```

```
Leu Phe  Val Glu Gln His Lys  His Tyr Leu Asp Glu  Ile Ile Glu
    1265                1270                1275

Gln Ile  Ser Glu Phe Ser Lys  Arg Val Ile Leu Ala  Asp Ala Asn
    1280                1285                1290

Leu Asp  Lys Val Leu Ser Ala  Tyr Asn Lys His Arg  Asp Lys Pro
    1295                1300                1305

Ile Arg  Glu Gln Ala Glu Asn  Ile Ile His Leu Phe  Thr Leu Thr
    1310                1315                1320

Asn Leu  Gly Ala Pro Ala Ala  Phe Lys Tyr Phe Asp  Thr Thr Ile
    1325                1330                1335

Asp Arg  Lys Arg Tyr Thr Ser  Thr Lys Glu Val Leu  Asp Ala Thr
    1340                1345                1350

Leu Ile  His Gln Ser Ile Thr  Gly Leu Tyr Glu Thr  Arg Ile Asp
    1355                1360                1365

Leu Ser  Gln Leu Gly Gly Asp  Lys Arg Pro Ala Ala  Thr Lys Lys
    1370                1375                1380

Ala Gly  Gln Ala Lys Lys Lys  Lys
    1385                1390
```

<210> 28
<211> 4218
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 28

```
atggccccaa agaagaagcg gaaggtcggt atccacggag tcccagcagc cgacaagaag       60

tacagcatcg gcctggacat cggcaccaac tctgtgggct gggccgtgat caccgacgag      120

tacaaggtgc ccagcaagaa attcaaggtg ctgggcaaca ccgaccggca cagcatcaag      180

aagaacctga tcggagccct gctgttcgac agcggcgaaa cagccgaggc cacccggctg      240

aagagaaccg ccagaagaag atacaccaga cggaagaacc ggatctgcta tctgcaagag      300

atcttcagca acgagatggc caaggtggac gacagcttct tccacagact ggaagagtcc      360

ttcctggtgg aagaggacaa gaagcacgag agacacccca tcttcggcaa catcgtggac      420

gaggtggcct accacgagaa gtaccccacc atctaccacc tgagaaagaa actggtggac      480

agcaccgaca aggccgacct gagactgatc tacctggccc tggcccacat gatcaagttc      540

agaggccact tcctgatcga gggcgacctg aaccccgaca acagcgacgt ggacaagctg      600

ttcatccagc tggtgcagac ctacaaccag ctgttcgagg aaaaccccat caacgccagc      660
```

ggcgtggacg ccaaggctat cctgtctgcc agactgagca agagcagaag gctggaaaat 720

ctgatcgccc agctgcccgg cgagaagaag aacggcctgt tcggcaacct gattgccctg 780

agcctgggcc tgacccccaa cttcaagagc aacttcgacc tggccgagga tgccaaactg 840

cagctgagca aggacaccta cgacgacgac ctggacaacc tgctggccca gatcggcgac 900

cagtacgccg acctgttcct ggccgccaag aacctgtctg acgccatcct gctgagcgac 960

atcctgagag tgaacaccga gatcaccaag gccccccctga gcgcctctat gatcaagaga 1020

tacgacgagc accaccagga cctgaccctg ctgaaagctc tcgtgcggca gcagctgcct 1080

gagaagtaca aagaaatctt cttcgaccag agcaagaacg gctacgccgg ctacatcgat 1140

ggcggcgcta gccaggaaga gttctacaag ttcatcaagc ccatcctgga aaagatggac 1200

ggcaccgagg aactgctcgt gaagctgaac agagaggacc tgctgagaaa gcagagaacc 1260

ttcgacaacg gcagcatccc ccaccagatc cacctgggag agctgcacgc tatcctgaga 1320

aggcaggaag atttttaccc attcctgaag gacaaccggg aaaagatcga gaagatcctg 1380

accttcagga tcccctacta cgtgggcccc ctggccagag gcaacagcag attcgcctgg 1440

atgaccagaa agagcgagga aaccatcacc ccctggaact tcgaggaagt ggtggacaag 1500

ggcgccagcg cccagagctt catcgagaga atgacaaact tcgataagaa cctgcccaac 1560

gagaaggtgc tgcccaagca cagcctgctg tacgagtact tcaccgtgta caacgagctg 1620

accaaagtga aatacgtgac cgagggaatg agaaagcccg ccttcctgag cggcgagcag 1680

aaaaaggcca tcgtggacct gctgttcaag accaacagaa aagtgaccgt gaagcagctg 1740

aaagaggact acttcaagaa aatcgagtgc ttcgactccg tggaaatctc cggcgtggaa 1800

gatagattca acgcctccct gggcacatac cacgatctgc tgaaaattat caaggacaag 1860

gacttcctgg ataacgaaga gaacgaggac attctggaag atatcgtgct gaccctgaca 1920

ctgtttgagg accgcgagat gatcgaggaa aggctgaaaa cctacgctca cctgttcgac 1980

gacaaagtga tgaagcagct gaagagaagg cggtacaccg gctggggcag gctgagcaga 2040

aagctgatca acggcatcag agacaagcag agcggcaaga caatcctgga tttcctgaag 2100

tccgacggct tcgccaaccg gaacttcatg cagctgatcc acgacgacag cctgacattc 2160

aaagaggaca tccagaaagc ccaggtgtcc ggccagggcg actctctgca cgagcatatc 2220

gctaacctgg ccggcagccc cgctatcaag aagggcatcc tgcagacagt gaaggtggtg 2280

gacgagctcg tgaaagtgat gggcagacac aagcccgaga acatcgtgat cgagatggct 2340

agagagaacc agaccaccca gaagggacag aagaactccc gcgagaggat gaagagaatc 2400

gaagagggca tcaaagagct gggcagccag atcctgaaag aacaccccgt ggaaaacacc 2460

cagctgcaga acgagaagct gtacctgtac tacctgcaga atggccggga tatgtacgtg 2520

gaccaggaac tggacatcaa cagactgtcc gactacgatg tggaccatat cgtgcctcag 2580

agctttctga aggacgactc catcgataac aaagtgctga ctcggagcga caagaacaga 2640

ggcaagagcg acaacgtgcc ctccgaagag gtcgtgaaga agatgaagaa ctactggcga 2700

cagctgctga acgccaagct gattacccag aggaagttcg ataacctgac caaggccgag 2760

agaggcggcc tgagcgagct ggataaggcc ggcttcatca agaggcagct ggtggaaacc 2820

agacagatca caaagcacgt ggcacagatc ctggactccc ggatgaacac taagtacgac 2880

gaaaacgata agctgatccg ggaagtgaaa gtgatcaccc tgaagtccaa gctggtgtcc 2940

gatttccgga aggatttcca gttttacaaa gtgcgcgaga tcaacaacta ccaccacgcc 3000

cacgacgcct acctgaacgc cgtcgtggga accgccctga tcaaaaagta ccctaagctg 3060

gaaagcgagt tcgtgtacgg cgactacaag gtgtacgacg tgcggaagat gatcgccaag 3120

agcgagcagg aaatcggcaa ggctaccgcc aagtacttct tctacagcaa catcatgaac 3180

tttttcaaga ccgaaatcac cctggccaac ggcgagatca gaaagcgccc tctgatcgag 3240

acaaacggcg aaaccgggga gatcgtgtgg gataagggca gagacttcgc cacagtgcga 3300

aaggtgctga gcatgcccca agtgaatatc gtgaaaaaga ccgaggtgca gacaggcggc 3360

ttcagcaaag agtctatcct gcccaagagg aacagcgaca agctgatcgc cagaaagaag 3420

gactgggacc ccaagaagta cggcggcttc gacagcccta ccgtggccta ctctgtgctg 3480

gtggtggcta aggtggaaaa gggcaagtcc aagaaactga agagtgtgaa agagctgctg 3540

gggatcacca tcatggaaag aagcagcttt gagaagaacc ctatcgactt tctggaagcc 3600

aagggctaca aagaagtgaa aaaggacctg atcatcaagc tgcctaagta ctccctgttc 3660

gagctggaaa acggcagaaa gagaatgctg gcctctgccg gcgaactgca gaagggaaac 3720

gagctggccc tgcctagcaa atatgtgaac ttcctgtacc tggcctccca ctatgagaag 3780

ctgaagggca gccctgagga caacgaacag aaacagctgt ttgtggaaca gcataagcac 3840

tacctggacg agatcatcga gcagatcagc gagttctcca agagagtgat cctggccgac 3900

gccaatctgg acaaggtgct gtctgcctac aacaagcaca gggacaagcc tatcagagag 3960

caggccgaga atatcatcca cctgttcacc ctgacaaacc tgggcgctcc tgccgccttc 4020

aagtactttg acaccaccat cgaccggaag aggtacacca gcaccaaaga ggtgctggac 4080

gccaccctga tccaccagag catcaccggc ctgtacgaga caagaatcga cctgtctcag 4140

ctgggaggcg acaagagacc tgccgccact aagaaggccg gacaggccaa aaagaagaag 4200

tgagcggccg cttaatta 4218

<210> 29
<211> 16
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 29
guuuuagagc uaugcu 16

<210> 30
<211> 67
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 30
agcauagcaa guuaaaauaa ggcuaguccg uuaucaacuu gaaaaagugg caccgagucg 60

gugcuuu 67

<210> 31
<211> 72
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 31
aaacagcaua gcaaguuaaa auaaggcuag uccguuauca acuugaaaaa guggcaccga 60

gucggugcuu uu 72

<210> 32
<211> 82
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 32
guuggaacca uucaaaacag cauagcaagu uaaaauaagg cuaguccguu aucaacuuga 60

aaaaguggca ccgagucggu gc 82

<210> 33
<211> 77
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 33
guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc cguuaucaac uugaaaaagu 60

ggcaccgagu cggugcu 77

<210> 34
<211> 82
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 34
guuggaacca uucaaaacag cauagcaagu uaaaauaagg cuaguccguu aucaacuuga 60

aaaaguggca ccgagucggu gc 82

<210> 35
<211> 76
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 35
guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc cguuaucaac uugaaaaagu   60

ggcaccgagu cggugc   76

<210> 36
<211> 86
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 36
guuuaagagc uaugcuggaa acagcauagc aaguuuaaau aaggcuaguc cguuaucaac   60

uugaaaaagu ggcaccgagu cggugc   86

<210> 37
<211> 83
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 37
guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc cguuaucaac uugaaaaagu   60

ggcaccgagu cggugcuuuu uuu   83

<210> 38
<211> 80
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 38
guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc cguuaucaac uugaaaaagu   60

ggcaccgagu cggugcuuuu   80

<210> 39
<211> 92
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 39
guuuaagagc uaugcuggaa acagcauagc aaguuuaaau aaggcuaguc cguuaucaac   60

uugaaaaagu ggcaccgagu cggugcuuuu uu   92

<210> 40
<211> 23
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (2)..(21)
<223> n is a, c, g, or t

<400> 40
gnnnnnnnnn nnnnnnnnnn ngg 23

<210> 41
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(21)
<223> n is a, c, g, or t

<400> 41
nnnnnnnnnn nnnnnnnnnn ngg 23

<210> 42
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (3)..(23)
<223> n is a, c, g, or t

<400> 42
ggnnnnnnnn nnnnnnnnnn nnngg 25

<210> 43
<211> 103
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 43
gagcacggaa cgaccugagu guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc 60

cguuaucaac uugaaaaagu ggcaccgagu cggugcuuuu uuu 103

<210> 44
<211> 100
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(20)
<223> n is a, c, g, or u

<400> 44
nnnnnnnnnn nnnnnnnnnn guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc   60

cguuaucaac uugaaaaagu ggcaccgagu cggugcuuuu   100

<210> 45
<211> 3519
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(141)
<223> ITR

<220>
<221> misc_feature
<222> (156)..(178)
<223> Guide RNA Target Sequence Plus PAM

<220>
<221> misc_feature
<222> (179)..(274)
<223> Splice Acceptor

<220>
<221> misc_feature
<222> (275)..(897)
<223> Human RS1

<220>
<221> misc_feature
<222> (898)..(2991)
<223> Human RS1 PolyA Region

<220>
<221> misc_feature
<222> (2992)..(3240)
<223> U6

<220>
<221> misc_feature
<222> (3241)..(3260)
<223> Guide Sequence

<220>
<221> misc_feature
<222> (3261)..(3343)
<223> Guide RNA Scaffold

<220>
<221> misc_feature
<222> (3344)..(3366)
<223> Guide RNA Target Sequence Plus PAM

<220>
<221> misc_feature
<222> (3379)..(3519)
<223> ITR

<400> 45
cctgcaggca gctgcgcgct cgctcgctca ctgaggccgc ccgggcaaag cccgggcgtc 60

gggcgacctt tggtcgcccg gcctcagtga gcgagcgagc gcgcagagag ggagtggcca 120

actccatcac taggggttcc tgcgctagct gtacacctac tcaggtcgtt ccgtgctcgt 180

tgaccagctc ggcggtgacc tgcacgtcta gggcgcagta gtccagggtt tccttgatga 240

tgtcatactt atcctgtccc tttttttttcc acagccacat tgggattatc gtctaccgag 300

gatgaaggcg aggacccctg gtaccaaaaa gcatgcaagt gcgattgcca aggaggaccc 360

aatgctctgt ggtctgcagg tgccacctcc ttggactgta taccagaatg cccatatcac 420

aagcctctgg gtttcgagtc aggggaggtc acaccggacc agatcacctg ctctaacccg 480

gagcagtatg tgggctggta ttcttcgtgg actgcaaaca aggcccggct caacagtcaa 540

ggctttgggt gtgcctggct ctccaagttc caggacagta gccagtggtt acagatagat 600

ctgaaggaga tcaaagtgat ttcagggatc ctcacccagg ggcgctgtga catcgatgag 660

tggatgacca agtacagcgt gcagtacagg accgatgagc gcctgaactg gatttactac 720

aaggaccaga ctggaaacaa ccgggtcttc tatggcaact cggaccgcac ctccacggtt 780

cagaacctgc tgcggccccc catcatctcc cgcttcatcc gcctcatccc gctgggctgg 840

cacgtccgca ttgccatccg gatggagctg ctggagtgcg tcagcaagtg tgcctgatgc 900

ctgcctcagc tcggcgcctg ccaggggggtg actggcacag agcgggccgt aggggacccc 960

ctcacacacc accgagatgg acagggctat atttcgcaaa gcaattgtaa ctgcagtgct 1020

gggtagataa ttttttttttt tttaagatat agctttctga tttcaatgaa ataaaaatga 1080

acttattccc cactcagggc cagagaaagt cagaacaaag aaaatgtccc cgaaacgaat 1140

tttcttacaa aagcctaagt agcaggggta attttctgct catttttttgt ctcagtgata 1200

ctgtgaaagg tgcagtctca ggggaacaca aagcagccct gataatttga aaattcattt 1260

gctttaccac attcaagaca gaaacataca gtttcctaaa gcctggcttt gaatgcagaa 1320

gggagcagct cctcctagtt aagtttccac taaatcatcg ccaaagagga cttcagagcc 1380

ctggggaggc agctgagggt ctcaagggtg actgggtggc agggatgagt gcggtgggtg 1440

agaatcccgg tgccctgaga ggctatacgt gacaaatgac caaaagccca aggtagggga 1500

gtttcctctg ctcacagttc ttaccttcaa ggcggatctg ggcttccacc ctcatgaaca 1560

cagggattgg ggagggacca gagcgcccaa tacacacagc tccattatgc aatccattcc 1620

agcaaattcc ccgtgtctgt ggtcaccatt taggtgatca tacaggacag gctgcacatc 1680

tcagtatatg tagggacccc aaatgaccac aacacagtac aattgccctt tacctagggc 1740

taccatttcc tagcaaacca aacatagttc gagaacagct ggcccaggag ctaccactgg 1800

ctactcagag gaggctcatt agctggctac atgcttcgca ggaagtggga aggactcaca 1860

tcataaaaag gaccatgtag ctttttccct gaaagcttct caccctccac cctctgcctt 1920

gcaatacgca aactgcgcct gctcctgaaa agctctctgg gaaggaatgg gcctggcttt 1980

ccgttcctgg aggcggcgcc ttagattggg aggcctcatt ggccacttag agcgcagcct 2040

gagtttccag gccccttcct gggagaggct gttaacacgg gggaggggca ggagagggat 2100

atggagagca ggtggtggaa tcagaggacg aggctgctct aaagactgtt ctggccccag 2160

acacagggta gtctttgcta gcagctcatt tccgagttac ttttcatttt caaatgccaa 2220

ggcaagtgac tagactcgcg ctaatacagt gctggacaac acattcacct tttctgtgaa 2280

caggcagcct tctaaaagcc ccaaacatcc ttcttgatgc tttgggggct caattatttt 2340

atatccaacc cagcatcttt ctagtcccta tgctgtatgc ttgaacttcg gaaaatgctt 2400

ttccccgccc aatcttctct caaatataaa cacatcacac agggtgttgg gggtgggggg 2460

ggggggtggg gggacttatc cctggcctta ggacacagga caaatctatt ttggatagaa 2520

atgcctgaac agagaccctt atttggaaag gtgaattaac tttggtcacg acatggactg 2580

tcagacaaaa tggcagtatc ctaagagtta aggcacatca aacacaggag tcgagagagt 2640

gcagttcagg gaaaaaggag aggaggaaac agtgaggcag ggagaaaggc tttccaaata 2700

agagttcatg ttggaaactt ttgtcacggc tttattgaga ttaagttcac atacaatttg 2760

tatccattta aagtatacaa tttgatgact tttggtatat tcagagttgt gcaaccatta 2820

tcactagatc aattttagaa agtttatcac cccaaagaga aatcctgcac ccatcagcca 2880

acactcccca acccatcggc caccccaagc cctctgcaac cacgaatcga ctgtctctgt 2940

agattggcct tctggacgtt ctacataaat gaaatcatat agtatgtggt agagggccta 3000

tttcccatga ttccttcata tttgcatata cgatacaagg ctgttagaga gataattgga 3060

attaatttga ctgtaaacac aaagatatta gtacaaaata cgtgacgtag aaagtaataa 3120

tttcttgggt agtttgcagt tttaaaatta tgttttaaaa tggactatca tatgcttacc 3180

gtaacttgaa agtatttcga tttcttggct ttatatatct tgtggaaagg acgaaacacc 3240

gagcacggaa cgacctgagt gttttagagc tagaaatagc aagttaaaat aaggctagtc 3300

cgttatcaac ttgaaaaagt ggcaccgagt cggtgctttt tttcctactc aggtcgttcc 3360

gtgctctcta gaggccgcag gaacccctag tgatggagtt ggccactccc tctctgcgcg 3420

ctcgctcgct cactgaggcc gggcgaccaa aggtcgcccg acgcccgggc tttgcccggg 3480

cggcctcagt gagcgagcga gcgcgcagct gcctgcagg 3519

<210> 46
<211> 2455
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(161)

<223> ITR

<220>
<221> misc_feature
<222> (168)..(227)
<223> Splice Acceptor

<220>
<221> misc_feature
<222> (228)..(850)
<223> Human RS1

<220>
<221> misc_feature
<222> (851)..(1076)
<223> bGH polyA

<220>
<221> misc_feature
<222> (1077)..(1325)
<223> U6

<220>
<221> misc_feature
<222> (1326)..(1345)
<223> Guide Sequence

<220>
<221> misc_feature
<222> (1346)..(1428)
<223> Guide RNA Scaffold

<220>
<221> misc_feature
<222> (1429)..(1650)
<223> Reverse Complement of SV40 polyA

<220>
<221> misc_feature
<222> (1651)..(2273)
<223> Reverse Complement of Codon-Optimized hRS1

<220>
<221> misc_feature
<222> (2274)..(2336)
<223> Reverse Complement of Splice Acceptor

<220>
<221> misc_feature
<222> (2344)..(2455)
<223> ITR

<400> 46
ggccactccc tctctgcgcg ctcgctcgct cactgaggcc gggcgaccaa aggtcgcccg   60

acgcccgggc tttgcccggg cggcctcagt gagcgagcga gcgcgcagag agggagtggc   120

caactccatc actaggggtt cctggagggg tggagtcgtg acctagggat gctgttggat   180

ttctctttca ttaattagat tttttctgtc tcatcctttt gctttagcca cattgggatt   240

atcgtctacc gaggatgaag gcgaggaccc ctggtaccaa aaagcatgca agtgcgattg   300

ccaaggagga cccaatgctc tgtggtctgc aggtgccacc tccttggact gtataccaga   360

atgcccatat cacaagcctc tgggtttcga gtcaggggag gtcacaccgg accagatcac   420

ctgctctaac ccggagcagt atgtgggctg gtattcttcg tggactgcaa acaaggcccg   480

gctcaacagt caaggctttg ggtgtgcctg gctctccaag ttccaggaca gtagccagtg 540

gttacagata gatctgaagg agatcaaagt gatttcaggg atcctcaccc aggggcgctg 600

tgacatcgat gagtggatga ccaagtacag cgtgcagtac aggaccgatg agcgcctgaa 660

ctggatttac tacaaggacc agactggaaa caaccgggtc ttctatggca actcggaccg 720

cacctccacg gttcagaacc tgctgcggcc ccccatcatc tcccgcttca tccgcctcat 780

cccgctgggc tggcacgtcc gcattgccat ccggatggag ctgctggagt gcgtcagcaa 840

gtgtgcctga ctgtgccttc tagttgccag ccatctgttg tttgcccctc ccccgtgcct 900

tccttgaccc tggaaggtgc cactcccact gtcctttcct aataaaatga ggaaattgca 960

tcgcattgtc tgagtaggtg tcattctatt ctgggggggtg gggtggggca ggacagcaag 1020

ggggaggatt gggaagacaa tagcaggcat gctggggatg cggtgggctc tatggcgagg 1080

gcctatttcc catgattcct tcatatttgc atatacgata caaggctgtt agagagataa 1140

ttggaattaa tttgactgta aacacaaaga tattagtaca aaatacgtga cgtagaaagt 1200

aataatttct tgggtagttt gcagttttaa aattatgttt taaaatggac tatcatatgc 1260

ttaccgtaac ttgaaagtat ttcgatttct tggctttata tatcttgtgg aaaggacgaa 1320

acaccgagca cggaacgacc tgagtgtttt agagctagaa atagcaagtt aaaataaggc 1380

tagtccgtta tcaacttgaa aaagtggcac cgagtcggtg ctttttttta ccacatttgt 1440

agaggtttta cttgctttaa aaaacctccc acacctcccc ctgaacctga aacataaaat 1500

gaatgcaatt gttgttgtta acttgtttat tgcagcttat aatggttaca aataaagcaa 1560

tagcatcaca aatttcacaa ataaagcatt tttttcactg cattctagtt gtggtttgtc 1620

caaactcatc aatgtatctt atcatgtctg tcaggcgcac ttggacacgc attccagcag 1680

ttccattctg atggcgatcc gcacgtgcca gccgagaggg atcagtctga tgaatctgga 1740

gatgatagga ggcctcagca gattctgcac ggtgctggtt ctgtcgctgt tgccgtagaa 1800

cactctgttg ttgccggtct ggtccttgta gtagatccag ttcagtctct cgtcggttct 1860

gtactgcacg ctgtacttgg tcatccactc gtcgatgtcg catctgccct gtgtcaggat 1920

gccgctgatg actttgatct ctttcaggtc gatctgcagc cactggctag agtcctggaa 1980

cttgctcagc caggcacagc cgaagccttg gctgttcagt ctggccttgt tggctgtcca 2040

gctagagtac cagccgacgt actgctcggg gttgctacag gtgatctggt caggggtcac 2100

ttcgccgctc tcgaagccca gaggcttatg gtaggggcac tcagggatgc agtccaggct 2160

tgtagcgcca gcgctccaaa gagcattagg gccgccttga cagtcgcact tgcaggcttt 2220

ctgataccag gggtcctcgc cttcatcttc tgtgctgctc aggcccagtg tggctgagca 2280

aaagaacaag agagggaaaa aatgaaatta agaaaggaaa gaaggcaaaa tgaaaagcta 2340

gtccactccc tctctgcgcg ctcgctcgct cactgaggcc gggcgaccaa aggtcgcccg 2400

acgcccgggc tttgcccggg cggcctcagt gagcgagcga gcgcgcagag aggga 2455

<210> 47
<211> 2763

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (1)..(141)
<223> ITR

<220>
<221> misc_feature
<222> (156)..(379)
<223> Splice Acceptor

<220>
<221> misc_feature
<222> (380)..(1002)
<223> Human RS1

<220>
<221> misc_feature
<222> (1003)..(1228)
<223> bGH polyA

<220>
<221> misc_feature
<222> (1229)..(1477)
<223> U6

<220>
<221> misc_feature
<222> (1478)..(1497)
<223> Guide Sequence

<220>
<221> misc_feature
<222> (1498)..(1574)
<223> Guide RNA Scaffold

<220>
<221> misc_feature
<222> (1575)..(1802)
<223> Reverse Complement of SV40 polyA

<220>
<221> misc_feature
<222> (1803)..(2425)
<223> Reverse Complement of Codon-Optimized Human RS1

<220>
<221> misc_feature
<222> (2426)..(2608)
<223> Splice Acceptor

<220>
<221> misc_feature
<222> (2609)..(2763)
<223> ITR

<400> 47
cctgcaggca gctgcgcgct cgctcgctca ctgaggccgc ccgggcaaag cccgggcgtc   60

gggcgacctt tggtcgcccg gcctcagtga gcgagcgagc gcgcagagag ggagtggcca   120

actccatcac taggggttcc tgcgctagct gtacactata atgatgatct tgttctttct   180

gtttaatttt actgtcccta gcttcttagc atctgcggat gtttttcctg gcagatattt 240

actcaccatg acttcttcca gaaggggtgt tggtagcttt catgtgacta tttctatttc 300

acttttccat gtaacgagtg atgctgttgg atttctcttt cattaattag atttttttctg 360

tctcatcctt ttgctttagc cacattggga ttatcgtcta ccgaggatga aggcgaggac 420

ccctggtacc aaaaagcatg caagtgcgat tgccaaggag gacccaatgc tctgtggtct 480

gcaggtgcca cctccttgga ctgtatacca gaatgcccat atcacaagcc tctgggtttc 540

gagtcagggg aggtcacacc ggaccagatc acctgctcta acccggagca gtatgtgggc 600

tggtattctt cgtggactgc aaacaaggcc cggctcaaca gtcaaggctt tgggtgtgcc 660

tggctctcca agttccagga cagtagccag tggttacaga tagatctgaa ggagatcaaa 720

gtgatttcag ggatcctcac ccaggggcgc tgtgacatcg atgagtggat gaccaagtac 780

agcgtgcagt acaggaccga tgagcgcctg aactggattt actacaagga ccagactgga 840

aacaaccggg tcttctatgg caactcggac cgcacctcca cggttcagaa cctgctgcgg 900

ccccccatca tctcccgctt catccgcctc atcccgctgg gctggcacgt ccgcattgcc 960

atccggatgg agctgctgga gtgcgtcagc aagtgtgcct gactgtgcct tctagttgcc 1020

agccatctgt tgtttgcccc tcccccgtgc cttccttgac cctggaaggt gccactccca 1080

ctgtcctttc ctaataaaat gaggaaattg catcgcattg tctgagtagg tgtcattcta 1140

ttctgggggg tggggtgggg caggacagca agggggagga ttgggaagac aatagcaggc 1200

atgctgggga tgcggtgggc tctatggcga gggcctattt cccatgattc cttcatattt 1260

gcatatacga tacaaggctg ttagagagat aattggaatt aatttgactg taaacacaaa 1320

gatattagta caaaatacgt gacgtagaaa gtaataattt cttgggtagt ttgcagtttt 1380

aaaattatgt tttaaaatgg actatcatat gcttaccgta acttgaaagt atttcgattt 1440

cttggcttta tatatcttgt ggaaaggacg aaacaccgag cacggaacga cctgagtgtt 1500

ttagagctag aaatagcaag ttaaaataag gctagtccgt tatcaacttg aaaaagtggc 1560

accgagtcgg tgctttttttt taccacattt gtagaggttt tacttgcttt aaaaaacctc 1620

ccacacctcc ccctgaacct gaaacataaa atgaatgcaa ttgttgttgt taacttgttt 1680

attgcagctt ataatggtta caaataaagc aatagcatca caaatttcac aaataaagca 1740

tttttttcac tgcattctag ttgtggtttg tccaaactca tcaatgtatc ttatcatgtc 1800

tgtcaggcgc acttggacac gcattccagc agttccattc tgatggcgat ccgcacgtgc 1860

cagccgagag ggatcagtct gatgaatctg gagatgatag gaggcctcag cagattctgc 1920

acggtgctgg ttctgtcgct gttgccgtag aacactctgt tgttgccggt ctggtccttg 1980

tagtagatcc agttcagtct ctcgtcggtt ctgtactgca cgctgtactt ggtcatccac 2040

tcgtcgatgt cgcatctgcc ctgtgtcagg atgccgctga tgactttgat ctctttcagg 2100

tcgatctgca gccactggct agagtcctgg aacttgctca gccaggcaca gccgaagcct 2160

tggctgttca gtctggcctt gttggctgtc cagctagagt accagccgac gtactgctcg 2220

gggttgctac aggtgatctg gtcaggggtc acttcgccgc tctcgaagcc cagaggctta 2280

tggtaggggc actcagggat gcagtccagg cttgtagcgc cagcgctcca aagagcatta 2340

gggccgcctt gacagtcgca cttgcaggct ttctgatacc aggggtcctc gccttcatct 2400

tctgtgctgc tcaggcccag tgtggctgag caaaagaaca agagagggaa aaaatgaaat 2460

taagaaagga aagaaggcaa aatgaaaaca atgccataga gattaaggag ctcattctgg 2520

agggaggaaa aggatggcaa tgactgttgt tttttcttat agaattatgg aaaatatatt 2580

aatatagcaa agcagggtgc agtacagccc tctagaggcc gcaggaaccc ctagtgatgg 2640

agttggccac tccctctctg cgcgctcgct cgctcactga ggccgggcga ccaaaggtcg 2700

cccgacgccc gggctttgcc cgggcggcct cagtgagcga gcgagcgcgc agctgcctgc 2760

agg 2763

<210> 48
<211> 224
<212> PRT
<213> Mus musculus

<400> 48

Met Pro His Lys Ile Glu Gly Phe Phe Leu Leu Leu Leu Phe Gly Tyr
1 5 10 15

Glu Ala Thr Leu Gly Leu Ser Ser Thr Glu Asp Glu Gly Glu Asp Pro
20 25 30

Trp Tyr Gln Lys Ala Cys Lys Cys Asp Cys Gln Val Gly Ala Asn Ala
35 40 45

Leu Trp Ser Ala Gly Ala Thr Ser Leu Asp Cys Ile Pro Glu Cys Pro
50 55 60

Tyr His Lys Pro Leu Gly Phe Glu Ser Gly Glu Val Thr Pro Asp Gln
65 70 75 80

Ile Thr Cys Ser Asn Pro Glu Gln Tyr Val Gly Trp Tyr Ser Ser Trp
85 90 95

Thr Ala Asn Lys Ala Arg Leu Asn Ser Gln Gly Phe Gly Cys Ala Trp
100 105 110

Leu Ser Lys Tyr Gln Asp Ser Ser Gln Trp Leu Gln Ile Asp Leu Lys
115 120 125

Glu Ile Lys Val Ile Ser Gly Ile Leu Thr Gln Gly Cys Cys Asp Ile
130 135 140

Asp Glu Trp Val Thr Lys Tyr Ser Val Gln Tyr Arg Thr Asp Glu Arg
145 150 155 160

Leu Asn Trp Ile Tyr Tyr Lys Asp Gln Thr Gly Asn Asn Arg Val Phe
165 170 175

Tyr Gly Asn Ser Asp Arg Ser Ser Thr Val Gln Asn Leu Leu Arg Pro
            180   185   190

Pro Ile Ile Ser Arg Phe Ile Arg Leu Ile Pro Leu Gly Trp His Val
        195   200   205

Arg Ile Ala Ile Arg Met Glu Leu Leu Glu Cys Ala Ser Lys Cys Ala
    210   215   220

<210> 49
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 49

Pro Lys Lys Lys Arg Lys Val
1   5

<210> 50
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 50

Pro Lys Lys Lys Arg Arg Val
1   5

<210> 51
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 51

Lys Arg Pro Ala Ala Thr Lys Lys Ala Gly Gln Ala Lys Lys Lys Lys
1   5   10   15

<210> 52
<211> 22
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 52
guuuuagagc uaugcuguuu ug   22

<210> 53

<211> 68
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 53
guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc cguuaucaac uuggcaccga 60

gucggugc 68

<210> 54
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 54
gggccttatg catctccatc 20

<210> 55
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 55
taatcagcat attatccaga 20

<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 56
ccctttgta cgttttttaa 20

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 57
ctgtatcttc ttagccagta 20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 58
gttaacgcgt catttacatt 20

<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 59
tacaataaat tagccggatg 20

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 60
aaacttttag gagtcaaagt 20

<210> 61
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 61
aaaactttta ggagtcaaag 20

<210> 62
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 62
aatgttaaca gtgttggctt 20

<210> 63
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 63
gtggtggctg caggtgaggg 20

<210> 64
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 64
tactaaaatg ttaacagtgt 20

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 65
aaaaaaggac ttgacatgca 20

<210> 66
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 66
gtcccagctt ctcttgaggg 20

<210> 67
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 67
gttaacagtg ttggctttgg 20

<210> 68
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 68
gttggtggtc actgacagtg 20

<210> 69
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 69
gaaactagtg gctaccgtac 20

<210> 70
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 70
aaaaaacgta caaaaggggc 20

<210> 71
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 71
agccccaggc catcaaccgg 20

<210> 72
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72
ggcagccaga cagatgcttc 20

<210> 73
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73
ctggagaaca aaagcatttt 20

<210> 74
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 74
atcttagatt tatgcaatgt 20

<210> 75
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 75
acaagtagaa tcagaattct 20

<210> 76
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76
aatatcggct cactgcaacc 20

<210> 77
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 77
ccctcaagag aagctgggac 20

<210> 78
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 78
tcttaggaga tgacgaggtt 20

<210> 79
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79
aataataaag aactagagaa 20

<210> 80
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80
aaaaacgtac aaaaggggcc 20

<210> 81
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
ggctgagcag gcggagaagt 20

<210> 82
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82
agagaaagga gaacagtctg 20

<210> 83
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 83
cttctttctc tttcacgaga 20

<210> 84
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
aatcttagat ttatgcaatg 20

<210> 85
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
ctgagcaggc ggagaagtag 20

<210> 86
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86
acctagtgtt gacaaggctg 20

<210> 87
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
tcccagcttc tcttgagggt 20

<210> 88
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88
aataattctg ttgggacgac 20

<210> 89
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 89
cctataaaga ggacgtttcc 20

<210> 90
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 90
ccttctttct ctttcacgag 20

<210> 91
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 91
cccatcgaag tactcaccat 20

<210> 92
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 92
gtgtcatatg ttgctggtgg 20

<210> 93
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 93
aatgtaaatg acgcgttaac 20

<210> 94
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 94
gcctttgagc caagtggatt 20

<210> 95
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 95
gtcagactct gtgctggctg 20

<210> 96
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 96
ccgtcaatag cattccggtt 20

<210> 97
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 97
ccattaaaaa acgtacaaaa 20

<210> 98
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 98
gggatttggg gaggatgggg 20

<210> 99
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 99
actgtgtcat atgttgctgg 20

<210> 100
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 100
tacaatgttg tggaccgggc 20

<210> 101
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 101
gatagagtag caaacaaaac 20

<210> 102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 102
gctctcaaag gagactgaga 20

<210> 103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 103
ggaagagcaa ggagctcctg 20

<210> 104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 104
tgtgtcatat gttgctggtg 20

<210> 105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 105
ctgagaaggt gtacctagag 20

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 106
gtccgggagc cagttcctgc 20

<210> 107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 107
ttaggagatg acgaggttgg 20

<210> 108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 108
ggaggaagca gagctctcaa 20

<210> 109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 109
agtcatcagc ctgggaaaca 20

<210> 110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 110
tccgggagcc agttcctgca 20

<210> 111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 111
gagcaaggag ctcctgaggc 20

<210> 112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 112
tctggtacaa tgttgtggac 20

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 113
cctgggagtg tctgacaacc 20

<210> 114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 114
ccagttcctg cagggcctcg 20

<210> 115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 115
tagggaatgg gctgagcagg 20

<210> 116
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 116
agctttctgt ccctgtgaga 20

<210> 117
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117
tcgtctccct gccttctcac 20

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 118
cgaagtactc accatgggca 20

<210> 119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119
aggccactgg accatgccca 20

<210> 120
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120
ggcagggaga cgagtctaat 20

<210> 121
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 121
gggcttagat ttatgcaata 20

<210> 122
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 122
ttcagcgaag acaagggatt 20

<210> 123
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 123
catggcccac gaggccctgc 20

<210> 124
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 124
cagttcctgc agggcctcgt 20

<210> 125
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 125
cattaaaaaa cgtacaaaag 20

<210> 126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 126
aggcagggag acgagtctaa 20

<210> 127
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 127
ctaacatctg gatgaacctg 20

<210> 128
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 128
ccagtggcct gtcttctcct 20

<210> 129
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129
tattacaaat actgccgcta 20

<210> 130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 130
gcagggagac gagtctaatg 20

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 131
caatctgctt gagaaacagg 20

<210> 132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 132
ggcttagatt tatgcaatat 20

<210> 133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 133
acactcccag ggctcactct   20

<210> 134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 134
tatgggctca ttctgcccct   20

<210> 135
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135
cgaagacaag ggatttgggg   20

<210> 136
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136
agcacagagt ctgacattga   20

<210> 137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 137
gtcttaggag atgacgaggt   20

<210> 138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 138
gctgagcagg cggagaagta   20

<210> 139
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 139
ttccaatctg cttgagaaac 20

<210> 140
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 140
gagatcataa tacatctcag 20

<210> 141
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 141
gcccatcgaa gtactcacca 20

<210> 142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 142
caggcggaga agtaggggtg 20

<210> 143
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
ttgaaaccca gtcaccaatg 20

<210> 144
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 144
acataatcca actgagagtc 20

<210> 145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 145
gtgagtgtac tgagtctccg 20

<210> 146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 146
caatggagtc acacagcatg 20

<210> 147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 147
ggggtggggg gacgcatttg 20

<210> 148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 148
aactgagagt caggaaacct 20

<210> 149
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 149
tgctcacttc cataaggata 20

<210> 150
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 150
atttggggag gatggggagg 20

<210> 151
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 151
cgggctggcc acggcaagtg 20

<210> 152
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 152
ctcaatgtca gactctgtgc 20

<210> 153
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 153
tgcagactat taattgcaag 20

<210> 154
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 154
acaggcgtga gccacgggcc 20

<210> 155
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 155
catcaattgt gccaggcccg 20

<210> 156
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 156
cagcacagag tctgacattg 20

<210> 157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 157
gttgcagact attaattgca 20

<210> 158
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 158
gcaagtgtgg caacagggtc 20

<210> 159
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 159
tagggtcttg gagttttgat 20

<210> 160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 160
aaagcctcac atggcccacg 20

<210> 161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 161
cctcgaggtg agcgtgtgct 20

<210> 162
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 162
gcaggcggag aagtaggggt 20

<210> 163
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 163
catttttgtg gacagttgtg 20

<210> 164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 164
ttgcagacta ttaattgcaa 20

<210> 165
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 165
ctggttgtca gacactccca 20

<210> 166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 166
cagcgaagac aagggatttg 20

<210> 167
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
tcagcgaaga caagggattt 20

<210> 168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 168
tggatttgaa aataagaagt 20

<210> 169
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 169
aggtttaaaa atattgggtg 20

<210> 170
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 170
ttggcccagg gtggtggcag 20

<210> 171
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 171
acagaaaaag ctgtcaccaa 20

<210> 172
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 172
acaagggatt tggggaggat 20

<210> 173
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 173
ggcagcccca ggccatcaac 20

<210> 174
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 174
caggttccca gctgtacaat 20

<210> 175
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 175
aggcggagaa gtaggggtgg 20

<210> 176
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 176
agtgtggtgg ctgcaggtga 20

<210> 177
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 177
agcacattgg gcagacacaa 20

<210> 178
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 178
ccacgaggcc ctgcaggaac 20

<210> 179
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 179
cgtctccctg ccttctcaca 20

<210> 180
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 180
agatactaat cccatgtatg 20

<210> 181
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 181
ttaggctttg ccctcataca 20

<210> 182
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 182
ctactcgggg gaggctgaag 20

<210> 183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 183
acctcactgc ctcagcagcg 20

<210> 184
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 184
ttgaggaccc aggagaagac 20

<210> 185
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 185
cttaggagat gacgaggttg 20

<210> 186
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 186
ggcggagaag taggggtggg 20

<210> 187
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 187
ctggtacaat gttgtggacc 20

<210> 188
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 188
ggcaaagcat tctgggcaga 20

<210> 189
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 189
gaaaattacg gtgactgctg 20

<210> 190
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 190
ggaccaacct agtgttgaca 20

<210> 191
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 191
gcttttgttc tccagtttgt 20

<210> 192
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 192
tgatttaatc accaacaaac 20

<210> 193
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 193
atttagcaat gtttactggg 20

<210> 194
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 194
ggcattgaat ccaatatgtg 20

<210> 195
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 195
gtgttaccat cagagattgc 20

<210> 196
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 196
gtaggccatt cagtgcttac 20

<210> 197
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 197
tttgaaaata agaagttggc 20

<210> 198
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 198
cacctcgttc cgccggttga 20

<210> 199
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 199
acacgctcac ctcgagggct 20

<210> 200
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 200
gatatccagt aagcactgaa 20

<210> 201
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 201
tggatttagc aatgtttact 20

<210> 202
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 202
taaagaggac gtttcctggc 20

<210> 203
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 203
ttaatctgtc ttttgtcgta 20

<210> 204
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 204
ataggaaatg ccttactgtg 20

<210> 205
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 205
cttactggat atctgaacct 20

<210> 206
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 206
agtaaacatt gctaaatcca 20

<210> 207
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 207
gggttcttgc cttggggtat 20

<210> 208
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 208
gtgaggcttt gtggaacttg 20

<210> 209
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 209
acatcttact actaccacat 20

<210> 210
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 210
ccaccaacac cccttgcctt 20

<210> 211
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 211
tttttgggag accaaaggca 20

<210> 212
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 212
tttcatcctc cacgctgctg 20

<210> 213
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 213
tcagagccac atgaaactag 20

<210> 214
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 214
tccattaaaa aacgtacaaa 20

<210> 215
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 215
aaaaaaagga cttgacatgc 20

<210> 216
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 216
gctcctgagg ctggagctag 20

<210> 217
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 217
agaaggtgta cctagagtgg 20

<210> 218
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 218
ggtgccagca gatttgggtc 20

<210> 219
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 219
gatactaatc ccatgtatga 20

<210> 220
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 220
gaaatccgag agtgagccct 20

<210> 221
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 221
aaaacccctg caatctctga 20

<210> 222
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 222
taataatatt tatattattc 20

<210> 223
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 223
agaaaagaaa tgcaagaaat 20

<210> 224
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 224
tgaactgtgt catatgttgc 20

<210> 225
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 225
cagaaagctt tctgtatctc 20

<210> 226
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 226
agaagctggg actggctgtg 20

<210> 227
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 227
cttctcttga gggtggggat 20

<210> 228
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 228
gcccagaatg ctttgcccac 20

<210> 229
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 229
agcaggcgga gaagtagggg 20

<210> 230
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 230
tctcctctag ctccagcctc 20

<210> 231
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 231
ggttaaatga aagggaaagc 20

<210> 232
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 232
ctaaagcgcg cctttcctca 20

<210> 233
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 233
agaagatgct ggcttggccc 20

<210> 234
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 234
caggagctcc ttgctcttcc 20

<210> 235
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 235
ctgtgtcata tgttgctggt 20

<210> 236
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 236
tagcacattg ggcagacaca 20

<210> 237
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 237
gaagcatatc acttctgcta 20

<210> 238
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 238
gttgtggacc gggctggcca 20

<210> 239
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 239
tccagtggcc tgtcttctcc 20

<210> 240
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 240
aatttcctgc tgtgacaaca 20

<210> 241
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 241
caagggattt ggggaggatg 20

<210> 242
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 242
aggaagtagg gaacagggac 20

<210> 243
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 243
acctccatct ctataaaaat 20

<210> 244
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 244
ttacttctct ttggctatga 20

<210> 245
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 245
tcccactggc ccacgttgca 20

<210> 246
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 246
cagccatgtt gcttctcctt 20

<210> 247
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 247
tatttttctc cctgtttaga 20

<210> 248
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 248
gggcaaagca ttctgggcag 20

<210> 249
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 249
gaaggaggcg agacacctgt 20

<210> 250
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 250
atttcctgct gtgacaacaa 20

<210> 251
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 251
aagaaaagaa atgcaagaaa 20

<210> 252
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 252
gcttctcttg agggtgggga 20

<210> 253
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 253
attaatctgt cttttgtcgt 20

<210> 254
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 254
acaggaggaa cgcacgcagc 20

<210> 255
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 255
cctggttgtc agacactccc 20

<210> 256
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 256
aggtcaacat caattgtgcc 20

<210> 257
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 257
gacaagggat ttggggagga 20

<210> 258
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 258
ggcttagatc taaatactcc 20

<210> 259
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 259
gagcacacag cctcacagta 20

<210> 260
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 260
gttaccatca gagattgcag 20

<210> 261
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 261
ttggatttag caatgtttac 20

<210> 262
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 262
cttggagttt tgataggcac 20

<210> 263
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 263
atttaataaa agagaaacct 20

<210> 264
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 264
tttaataaaa gagaaacctt 20

<210> 265
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 265
attaaaaagc agggagaagg 20

<210> 266
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 266
gagttccaga agcatctgtc 20

<210> 267
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 267
gaagatgctg gcttggccca 20

<210> 268
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 268
gctagaggag agagagtctt 20

<210> 269
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 269
cgaaggaggc gagacacctg 20

<210> 270
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 270
gacaaacagc ctttgtcttc 20

<210> 271
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 271
tattggattc aatgccaata 20

<210> 272
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 272
tccccaccct caagagaagc 20

<210> 273
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 273
tcacagcaga gtggcccttt 20

<210> 274
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 274
gattgagagg gaattggaac 20

<210> 275
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 275
ttttgggaga ccaaaggcaa 20

<210> 276
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 276
cccagcttct cttgagggtg 20

<210> 277
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 277
gactgcactc acctcggaac 20

<210> 278
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 278
ggcaacaggg tccggttccg 20

<210> 279
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 279
tgacgaggtt gggggtgtcc 20

<210> 280
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 280
taggctttgc cctcatacat 20

<210> 281
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 281
tgaagcatat cacttctgct 20

<210> 282
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 282
aatcagaatt cttggtttca 20

<210> 283
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 283
gatgttctaa aaatccttat 20

<210> 284
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 284
agacaaatgc tttctgcggg 20

<210> 285
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 285
tgttaccatc agagattgca 20

<210> 286
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 286
cccgccaaag cgttttgcgc 20

<210> 287
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 287
cagttgtgtg gaaatatgat 20

<210> 288
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 288
acgatgtcca caaagaagac 20

<210> 289
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 289
ttaggcgaca ggcatattca 20

<210> 290
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 290
gctggtttaa agcactgatg 20

<210> 291
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 291
ccaggaaacg tcctctttat 20

<210> 292
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 292
tcagcccatt ccctataaag 20

<210> 293
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 293
agaaagcttt ctgtatctca 20

<210> 294
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 294
acttattaaa taagtatgga 20

<210> 295
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 295
attggattgc acccaggaat 20

<210> 296
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 296
tgctttcaga gccaattcct 20

<210> 297
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 297
ttctgcccct tggtccaaaa 20

<210> 298
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 298
caaatggtga gctgagggac 20

<210> 299
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 299
cctttagctt ccaccactct 20

<210> 300
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 300
aggtcaacct agtttaaata 20

<210> 301
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 301
ttggttgcct gtcttctttg 20

<210> 302
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 302
agaaatccga gagtgagccc 20

<210> 303
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 303
actgcaacct tccgcccgcc 20

<210> 304
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 304
atcgattgaa cccaggcggg 20

<210> 305
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 305
taggcgacag gcatattcat 20

<210> 306
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 306
ggcgtgttcc aggaagagca 20

<210> 307
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 307
caagcacacg ctcacctcga 20

<210> 308
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 308
tttattatta tatgcatcat 20

<210> 309
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 309
atctcagggt tcttgccttg 20

<210> 310
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 310
cttatttaat aagttttaca 20

<210> 311
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 311
ggcaaccaat ttctaacatc 20

<210> 312
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 312
agaagcagtg gagggtaaat 20

<210> 313
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 313
atcacagaag ccatctaaac 20

<210> 314
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 314
gctggcttgg cccagggtgg 20

<210> 315
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 315
tttagcaatg tttactgggt 20

<210> 316
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 316
ctgtttgttc agattcgtgt 20

<210> 317
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 317
actgagaaaa ctgcagaagc 20

<210> 318
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 318
taaattaatt aaaattggcc 20

<210> 319
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 319
tctccaggtg ccctgcaacg 20

<210> 320
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 320
ttcccactgg cccacgttgc 20

<210> 321
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 321
tcgcttagca tatgtggttg 20

<210> 322
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 322
gatgcttctg gaactcaagg 20

<210> 323
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 323
cagcatgtgc caagccctcg 20

<210> 324
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 324
tcacaacaac ttcggcctcc 20

<210> 325
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 325
atcatcgcag aaggttgcat 20

<210> 326
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 326
ggcctttaac agcacttgaa 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 327
cgaggcgggc aaaccacttg 20

<210> 328
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 328
tctgaagggc cctgtcagtt 20

<210> 329
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 329
agaaatatct cagcctctaa 20

<210> 330
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 330
gatgctggct tggcccaggg 20

<210> 331
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 331
ccacggcaag tgtggcaaca 20

<210> 332
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 332
ccaagcacac gctcacctcg 20

<210> 333
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 333
catcttcaca ccgcaatgtt 20

<210> 334
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 334
ttgtgtggaa atatgattgg 20

<210> 335
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 335
ctgcttagat tttcttgctg 20

<210> 336
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 336
ctccaggtgc cctgcaacgt 20

<210> 337
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 337
gatgcatccc attgtacagc 20

<210> 338
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 338
gaaggtttca gcgaagacaa 20

<210> 339
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 339
gtagtgccca caggatctgc 20

<210> 340
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 340
tcaggttccc agctgtacaa 20

<210> 341
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 341
tccaaaattg gattgcaccc 20

<210> 342
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 342
ctccctctgg tacaatgttg 20

<210> 343
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 343
cacctgtggg caaagcattc 20

<210> 344
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 344
aggaccatcc agggcaaatt 20

<210> 345
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 345
agtaacaaaa gtcatcagcc 20

<210> 346
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 346
ctgcaacctt ccgcccgcct 20

<210> 347
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 347
acagatgctt ctggaactca 20

<210> 348
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 348
gggcgggcgg aaggggaaga 20

<210> 349
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 349
ccctgttgcc acacttgccg 20

<210> 350
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 350
cgtttcctgg ccggacgcag 20

<210> 351
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 351
cagccttgtc aacactaggt 20

<210> 352
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 352
ggaccatcca gggcaaattg 20

<210> 353
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 353
gtaacaaaag tcatcagcct 20

<210> 354
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 354
atgcatccca ttgtacagct 20

<210> 355
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 355
tctcgctgtg ttgctcaggg 20

<210> 356
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 356
actggggaag tagtgcccac 20

<210> 357
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 357
gctgaagcag atacaccaca 20

<210> 358
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 358
actgacagca cccaacattg 20

<210> 359
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 359
ccatcttcac accgcaatgt 20

<210> 360
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 360
tacagtggac acaaaaaaag 20

<210> 361
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 361
gagtctcgct gtgttgctca 20

<210> 362
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 362
attactgacc acagtttcaa 20

<210> 363
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 363
atgtgctaga tgatccatag 20

<210> 364
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 364
tatccagatg gagatgcata 20

<210> 365
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 365
tctgaggtac catatcctta 20

<210> 366
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 366
caggaaacgt cctctttata 20

<210> 367
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 367
aattgccttc acttaggcgt 20

<210> 368
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 368
agagggagcc tttgaaactg 20

<210> 369
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 369
gcgtgtgctt ggcgtgttcc 20

<210> 370
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 370
ttgaaaataa gaagttggct 20

<210> 371
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 371
atctgcgggc agattacgcg 20

<210> 372
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 372
gtaagcactg aatggcctac 20

<210> 373
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 373
caggaccatc cagggcaaat 20

<210> 374
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 374
attctgcccc ttggtccaaa 20

<210> 375
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 375
atgcataagg cccatagaca 20

<210> 376
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 376
atgcatcttt cccatgtcta 20

<210> 377
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 377
tcctgggtgc aatccaattt 20

<210> 378
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 378
gcctttcctc atgggttgca 20

<210> 379
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 379
agagctgcca tttgcggggc 20

<210> 380
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 380
acaccccaat ttgccctgga 20

<210> 381
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 381
tttcgctgtg tctgtctacc 20

<210> 382
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 382
ttacaaaaat gatccgggcg 20

<210> 383
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 383
ctgctttcag agccaattcc 20

<210> 384
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 384
ccccaccctc aagagaagct 20

<210> 385
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 385
ggttgcccag gggctggggg 20

<210> 386
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 386
gtccacaaca ttgtaccaga 20

<210> 387
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 387
acctgtgggc aaagcattct 20

<210> 388
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 388
ttccaagtag ctcggatcac 20

<210> 389
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 389
cagtgtggtg gctgcaggtg 20

<210> 390
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 390
attttcccac attatgtata 20

<210> 391
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 391
gggatgagct cttaaaagaa 20

<210> 392
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 392
tagaatttaa tattccaaac 20

<210> 393
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 393
gaggtttcct gactctcagt 20

<210> 394
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 394
aatctaagca gactctttca 20

<210> 395
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 395
tttgggagac caaaggcaag 20

<210> 396
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 396
aatgtacctt gcaacccatg 20

<210> 397
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 397
agtgaaatat ttcgattatg 20

<210> 398
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 398
cagatgcttc tggaactcaa 20

<210> 399
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 399
agtagtgccc acaggatctg 20

<210> 400
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 400
ctcctgggcc cttgttccac 20

<210> 401
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 401
taataagttt tacatggcac 20

<210> 402
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 402
tctgctcaga atttctcctc 20

<210> 403
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 403
aggagggggc aaggagtaaa 20

<210> 404
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 404
tagagctgcc atttgcgggg 20

<210> 405
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 405
acagtttcaa aggctccctc 20

<210> 406
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 406
cggtagccac tagtttcatg 20

<210> 407
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 407
ccttacaccc caatttgccc 20

<210> 408
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 408
aagaaataca ataaattagc 20

<210> 409
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 409
ctaaacctga gtgtaaaaaa 20

<210> 410
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 410
ccagtcccag cttctcttga 20

<210> 411
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 411
agaaacggaa gtctgaggct 20

<210> 412
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 412
cccaggagaa gacaggccac 20

<210> 413
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 413
aagtcgatcc gtggttgccc 20

<210> 414
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 414
aagaaacgga agtctgaggc 20

<210> 415
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 415
gccacggcaa gtgtggcaac 20

<210> 416
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 416
atgacgaggt tgggggtgtc 20

<210> 417
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 417
aaagcctaat cacctcccaa 20

<210> 418
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 418
ggtctcccaa aaagaggatc 20

<210> 419
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 419
taggtttgat ggcctgcttc 20

<210> 420
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 420
cttggcgcta tactaggact 20

<210> 421
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 421
ggaaacgcta ccatcaaata 20

<210> 422
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 422
cctactgtgt gccctaccct 20

<210> 423
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 423
catccctctg gcccagggta 20

<210> 424
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 424
tggagcatcc ctctggccca 20

<210> 425
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 425
tgtagatgct ctgcttttga 20

<210> 426
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 426
gtagtcccag ctaccatggg 20

<210> 427
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 427
gcttggcgct atactaggac 20

<210> 428
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 428
aaaaaaacaa gtctgggaaa 20

<210> 429
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 429
tgcccctcc ctcctgaagc 20

<210> 430
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 430
ctaaaattac aaaaatgatc 20

<210> 431
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 431
tctctctgct cacttccata 20

<210> 432
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 432
tcctcttttt gggagaccaa 20

<210> 433
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 433
tcacagaagc catctaaaca 20

<210> 434
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 434
aatgtttact gggtgggtgg 20

<210> 435
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 435
gcgcacatgt ctcttagcct 20

<210> 436
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 436
tgctggttta aagcactgat 20

<210> 437
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 437
gcctttggtc tcccaaaaag 20

<210> 438
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 438
cagtgccaga tcctcttttt 20

<210> 439
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 439
cgggcagatt acgcgtggca 20

<210> 440
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 440
gagagtctta ggagatgacg 20

<210> 441
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 441
aaggggcaag ctagtgatac 20

<210> 442
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 442
gtggagtttg gccaggctgt 20

<210> 443
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 443
cccactcttc tccgacagcc 20

<210> 444
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 444
atatggcacc tggacacaca 20

<210> 445
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 445
gcatttgtct gtagacagcc 20

<210> 446
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 446
gttgcccagg ggctgggggga 20

<210> 447
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 447
agatgcttct ggaactcaag 20

<210> 448
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 448
gctggattct gactacactg 20

<210> 449
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 449
aaaaaaaaag tcattgttct 20

<210> 450
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 450
aggcctgggg gtggagcccg 20

<210> 451
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 451
attaatgtag caaagtggac 20

<210> 452
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 452
gccctgcaac gtgggccagt 20

<210> 453
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 453
ttctcttaca ccgcacatat 20

<210> 454
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 454
aaaaataggt ttaaaaatat 20

<210> 455
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 455
cacaacaact tcggcctcct   20

<210> 456
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 456
gcaaggtttt attgagtgga   20

<210> 457
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 457
tatctcaggg ttcttgcctt   20

<210> 458
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 458
atgtctggga aggccgggtg   20

<210> 459
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 459
tgcatctttc ccatgtctat   20

<210> 460
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 460
tgtgaaagtg ttactatttt   20

<210> 461
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 461
aagaaagaga atagatagta 20

<210> 462
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 462
ctagcctatg agctttatga 20

<210> 463
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 463
tccacgctgc tgaggcagtg 20

<210> 464
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 464
tttctatggc cagcttcagg 20

<210> 465
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 465
gggaaggaac gctctatggt 20

<210> 466
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 466
gggcagatta cgcgtggcag 20

<210> 467
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 467
cttgccatca taaagctcat 20

<210> 468
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 468
gagttttgat aggcacagga 20

<210> 469
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 469
gcaagaaatg ggtccaaaat 20

<210> 470
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 470
ggatgggaca gagcatctcc 20

<210> 471
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 471
gttccgccgg ttgatggcct 20

<210> 472
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 472
tttttacact caggtttagt 20

<210> 473
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 473
tgccctgcaa cgtgggccag 20

<210> 474
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 474
tgggccagtg ggaaggtttg 20

<210> 475
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 475
gacaaatgct ttctgcggga 20

<210> 476
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 476
cagattacgc gtggcagggg 20

<210> 477
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 477
gccctgcagg aactggctcc 20

<210> 478
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 478
tctttagcag gtagagtacc 20

<210> 479
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 479
cacctaccaa gcccgactcc 20

<210> 480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 480
ctcctggagt cgggcttggt 20

<210> 481
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 481
gatgcttttc tcctggagtc 20

<210> 482
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 482
actgaccttc ctaggtttga 20

<210> 483
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 483
gcaggccatc aaacctagga 20

<210> 484
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 484
ctcatccctg actatctgct 20

<210> 485
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 485
gtgggccagt gggaaggttt 20

<210> 486
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 486
agaatcgatt gaacccaggc 20

<210> 487
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 487
acgtcctctt tatagggaat 20

<210> 488
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 488
ctatttggca atttatacaa 20

<210> 489
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 489
caaaaatcag ctgggctttg 20

<210> 490
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 490
ggctgtgagg cagtttctga 20

<210> 491
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 491
cgtacaaaag gggccgggcg 20

<210> 492
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 492
cttcttattt tcaaatccaa 20

<210> 493
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 493
cgttccgccg gttgatggcc 20

<210> 494
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 494
actactacca cattggtgac 20

<210> 495
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 495
cacaaggggc ttgaggaccc 20

<210> 496
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 496
ttatagggaa tgggctgagc 20

<210> 497
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 497
ctttagcagg tagagtacct 20

<210> 498
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 498
cctagacact gccgtgggtt 20

<210> 499
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 499
gctgtggggc tccaaaccca 20

<210> 500
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 500
catagcgggt gagtaaccag 20

<210> 501
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 501
ctcttagcct aggaagattc 20

<210> 502
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 502
taaagaaatt gccttcactt 20

<210> 503
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 503
ttcatccaac gcctaagtga 20

<210> 504
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 504
tggctggatt ctgactacac 20

<210> 505
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 505
ctactaccac attggtgact 20

<210> 506
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 506
tacttcgatg ggctatgcag 20

<210> 507
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 507
tgtccaggtg ccatatttga 20

<210> 508
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 508
tgcataaggc ccatagacat 20

<210> 509
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 509
gcccaggggc tgggggaggg 20

<210> 510
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 510
accttgcaac ccatgaggaa 20

<210> 511
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 511
attacgcgtg gcaggggtgg 20

<210> 512
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 512
tgtgtgtgtt gggtgggagt 20

<210> 513
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 513
atcataatac atctcagagg 20

<210> 514
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 514
ctaccatcct atggccacca 20

<210> 515
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 515
aacctctttg gaaaactatt 20

<210> 516
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 516
ccccttgtga gcagagagtg 20

<210> 517
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 517
catgaacctt gagataagtg 20

<210> 518
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 518
cagaaaaact tcacactgct 20

<210> 519
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 519
ggcccatttc aggagagaaa 20

<210> 520
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 520
ttaaagcact gatggggtgc 20

<210> 521
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 521
gcatattctg gaaaactttt 20

<210> 522
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 522
ctggagcatc cctctggccc 20

<210> 523
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 523
ctccccctc ccccagcccc 20

<210> 524
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 524
tccccccctcc cccagcccct   20

<210> 525
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 525
tccgtggttg cccaggggct   20

<210> 526
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 526
atccgtggtt gcccaggggc   20

<210> 527
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 527
cgacaaaaga cagattaatg   20

<210> 528
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 528
aagattagac tgaccttcct   20

<210> 529
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 529
cttgctgagg aaagaggagg   20

<210> 530
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 530
gcagagagag aaggaacgac 20

<210> 531
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 531
ctctgctcac aaggggcttg 20

<210> 532
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 532
gacaaaagac agattaatga 20

<210> 533
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 533
aagtatgcaa tgaatgtcaa 20

<210> 534
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 534
ccccagcccc tgggcaacca 20

<210> 535
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 535
gtgttactat tttaggcgac 20

<210> 536
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 536
aaagcagagc atctacatcg 20

<210> 537
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 537
gggtcttact cttgtcgccc 20

<210> 538
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 538
taaaacttat taaataagta 20

<210> 539
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 539
atctgtgggc aagaaaaagg 20

<210> 540
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 540
gagtacctgg gagagagggt 20

<210> 541
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 541
cctcactctc tgctcacaag 20

<210> 542
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 542
agctgggaac ctgaagacaa 20

<210> 543
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 543
gcgggcagat tacgcgtggc 20

<210> 544
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 544
aacacaagga agtagggaac 20

<210> 545
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 545
ctcaccagac ccaaatctgc 20

<210> 546
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 546
gaagggagat gcttttctcc 20

<210> 547
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 547
aaatggagtt ttggtggtgt 20

<210> 548
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 548
tgaagcaggc catcaaacct 20

<210> 549
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 549
aggtttgatg gcctgcttca 20

<210> 550
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 550
cacctcttct tccctgaagc 20

<210> 551
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 551
acagtgccag atcctctttt 20

<210> 552
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 552
ctgttcatca agagatgcaa 20

<210> 553
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 553
ggctggggga ggggggagac 20

<210> 554
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 554
ataatctgtg ggcaagaaaa 20

<210> 555
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 555
ttattattat atgcatcata 20

<210> 556
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 556
taaacctatt tttatagaga 20

<210> 557
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 557
atctgctggc accttgatcg 20

<210> 558
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 558
ttgtttctat ggccagcttc 20

<210> 559
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 559
gaggtgagtg cagtcatccg 20

<210> 560
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 560
aaaagcagag catctacatc 20

<210> 561
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 561
caagctagtg atactggagg 20

<210> 562
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 562
aggatagagc tgccatttgc 20

<210> 563
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 563
agattacgcg tggcaggggt 20

<210> 564
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 564
aggtgagtgc agtcatccga 20

<210> 565
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 565
cctagagtgg tggaagctaa 20

<210> 566
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 566
cgatagacgc cggcagcccc 20

<210> 567
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 567
ccccgctgct caaacctctg 20

<210> 568
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 568
acttttcctc acttatctca 20

<210> 569
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 569
aatcagctgg gctttgtggc 20

<210> 570
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 570
gccagtccca gcttctcttg 20

<210> 571
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 571
agggggggaga cagggagaat 20

<210> 572
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 572
gtgtgtgtgt tgggtgggag 20

<210> 573
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 573
gggaggatca tgagagttgg 20

<210> 574
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 574
aagtgtcctt caaggggtca 20

<210> 575
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 575
taccatccta tggccaccag 20

<210> 576
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 576
cctaccatcc tatggccacc 20

<210> 577
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 577
ccagctacca tgggaggctg 20

<210> 578
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 578
ctgattcttc cgatacccca 20

<210> 579
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 579
cgtggttgcc caggggctgg 20

<210> 580
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 580
gaggatagag ctgccatttg 20

<210> 581
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 581
agtctgaggc tggggcaact 20

<210> 582
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 582
agatgctttt ctcctggagt 20

<210> 583
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 583
cccatggtga gtacttcgat 20

<210> 584
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 584
caacaattaa tgagaaagta 20

<210> 585
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 585
caatttgccc tggatggtcc 20

<210> 586
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 586
cgtaacatac ccagtaccac 20

<210> 587
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 587
tcttgctgag gaaagaggag 20

<210> 588
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 588
ggtccacaac attgtaccag 20

<210> 589
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 589
tcataataca tctcagaggt 20

<210> 590
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 590
agggatgagc tcttaaaaga 20

<210> 591
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 591
cccagggtag ggcacacagt 20

<210> 592
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 592
tacagacaaa tgctttctgc 20

<210> 593
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 593
taaagcgcgc ctttcctcat   20

<210> 594
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 594
agtggccctt ttggaccaag   20

<210> 595
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 595
cctcactgag aaggtgatgt   20

<210> 596
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 596
ggagaaaaca caaggaagta   20

<210> 597
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 597
aagctagtga tactggaggg   20

<210> 598
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 598
cgttgagagg agtgcgccgg   20

<210> 599
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 599
tctgggaaat ggagttttgg 20

<210> 600
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 600
ttgcccaggg gctgggggag 20

<210> 601
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 601
ggggcgaatg tttacagctg 20

<210> 602
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 602
tcaaaatgtc tgggaaggcc 20

<210> 603
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 603
tggcccattt caggagagaa 20

<210> 604
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 604
ttctcagtat ttggaaagac 20

<210> 605
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 605
gggtggggag gtcacagaac 20

<210> 606
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 606
ttctggacag ttcatttcaa 20

<210> 607
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 607
agaaagaagg aaattgcttc 20

<210> 608
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 608
gcaaggtggt ctaacctctt 20

<210> 609
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 609
ttccgccggt tgatggcctg 20

<210> 610
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 610
gcccatggtg agtacttcga 20

<210> 611
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 611
ggggcaaaca ttgtgtatga 20

<210> 612
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 612
taagtatatt tacagatttg 20

<210> 613
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 613
ccgtggttgc ccaggggctg 20

<210> 614
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 614
aatctgcccg cagatcctgt 20

<210> 615
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 615
acacaaggaa gtagggaaca 20

<210> 616
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 616
gccaggctgt cggagaagag 20

<210> 617
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 617
ttaatgtagc aaagtggaca 20

<210> 618
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 618
tgcaacgtgg gccagtggga 20

<210> 619
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 619
agctccccaa accttcccac 20

<210> 620
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 620
agagtggccc ttttggacca 20

<210> 621
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 621
actacattaa tgtagcaaag 20

<210> 622
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 622
tgactagtcc catgtggtat 20

<210> 623
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 623
gatgctatta ataattctgt 20

<210> 624
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 624
ctgcctcggg ctccaccccc 20

<210> 625
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 625
ggttgatggc ctggggctgc 20

<210> 626
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 626
tagtaagatg tggggccttt 20

<210> 627
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 627
caactcctga atagcacatt 20

<210> 628
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 628
cgttaatcca tatttaaact 20

<210> 629
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 629
gctgggggag gggggagaca 20

<210> 630
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 630
agaaggtttc agcgaagaca 20

<210> 631
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 631
gaaacggaag tctgaggctg 20

<210> 632
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 632
tctacgggaa gatatcctgt 20

<210> 633
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 633
gaaaaaaaaa aaaacaagtc 20

<210> 634
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 634
agaaaaactt cacactgcta 20

<210> 635
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 635
ttcttgctga ggaaagagga 20

<210> 636
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 636
caggaattgg ctctgaaagc 20

<210> 637
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 637
caaaagcaga gcatctacat 20

<210> 638
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 638
cccgctgctc aaacctctgg 20

<210> 639
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 639
cacacttgcc gtggccagcc 20

<210> 640
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 640
acctattttt atagagatgg 20

<210> 641
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 641
aggagggagg gggcaggagc 20

<210> 642
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 642
gtcgatccgt ggttgcccag 20

<210> 643
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 643
caagtggctg gacgtgcaga 20

<210> 644
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 644
ggatttctct tctttgtgat 20

<210> 645
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 645
gcaattaggg tctagttggc 20

<210> 646
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 646
gggggggagac agggagaatg 20

<210> 647
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 647
agagggtggg gcctcaaagc 20

<210> 648
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 648
ccatcccact gcctgctttg 20

<210> 649
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 649
aagcaggcag tgggatggag 20

<210> 650
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 650
ccccagaggt ttgagcagcg 20

<210> 651
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 651
cagggcatgc aagggaggtg 20

<210> 652
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 652
ttttgttcgt tatagaattt 20

<210> 653
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 653
aaatatgatt ggaggatcaa 20

<210> 654
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 654
ctgctggttt aaagcactga 20

<210> 655
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 655
gattttcttg ctgaggaaag 20

<210> 656
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 656
catttgtctg tagacagcct 20

<210> 657
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 657
atccgaggga gagaagatgc 20

<210> 658
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 658
ccaacattgc ggtgtgaaga 20

<210> 659
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 659
gtagtaagat gtggggcctt 20

<210> 660
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 660
tcaactcctg aatagcacat 20

<210> 661
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 661
agaaaataaa ttaaaaagca 20

<210> 662
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 662
ccaaaggcaa ggggtgttgg 20

<210> 663
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 663
ttgatgttga cctaactgac 20

<210> 664
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 664
ccttccgccc gccccgcaaa 20

<210> 665
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 665
gctgccattt gcggggcggg 20

<210> 666
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 666
ggatagagct gccatttgcg 20

<210> 667
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 667
agcgaggaac atcacacact 20

<210> 668
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 668
aatatgattg gaggatcaaa 20

<210> 669
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 669
attgaaccca ggcgggcgga 20

<210> 670
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 670
aagtctgagg ctggggcaac 20

<210> 671
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 671
gattacgcgt ggcaggggtg 20

<210> 672
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 672
taatctgccc gcagatcctg 20

<210> 673
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 673
atagatagta tggaaaatta 20

<210> 674
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 674
tggagaggag agaaagcccc 20

<210> 675
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 675
agaggagaga aagcccctgg 20

<210> 676
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 676
gggctatgca ggggctgcag 20

<210> 677
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 677
ccagggcaaa ttggggtgta 20

<210> 678
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 678
cgtgggccag tgggaaggtt 20

<210> 679
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 679
ttggtgatta aatcattgtg 20

<210> 680
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 680
tgtctcttgc tagctcaaag 20

<210> 681
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 681
gggcaagcta gtgatactgg 20

<210> 682
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 682
cttcaattag gaaaaaataa 20

<210> 683
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 683
tagaaaataa attaaaaagc 20

<210> 684
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 684
acctactgtg tgccctaccc 20

<210> 685
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 685
gagtggccct tttggaccaa   20

<210> 686
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 686
ataataaagt gtccttcaag   20

<210> 687
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 687
ctccaccgtc aatagcattc   20

<210> 688
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 688
atgttgctgg tgggggtgca   20

<210> 689
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 689
gtacttcgat gggctatgca   20

<210> 690
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 690
ccccagccat gcacaaagat   20

<210> 691
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 691
agtacctggg agagagggtg 20

<210> 692
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 692
gttttgatag gcacaggatg 20

<210> 693
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 693
tctgtaacac acgcctgctg 20

<210> 694
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 694
aatagcaaag tggttaaagg 20

<210> 695
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 695
tatcatcaga aaagaaagaa 20

<210> 696
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 696
gaatttaaat taattaaaat 20

<210> 697
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 697
catatattag cagaaactga 20

<210> 698
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 698
ggtggggagg tcacagaaca 20

<210> 699
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 699
acaaatgctt tctgcgggag 20

<210> 700
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 700
agggcctcgt gggccatgtg 20

<210> 701
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 701
cctgcgcaaa acgctttggc 20

<210> 702
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 702
ccgctccccc accccacgac 20

<210> 703
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 703
taagtaccat atacataatg 20

<210> 704
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 704
gtgtgttggg tgggagtggg 20

<210> 705
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 705
aagaaaaagg tggactgaaa 20

<210> 706
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 706
cgtttttaa tggatccatg 20

<210> 707
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 707
aatttgccct ggatggtcct 20

<210> 708
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 708
ggctggattc tgactacact 20

<210> 709
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 709
ctctcctgcg caaaacgctt 20

<210> 710
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 710
atctcggctc acaacaactt 20

<210> 711
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 711
ttttgatagg cacaggatgg 20

<210> 712
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 712
aaagtggaca gggcagggag 20

<210> 713
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 713
aagaggtgaa aggaattcga 20

<210> 714
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 714
agaccaaagg caaggggtgt 20

<210> 715
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 715
aaggttgcat tggacactgc 20

<210> 716
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 716
accacactgc tgtctctcct 20

<210> 717
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 717
aattaatatc gttgataaat 20

<210> 718
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 718
atgctattaa taattctgtt 20

<210> 719
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 719
agggcaccat ccagcctgtc 20

<210> 720
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 720
tcataggcta gtgtgtgtgt 20

<210> 721
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 721
gaagatggaa ggtcagtgtt 20

<210> 722
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 722
ctgggggtgg agcccgaggc 20

<210> 723
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 723
ttctgtccct gtgagaaggc 20

<210> 724
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 724
gtatgtcact gaagagagtc 20

<210> 725
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 725
agtcgatccg tggttgccca 20

<210> 726
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 726
cggcggaacg aggtggagtt 20

<210> 727
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 727
ttgtttagaa attattttat 20

<210> 728
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 728
gaggagaaat tctgagcaga 20

<210> 729
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 729
aaacattgtg tatgacggcg 20

<210> 730
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 730
tggagaaaac acaaggaagt 20

<210> 731
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 731
tgaagatgga aggtcagtgt 20

<210> 732
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 732
tttaaaaata ttgggtgtgg 20

<210> 733
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 733
tagaaggctc ctcacagaac 20

<210> 734
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 734
ggtgtaaccc aggaccatcc 20

<210> 735
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 735
tttcttgctg aggaaagagg 20

<210> 736
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 736
tctcttcttt gtgattggca 20

<210> 737
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 737
aatcgtctga ttgctggaga 20

<210> 738
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 738
cattgcggtg tgaagatgga 20

<210> 739
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 739
tgtcgtgggg tgggggagcg 20

<210> 740
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 740
gcaagctagt gatactggag 20

<210> 741
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 741
agttttgata ggcacaggat 20

<210> 742
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 742
tcaccatggg catggtccag 20

<210> 743
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 743
gggtacttga gaattgagag 20

<210> 744
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 744
tttcactatt tttcctttag 20

<210> 745
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 745
ggaacaggga ctggtccttt 20

<210> 746
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 746
tgtgttgggt gggagtgggt 20

<210> 747
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 747
acaagcggct agatgtcgag 20

<210> 748
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 748
gtgagtaacc agtggaacaa 20

<210> 749
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 749
ttcatccaga tgttagaaat 20

<210> 750
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 750
cgtctgattg ctggagaggg 20

<210> 751
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 751
gaggggggag acagggagaa 20

<210> 752
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 752
tcctgcgcaa aacgctttgg 20

<210> 753
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 753
agtttaccaa tctttgtgca 20

<210> 754
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 754
gcatccctct ggcccagggt 20

<210> 755
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 755
gtgttgggtg ggagtgggtg 20

<210> 756
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 756
gaggccccac cctctctccc 20

<210> 757
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 757
tctatcgtgc gctcttccgc 20

<210> 758
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 758
tcattaattg ttgcaactta 20

<210> 759
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 759
ccaatccaag agactaaact 20

<210> 760
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 760
gaacagggac tggtccttt 20

<210> 761
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 761
gagacaagtc tctctttagc 20

<210> 762
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 762
ggtgagtaac cagtggaaca 20

<210> 763
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 763
tgacccttc tctcctgaaa 20

<210> 764
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 764
tgagaaagta tggcatattc 20

<210> 765
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 765
atttgtctgt agacagcctg 20

<210> 766
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 766
aaggggagc ccagacaggc 20

<210> 767
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 767
ctgaggctgg ggcaactggg 20

<210> 768
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 768
gacggaggca agagacagtc 20

<210> 769
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 769
aagggctgtt tttgtttcta 20

<210> 770
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 770
gaacaacagt tgtctttgtg 20

<210> 771
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 771
aatccaacag aaaacaggat 20

<210> 772
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 772
ctgactcaat tataagacat 20

<210> 773
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 773
ccatgggaag gaacgctcta 20

<210> 774
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 774
cgcaggagag tggcggcatc 20

<210> 775
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 775
ggcaagctag tgatactgga 20

<210> 776
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 776
tttagtttgc cgtctgtagg 20

<210> 777
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 777
atggagtttt ggtggtgtag 20

<210> 778
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 778
tgtagcaaag tggacagggc 20

<210> 779
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 779
aaataatgat tatctttttt 20

<210> 780
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 780
gacccttttct ctcctgaaat 20

<210> 781
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 781
gtgaaagaaa cggaagtctg 20

<210> 782
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 782
gggtgggggt gtgaaagaaa 20

<210> 783
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 783
gcatcatagg ggtgtggaaa 20

<210> 784
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 784
atctgtgtaa aagagactcc 20

<210> 785
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 785
ggctatgcag gggctgcagt 20

<210> 786
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 786
aagtctggga aatggagttt 20

<210> 787
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 787
ggaattcgat ggcccatttc 20

<210> 788
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 788
ttatcttact tgcttaacgc 20

<210> 789
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 789
gctgtgaggc agtttctgaa 20

<210> 790
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 790
cggatgtctc atgtaacatg 20

<210> 791
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 791
gggcaccatc cagcctgtct 20

<210> 792
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 792
ttatatgcat cataggggtg 20

<210> 793
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 793
ctaccatcaa atatggcacc 20

<210> 794
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 794
ttattgtatt tcttgtagag 20

<210> 795
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 795
tgccccctag cagatagtca 20

<210> 796
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 796
tttctgcggg aggggagtct 20

<210> 797
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 797
tggcgggtcc ctgttgccag 20

<210> 798
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 798
tttgttcaaa atgtctggga 20

<210> 799
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 799
tggctggggg ctgctagtcc 20

<210> 800
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 800
ccagctcgat ttcaacactg 20

<210> 801
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 801
caaactccac ctcgttccgc 20

<210> 802
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 802
tctgtgtaaa agagactcca 20

<210> 803
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 803
gtgtaaccca ggaccatcca 20

<210> 804
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 804
taaattaaaa agcagggaga 20

<210> 805
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 805
gctcttaaaa gaagggacca 20

<210> 806
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 806
tgtgccctac cctgggccag 20

<210> 807
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 807
attataagac ataggaagcc 20

<210> 808
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 808
aatgaatttg agacgcctag 20

<210> 809
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 809
aaacacttgg agacagagcg 20

<210> 810
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 810
gtctgcccaa tgtgctattc 20

<210> 811
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 811
tcatccctga ctatctgcta 20

<210> 812
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 812
agataagaaa tagagaaaag 20

<210> 813
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 813
aagaagttgg ctgggtgcag 20

<210> 814
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 814
gcaaacattg tgtatgacgg 20

<210> 815
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 815
ggcccacgtt gcagggcacc 20

<210> 816
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 816
acctagagtc caaggaagag 20

<210> 817
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 817
gtctagaact acatgccaca 20

<210> 818
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 818
ttttctcctg gagtcgggct 20

<210> 819
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 819
attccttccc tccgggtata 20

<210> 820
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 820
caaacattgt gtatgacggc 20

<210> 821
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 821
ctttcataac caaatccact 20

<210> 822
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 822
tgtcacagca ggaaatttca 20

<210> 823
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 823
cctcagctca ccatttgctc 20

<210> 824
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 824
ggtgggagga tcatgagagt 20

<210> 825
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 825
ggactcagcc cctggcaaca 20

<210> 826
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 826
tggggcctca aagcaggcag 20

<210> 827
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 827
cgtggggtgg gggagcgggg 20

<210> 828
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 828
ttctatggcc agcttcagga 20

<210> 829
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 829
agtaagatat tttaatacga 20

<210> 830
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 830
actgaaaagg ccagagcaaa 20

<210> 831
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 831
ctggtggcca taggatggta 20

<210> 832
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 832
gagaaaagag gccaggtgca 20

<210> 833
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 833
tcttttagtt tgccgtctgt 20

<210> 834
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 834
tggtacttat actttgattg 20

<210> 835
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 835
ctttctgcgg gaggggagtc 20

<210> 836
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 836
taatgaattt gagacgccta 20

<210> 837
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 837
tcactgcctc agcagcgtgg 20

<210> 838
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 838
aaaaaaagtg gttgcagaac 20

<210> 839
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 839
tctgggaagg ccgggtgtgg 20

<210> 840
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 840
ccagccaaaa atagccagtg 20

<210> 841
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 841
ccacactggc tatttttggc 20

<210> 842
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 842
caattagggt ctagttggct 20

<210> 843
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 843
tgccagctcg atttcaacac 20

<210> 844
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 844
gagctagcaa gagacatcta 20

<210> 845
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 845
actttttttg tgtccactgt 20

<210> 846
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 846
ttaaatagca aagtggttaa 20

<210> 847
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 847
tgaggaaaga ggagggggca 20

<210> 848
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 848
ggggcctcaa agcaggcagt 20

<210> 849
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 849
atagcaaagt ggttaaagga 20

<210> 850
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 850
attgtatttc ttgtagagag 20

<210> 851
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 851
agggcttccc taagcccaaa 20

<210> 852
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 852
caggctgtcg gagaagagtg 20

<210> 853
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 853
ttcaaaatgt ctgggaaggc 20

<210> 854
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 854
tgatgttgac ctaactgaca 20

<210> 855
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 855
aatctaagat tggtgactgg 20

<210> 856
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 856
ccatttgcgg ggcgggcgga 20

<210> 857
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 857
agtacttcga tgggctatgc 20

<210> 858
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 858
ggttgttaga ctcagcactg 20

<210> 859
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 859
cctctcgtga aagagaaaga 20

<210> 860
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 860
aggtagagta cctgggagag 20

<210> 861
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 861
agctagcaag agacatctac 20

<210> 862
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 862
gacagcagtg tggtggctgc 20

<210> 863
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 863
tgagacaggc cgatcacttg 20

<210> 864
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 864
tgactacttt aagatgcttt 20

<210> 865
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 865
ttgccccta gcagatagtc 20

<210> 866
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 866
aacgtcctct ttatagggaa 20

<210> 867
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 867
ctcagtttcc ttgtgtgtcc 20

<210> 868
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 868
ttcctttcaa gtgctgttaa 20

<210> 869
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 869
caaaactcca agaccctagc 20

<210> 870
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 870
ccaggctgtc ggagaagagt 20

<210> 871
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 871
gggtggccct gaatcttcct 20

<210> 872
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 872
agcctcactc tctgctcaca 20

<210> 873
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 873
tatttccatt ttttacactc 20

<210> 874
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 874
tttttgttat tacttctctt 20

<210> 875
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 875
gatggctttc cagttctgtg 20

<210> 876
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 876
ttcttcgcat cgcgggggtg 20

<210> 877
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 877
acgatgttct ctgctcttcg 20

<210> 878
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 878
cttcatctgt ttccatggga 20

<210> 879
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 879
tcaacactgg ggtgtcccct 20

<210> 880
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 880
gggtctatgc tatgttaccc 20

<210> 881
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 881
agagtacctg ggagagaggg 20

<210> 882
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 882
aggagccttc taaagttcaa 20

<210> 883
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 883
gcttcaatta ggaaaaaata 20

<210> 884
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 884
ataaatctaa gattggtgac 20

<210> 885
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 885
actcaagggg gagcccagac 20

<210> 886
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 886
gtggaacttg aggatagacg 20

<210> 887
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 887
gtagcaaagt ggacagggca 20

<210> 888
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 888
aggagaaatt ctgagcagat 20

<210> 889
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 889
aataataaag tgtccttcaa 20

<210> 890
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 890
ttggcgggtc cctgttgcca 20

<210> 891
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 891
aacagttgtc tttgtgtgga 20

<210> 892
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 892
ctacagacaa atgctttctg 20

<210> 893
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 893
tgtaggcttg gcgctatact 20

<210> 894
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 894
ttgtggcaca gtgagggaac 20

<210> 895
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 895
cttaaagtag tcagagttac 20

<210> 896
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 896
cttgtagtcc cagctaccat 20

<210> 897
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 897
gagcgaggaa catcacacac 20

<210> 898
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 898
ctccagggag ctagtgaaac 20

<210> 899
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 899
ctcctgtttc tcaagcagat 20

<210> 900
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 900
ggcgcgcttt agatacacac 20

<210> 901
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 901
cataggctag tgtgtgtgtt 20

<210> 902
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 902
tagaactaca tgccacaggg 20

<210> 903
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 903
catctcaggg catgcaaggg 20

<210> 904
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 904
cggaatgcta ttgacggtgg 20

<210> 905
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 905
ttcgcatcgc gggggtgggg 20

<210> 906
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 906
atcagcaatt agggtctagt 20

<210> 907
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 907
atttgcgggg cgggcggaag 20

<210> 908
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 908
ggtggaagct aaaggaagat 20

<210> 909
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 909
acttcttcgc atcgcggggg 20

<210> 910
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 910
ctcctcatta cagtgaaata 20

<210> 911
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 911
ggagaaaagc atctcccttc 20

<210> 912
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 912
tggtgattaa atcattgtgt 20

<210> 913
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 913
ttttataatt gtgatgataa 20

<210> 914
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 914
atttaaattc caataccaca 20

<210> 915
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 915
tgattgtgtc ctctgtcccc   20

<210> 916
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 916
ataatgaatt tgagacgcct   20

<210> 917
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 917
tgagaaacat aaatcccgag   20

<210> 918
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 918
gtgccctacc ctgggccaga   20

<210> 919
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 919
tgaaatgaac tgtccagaac   20

<210> 920
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 920
ccatagagcg ttccttccca   20

<210> 921
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 921
atgtctcatg taacatgtgg 20

<210> 922
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 922
tattattata tgcatcatag 20

<210> 923
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 923
agagaaaaga ggccaggtgc 20

<210> 924
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 924
agcaatgttt actgggtggg 20

<210> 925
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 925
cagtgttggg aagagtccat 20

<210> 926
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 926
tgggacgaca ggtgtaaccc 20

<210> 927
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 927
ttcaaagatt gagagggaat 20

<210> 928
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 928
gggccagagg gatgctccag 20

<210> 929
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 929
catttgcggg gcgggcggaa 20

<210> 930
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 930
cactgctagg gttaaatgaa 20

<210> 931
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 931
aatacacata gaaaaatgac 20

<210> 932
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 932
agacccatcc tgttttctgt 20

<210> 933
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 933
ctatgctatg ttacccaggc 20

<210> 934
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 934
ttgctggtgg gggtgcaagg 20

<210> 935
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 935
cactggttac tcacccgcta 20

<210> 936
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 936
caccacactg ctgtctctcc 20

<210> 937
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 937
gggactagtc atgactacat 20

<210> 938
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 938
ttattagatt ccagtggtac 20

<210> 939
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 939
ctacttagaa atataccttg 20

<210> 940
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 940
tcgaacaata gactttcaat 20

<210> 941
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 941
gacagggaga atggggagcg 20

<210> 942
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 942
ccaacatcac cttctcagtg 20

<210> 943
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 943
cctcaaagca ggcagtggga 20

<210> 944
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 944
atcggggtat gtttacacaa 20

<210> 945
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 945
tttcgtacaa tactggaggc 20

<210> 946
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 946
ttcgccccta gacactgccg 20

<210> 947
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 947
tgccctgaga tggggacaag 20

<210> 948
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 948
gggagctagt gaaacaggaa 20

<210> 949
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 949
aatcttaaat catctaattg 20

<210> 950
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 950
aaatccaaca gaaaacagga 20

<210> 951
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 951
atgtaaacca gttgtctgtt 20

<210> 952
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 952
accaaatcca cttggctcaa 20

<210> 953
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 953
atcgaacaat agactttcaa 20

<210> 954
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 954
aggctagtgt gtgtgttggg 20

<210> 955
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 955
gggactcagc ccctggcaac 20

<210> 956
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 956
tttggcgggt ccctgttgcc 20

<210> 957
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 957
ttagctgagc gtggcagcgc 20

<210> 958
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 958
agtctagaac tacatgccac 20

<210> 959
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 959
tgtcgagagg agcacattgg 20

<210> 960
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 960
tgtggtagta gtaagatgtg 20

<210> 961
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 961
actgctaggg ttaaatgaaa   20

<210> 962
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 962
aaaaaatcct aacagacaac   20

<210> 963
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 963
tgtggcacag tgagggaact   20

<210> 964
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 964
taattaaaat tggccgggcg   20

<210> 965
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 965
ccaaaccgga atgctattga   20

<210> 966
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 966
tctatttctt atctcctgag   20

<210> 967
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 967
tctgtccctg tgagaaggca 20

<210> 968
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 968
ctcggcttca tctgtttcca 20

<210> 969
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 969
gagagttgga ggctgcagtg 20

<210> 970
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 970
taaaagagaa accttgggcc 20

<210> 971
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 971
tattccttcc ctccgggtat 20

<210> 972
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 972
ccaaggtata tttctaagta 20

<210> 973
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 973
caaaaatagc cagtgtggct 20

<210> 974
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 974
acagggagaa tggggagcga 20

<210> 975
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 975
aatattgggt gtggtggcac 20

<210> 976
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 976
ttcctgtttc actagctccc 20

<210> 977
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 977
aagtaccata tacataatgt 20

<210> 978
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 978
aaattatgaa tgattaaaaa 20

<210> 979
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 979
ttcgtacaat actggaggct 20

<210> 980
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 980
ataaaagaga aaccttgggc 20

<210> 981
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 981
tgtttttat tagattccag 20

<210> 982
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 982
cctacttaga aatatacctt 20

<210> 983
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 983
gcagagaaca tcgtctctcc 20

<210> 984
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 984
tgtcccctgg agcatccctc   20

<210> 985
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 985
ctctaaagat ttgccagttc   20

<210> 986
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 986
ttctcaagca gattggaagc   20

<210> 987
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 987
ggtagagtac ctgggagaga   20

<210> 988
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 988
ccagggatga agcaggaagc   20

<210> 989
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 989
ccaaacccac ggcagtgtct   20

<210> 990
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 990
caggagagac agcagtgtgg 20

<210> 991
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 991
gcctcactct ctgctcacaa 20

<210> 992
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 992
gaaaaatgac aggaaatgac 20

<210> 993
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 993
caagccacac tggctatttt 20

<210> 994
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 994
tcggatgact gcactcacct 20

<210> 995
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 995
agtaggttgc caagccacac 20

<210> 996
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 996
actctcttca gtgacataca 20

<210> 997
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 997
aaaagggcca ctctgctgtg 20

<210> 998
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 998
atgttggagc aaagattcga 20

<210> 999
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 999
caacatcacc ttctcagtga 20

<210> 1000
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1000
taataataaa gtgtccttca 20

<210> 1001
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1001
aaaaaagtgg ttgcagaaca 20

<210> 1002
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1002
aatggagttt tggtggtgta 20

<210> 1003
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1003
ttaaagtagt cagagttact 20

<210> 1004
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1004
ggtctaattt taaaatgctt 20

<210> 1005
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1005
taaatgagaa aagcataaca 20

<210> 1006
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1006
aattagggtc tagttggctg 20

<210> 1007
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1007
gggagcgagg gcttaatgtt 20

<210> 1008
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1008
tgtctttcgc ttagcatatg 20

<210> 1009
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1009
ttggagcaaa gattcgaagg 20

<210> 1010
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1010
ttaacacaat tagctgagcg 20

<210> 1011
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1011
ttgtacgaaa taaatttctg 20

<210> 1012
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1012
gaaagcaggc ctctcttcct 20

<210> 1013
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1013
catgagatgc atccaccctg 20

<210> 1014
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1014
tcagcactgt ggaagaaaca 20

<210> 1015
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1015
cttcttcgca tcgcgggggt 20

<210> 1016
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1016
aaccagtgga acaagggccc 20

<210> 1017
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1017
cttccctccg ggtatagggc 20

<210> 1018
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1018
atccctgact atctgctagg 20

<210> 1019
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1019
tcggcttcat ctgtttccat 20

<210> 1020
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1020
aggcaaagaa attctatgga 20

<210> 1021
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1021
cctggtggcc ataggatggt 20

<210> 1022
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1022
cagcgcgtgg tccctgcctc 20

<210> 1023
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1023
tgggggtgga gcccgaggca 20

<210> 1024
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1024
gagaaacctt gggccgggca 20

<210> 1025
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1025
ctgactactt taagatgctt 20

<210> 1026
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1026
gatggatggc gaagccactc 20

<210> 1027
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1027
gctttggtgg taaaaaatac 20

<210> 1028
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1028
cccaaggtat atttctaagt 20

<210> 1029
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1029
ggctagtgtg tgtgttgggt 20

<210> 1030
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1030
cctcagcctc ccatggtagc 20

<210> 1031
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1031
gcagcgcgtg gtccctgcct 20

<210> 1032
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1032
tattagattc cagtggtact 20

<210> 1033
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1033
gaaaacctag tttagtctct 20

<210> 1034
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1034
ctggagtcgg gcttggtagg 20

<210> 1035
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1035
attaattaaa attggccggg 20

<210> 1036
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1036
agattcattc attcattcct 20

<210> 1037
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1037
ttcacttagg cgttggatga 20

<210> 1038
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1038
tttgaggcaa agaaattcta 20

<210> 1039
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1039
gagacagtct ggcacatttg 20

<210> 1040
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1040
ctcagcctcc catggtagct 20

<210> 1041
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1041
ctcccttgca tgccctgaga 20

<210> 1042
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1042
ttaattaaaa ttggccgggc 20

<210> 1043
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1043
tagtcatgac tagtcccatg 20

<210> 1044
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1044
tagtcacatt tctcagtatt 20

<210> 1045
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1045
tgaggagaca ctgccactga 20

<210> 1046
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1046
ctgagcaaac ctagagtcca 20

<210> 1047
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1047
agcttcagga gggaggggc 20

<210> 1048
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1048
aacgtttcta tcatcgcaga 20

<210> 1049
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1049
tgtatgacgg cggggcgcgg 20

<210> 1050
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1050
tgggccagag ggatgctcca 20

<210> 1051
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1051
attagggtct agttggctgg 20

<210> 1052
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1052
agaaaaatga caggaaatga 20

<210> 1053
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1053
gtgtgatatt ccttccctcc   20

<210> 1054
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1054
ttgtgtatga cggcggggcg   20

<210> 1055
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1055
ccaatctttg tgcatggctg   20

<210> 1056
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1056
tgcaaaggaa atcagcaatt   20

<210> 1057
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1057
agaaagcccc tggtggccat   20

<210> 1058
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1058
gctattaaaa aggatgaggt   20

<210> 1059
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1059
tatggccagc ttcaggaggg 20

<210> 1060
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1060
ttatcagtca ttttttgtat 20

<210> 1061
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1061
ccataggatg gtagggattt 20

<210> 1062
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1062
ccactgaagg acagaagcag 20

<210> 1063
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1063
agggtttcct cacagcagag 20

<210> 1064
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1064
gccagctcga tttcaacact 20

<210> 1065
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1065
aagttccaca aagcctcaca 20

<210> 1066
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1066
attatcagtc atttttgta 20

<210> 1067
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1067
ctatctccat gacccttga 20

<210> 1068
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1068
gactacttta agatgctttg 20

<210> 1069
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1069
gactggtcct tttgggctta 20

<210> 1070
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1070
atgtggtagt agtaagatgt 20

<210> 1071
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1071
tacatggcct ttgagccaag 20

<210> 1072
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1072
catcaaccgg cggaacgagg 20

<210> 1073
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1073
ggactggtcc ttttgggctt 20

<210> 1074
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1074
tggtgtatct gcttcagcat 20

<210> 1075
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1075
aaatattggg tgtggtggca 20

<210> 1076
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1076
gaaacataaa tcccgagagg   20

<210> 1077
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1077
ctacctcctg cccacctctc   20

<210> 1078
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1078
agatgtcgag aggagcacat   20

<210> 1079
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1079
ctctgtaaca cacgcctgct   20

<210> 1080
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1080
ctgggccaga gggatgctcc   20

<210> 1081
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1081
aaaataggtt taaaaatatt   20

<210> 1082
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1082
aaaccttggg ccgggcatgg 20

<210> 1083
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1083
cagagcaaat ggtgagctga 20

<210> 1084
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1084
accttcattg ctacttgaga 20

<210> 1085
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1085
ctagtttagt ctcttggatt 20

<210> 1086
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1086
agtctggcac atttgtggct 20

<210> 1087
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1087
acatatgagc atttccagtt 20

<210> 1088
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1088
ccctacttag aaatatacct 20

<210> 1089
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1089
atatggtacc tcagaacccc 20

<210> 1090
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1090
gaaaccttg ttgtcacagc 20

<210> 1091
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1091
tggtggaagc taaaggaaga 20

<210> 1092
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1092
catatgagca tttccagttt 20

<210> 1093
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1093
tcgcccctag acactgccgt 20

<210> 1094
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1094
catccctgac tatctgctag 20

<210> 1095
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1095
gcaaaggaaa tcagcaatta 20

<210> 1096
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1096
ccagagcaaa tggtgagctg 20

<210> 1097
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1097
tttgttttgt tcaaaatgtc 20

<210> 1098
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1098
gtgtcctgcc ctatacccgg 20

<210> 1099
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1099
gtagacagcc tggggttctg 20

<210> 1100
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1100
taattttatg cttttcttct 20

<210> 1101
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1101
ccccagtgtt gaaatcgagc 20

<210> 1102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1102
tggggtttgc agaatgacct 20

<210> 1103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1103
cctaaatccc taccatccta 20

<210> 1104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1104
caaacccacg gcagtgtcta 20

<210> 1105
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1105
cagtggaagt gttaagtggc 20

<210> 1106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1106
gtgatgataa aggctttgtg 20

<210> 1107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1107
tatgggtttc tataatctgt 20

<210> 1108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1108
actgctgtgg agaaaacaca 20

<210> 1109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1109
ccccatctca gggcatgcaa 20

<210> 1110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1110
aatgtggtag tagtaagatg 20

<210> 1111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1111
tattatttca aagattgaga 20

<210> 1112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1112
atattatttc aaagattgag 20

<210> 1113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1113
aaacccacgg cagtgtctag 20

<210> 1114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1114
agggatgctc caggggacag 20

<210> 1115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1115
cagaggtggg actcagcccc 20

<210> 1116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1116
agcaacatat gacacagttc 20

<210> 1117
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1117
agtgaggctt ccatttcaga 20

<210> 1118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1118
ttcagggaag aagaggtgaa 20

<210> 1119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1119
tttcaggaga gaaagggtca 20

<210> 1120
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1120
tccccatctc agggcatgca 20

<210> 1121
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1121
agcccctggt ggccatagga 20

<210> 1122
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1122
gaatcgtctg attgctggag 20

<210> 1123
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1123
aagacatagg aagccaggtg 20

<210> 1124
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1124
gcctctcttc cttggactct 20

<210> 1125
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1125
ggagcgaggg cttaatgttt 20

<210> 1126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1126
acattgcata aatctaagat 20

<210> 1127
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1127
gggagcccag acaggctgga 20

<210> 1128
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1128
aaacataaat cccgagaggt 20

<210> 1129
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1129
tctacctcct gcccacctct 20

<210> 1130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1130
ggccatcaac cggcggaacg 20

<210> 1131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1131
aggcgttgag aggagtgcgc 20

<210> 1132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1132
tgtcctgccc tatacccgga 20

<210> 1133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1133
atgctttggt aaacatttct 20

<210> 1134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1134
gtgggccatg tgaggctttg 20

<210> 1135
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1135
ggcgggataa tcacttgagc 20

<210> 1136
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1136
ctggtgacaa tataattcca 20

<210> 1137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1137
ggccagcttc aggagggagg 20

<210> 1138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1138
taggactggg ccttctgaaa 20

<210> 1139
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1139
tcccttgcat gccctgagat 20

<210> 1140
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1140
gtccccttgt ccccatctca 20

<210> 1141
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1141
tgtgtgatat tccttccctc 20

<210> 1142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1142
ctgccctata cccggaggga 20

<210> 1143
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1143
cttaaaatcc aacagaaaac 20

<210> 1144
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1144
acataggaag ccaggtgcgg 20

<210> 1145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1145
gtggcagtgg aagtgttaag 20

<210> 1146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1146
cccttgcatg ccctgagatg 20

<210> 1147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1147
ggtccccttg tccccatctc 20

<210> 1148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1148
ataaatcccg agaggtgggc 20

<210> 1149
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1149
tatgagcatt tccagtttgg 20

<210> 1150
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1150
tatttgtaat acccccaaac 20

<210> 1151
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1151
gcccaggaga gacagcagtg 20

<210> 1152
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1152
tcacttttta aatagcaaag 20

<210> 1153
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1153
tctgtgctct gcaaatgacc 20

<210> 1154
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1154
aggtcattct gcaaacccca 20

<210> 1155
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1155
taggtttgtc tataatgtac 20

<210> 1156
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1156
accttctcaa gtagcaatga 20

<210> 1157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1157
gtatgggttt ctataatctg 20

<210> 1158
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1158
taccaatctt tgtgcatggc 20

<210> 1159
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1159
gacgtgcaga aggcgttgag 20

<210> 1160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1160
ctcacttatc tcaaggttca 20

<210> 1161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1161
ttcaggagag aaagggtcaa 20

<210> 1162
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1162
taggacttct tcgcatcgcg 20

<210> 1163
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1163
ctgctcttcg tggacatttc 20

<210> 1164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1164
agaaatagag aaaagaggcc 20

<210> 1165
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1165
actggttact cacccgctat 20

<210> 1166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1166
aggacttctt cgcatcgcgg 20

<210> 1167
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1167
caacacgaat ctgaacaaac 20

<210> 1168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1168
agaagtgata tgcttcaatt 20

<210> 1169
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1169
gataatcact tgagctgggg 20

<210> 1170
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1170
atatgagcat ttccagtttg 20

<210> 1171
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1171
cgggataatc acttgagctg 20

<210> 1172
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1172
cgggagaatc gtctgattgc 20

<210> 1173
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1173
tcaccaaagg agaagcaaca 20

<210> 1174
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1174
ggggaggagg atgatctgtt 20

<210> 1175
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1175
cgttggatga aggttcattt 20

<210> 1176
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1176
aggtcaattc tgcccatagc 20

<210> 1177
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1177
atggccagct tcaggaggga 20

<210> 1178
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1178
aaatttattt cgtacaatac 20

<210> 1179
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1179
gaagagcgca cgatagacgc 20

<210> 1180
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1180
ccactgcttc tgtccttcag 20

<210> 1181
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1181
caaagaaatt ctatggacgg 20

<210> 1182
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1182
aaggatgagg tcgggtgcag 20

<210> 1183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1183
gatcaaaggg tatgatctaa 20

<210> 1184
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1184
ttttgtgtcc actgtaggct 20

<210> 1185
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1185
agggaaggaa tatcacacag 20

<210> 1186
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1186
ctaggacttc ttcgcatcgc 20

<210> 1187
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1187
accaatcttt gtgcatggct 20

<210> 1188
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1188
ttggcgacaa catattgtaa 20

<210> 1189
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1189
tggccagctt caggagggag 20

<210> 1190
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1190
gggaggagga tgatctgttt 20

<210> 1191
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1191
tagggaagcc ctcactgaga 20

<210> 1192
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1192
aaggtcaatt ctgcccatag 20

<210> 1193
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1193
atctaattgt ggcacagtga 20

<210> 1194
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1194
tactggaggg gggcagcgcg 20

<210> 1195
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1195
catctaattg tggcacagtg 20

<210> 1196
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1196
gctctgaagc acttgaaatg 20

<210> 1197
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1197
ctatgtctta taattgagtc 20

<210> 1198
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1198
tttatttcgt acaatactgg 20

<210> 1199
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1199
aatcccgaga ggtgggcagg 20

<210> 1200
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1200
gtatagcgcc aagcctacag 20

<210> 1201
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1201
aaccggaatg ctattgacgg 20

<210> 1202
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1202
ttgttttgtt caaaatgtct 20

<210> 1203
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1203
tctaggactt cttcgcatcg 20

<210> 1204
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1204
cctagtttag tctcttggat 20

<210> 1205
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1205
tttaaattcc aataccacat 20

<210> 1206
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1206
agcatccttt gaactttaga 20

<210> 1207
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1207
gcgggataat cacttgagct 20

<210> 1208
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1208
actctgtaac acacgcctgc 20

<210> 1209
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1209
aagcgttttg cgcaggagag 20

<210> 1210
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1210
agagctttgg ccgaggacga 20

<210> 1211
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1211
agagacagaa agtcgatccg 20

<210> 1212
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1212
ctattaaaaa ggatgaggtc 20

<210> 1213
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1213
tgaaggacag aagcagtgga 20

<210> 1214
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1214
ctgaaggaca gaagcagtgg 20

<210> 1215
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1215
taccttattt cactgtaatg 20

<210> 1216
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1216
aattagacct gcccagttag 20

<210> 1217
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1217
ctgatatcca ctaactgggc 20

<210> 1218
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1218
attgctgata tccactaact 20

<210> 1219
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1219
caggctgtca ggaggcatga 20

<210> 1220
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1220
aaatatctta cttcattact 20

<210> 1221
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1221
ttttctggta tgatactatt 20

<210> 1222
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1222
ctggtatgat actattaggt 20

<210> 1223
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1223
atctcttgat gaacagctac 20

<210> 1224
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1224
gatgaacagc tacaggcctg 20

<210> 1225
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1225
acagctacag gcctgaggtt 20

<210> 1226
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1226
ctacatgaac tcctaacctc 20

<210> 1227
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1227
gtccttcagc ctcaacttat 20

<210> 1228
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1228
cacctataag ttgaggctga 20

<210> 1229
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1229
acacagtcac ctataagttg 20

<210> 1230
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1230
tcgttaactc cgcagagcac 20

<210> 1231
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1231
cgttaactcc gcagagcaca 20

<210> 1232
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1232
ggatggtgcc ctgtgctctg 20

<210> 1233
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1233
ctatccccag cacctaaagc 20

<210> 1234
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1234
tatccccagc acctaaagct 20

<210> 1235
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1235
ggtagggatt taggaaaaag 20

<210> 1236
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1236
agggatttag gaaaaagagg 20

<210> 1237
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1237
tttaggaaaa agaggaggct 20

<210> 1238
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1238
aggaaaaaga ggaggcttgg 20

<210> 1239
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1239
gatcatctag cacatgtttt 20

<210> 1240
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1240
ctagcacatg tttttggttt 20

<210> 1241
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1241
tatctggtgg gtagctactt 20

<210> 1242
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1242
ggtgggtagc tacttaggag 20

<210> 1243
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1243
cctgcttcct gcttcatccc 20

<210> 1244
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1244
gaaggtgcca gggatgaagc 20

<210> 1245
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1245
ttgcccttc cgccatggga 20

<210> 1246
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1246
cttgcccctt ccgccatggg 20

<210> 1247
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1247
tagcttgccc cttccgccat 20

<210> 1248
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1248
ctagcttgcc ccttccgcca 20

<210> 1249
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1249
actaacattc acatcatagc 20

<210> 1250
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1250
ctaacattca catcatagca 20

<210> 1251
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1251
tcacatcata gcagggactc 20

<210> 1252
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1252
catcatagca gggactctgg 20

<210> 1253
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1253
gggagcgcca tctttgtagc 20

<210> 1254
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1254
tcaagtagca atgaaggtta 20

<210> 1255
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1255
ctcaagtagc aatgaaggtt 20

<210> 1256
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1256
ggaagacctg tgcatttttg 20

<210> 1257
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1257
aactgtccac aaaaatgcac 20

<210> 1258
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1258
atttattttt agcagagaca 20

<210> 1259
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1259
ggttggtgca agagtaactg 20

<210> 1260
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1260
atatcggctc actgcaaccc 20

<210> 1261
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1261
agccagcatc ttctctccct 20

<210> 1262
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1262
cacctgtgat ccgagctact 20

<210> 1263
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1263
tactcggggg aggctgaagc 20

<210> 1264
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1264
gaacgaggtg gagtttggcc 20

<210> 1265
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1265
gcatcactgc acctcagtct 20

<210> 1266
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1266
tgggttttgc catattgctc 20

<210> 1267
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1267
ctacttagga gtggaattgc 20

<210> 1268
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1268
ttcagcctcc cccgagtagc 20

<210> 1269
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1269
cacttccact gccaccaccc 20

<210> 1270
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1270
tgcatcactg cacctcagtc 20

<210> 1271
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1271
tccacagcct tgtcaacact 20

<210> 1272
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1272
ctctgggggga gcatacagac 20

<210> 1273
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1273
tcccccagag gtttgagcag 20

<210> 1274
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1274
agggagagaa gatgctggct 20

<210> 1275
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1275
tcttagccta ggaagattca 20

<210> 1276
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1276
gtatctcagg gttcttgcct 20

<210> 1277
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1277
ctcaagtggt ttgcccgcct 20

<210> 1278
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1278
caaaaccagc ctgagcaata 20

<210> 1279
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1279
tgaggcgggt ctatcacctg 20

<210> 1280
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1280
tgcccagggg ctgggggagg 20

<210> 1281
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1281
cagccatgag ccactgcgtc 20

<210> 1282
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1282
taagatgtgg ggcctttggg 20

<210> 1283
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1283
caaaaagtat ctgggcatga 20

<210> 1284
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1284
ttaaattaat taaaattggc 20

<210> 1285
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1285
tggaagtgag cagagagaga 20

<210> 1286
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1286
ccgtctgtat gctcccccag 20

<210> 1287
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1287
cagcatttgg gcacgaaggc 20

<210> 1288
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1288
catgccctga gatggggaca 20

<210> 1289
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1289
acttccactg ccaccaccct 20

<210> 1290
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1290
tttacagctg aggccccagc 20

<210> 1291
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1291
atgccctgag atggggacaa 20

<210> 1292
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1292
ttgaatgaat gaatgctttg 20

<210> 1293
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1293
aatgcagcat ttgggcacga 20

<210> 1294
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1294
taaaattaca aaaatgatcc 20

<210> 1295
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1295
ggaaggagct ctcagcagat 20

<210> 1296
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1296
aagtatctgg gcatgatggc 20

<210> 1297
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1297
tgccccgctg ctcaaacctc 20

<210> 1298
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1298
tgcagctatt aaaaaggatg 20

<210> 1299
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1299
acgccactgt actcccagcc 20

<210> 1300
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1300
tattgtattt cttgtagaga 20

<210> 1301
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1301
tgagtctcgc tcagtcaccc 20

<210> 1302
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1302
ttggcggaag aagacacaag 20

<210> 1303
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1303
ccgagctact tggaagactg 20

<210> 1304
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1304
aaggagctct cagcagatag 20

<210> 1305
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1305
tgaagcactt gaaatgtggc 20

<210> 1306
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1306
gaaggagctc tcagcagata 20

<210> 1307
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1307
ggagggaagg aatatcacac 20

<210> 1308
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1308
gagggaagga atatcacaca 20

<210> 1309
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1309
tggccggacg cagtggctca 20

<210> 1310
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1310
cgggtctatc acctgaggtc 20

<210> 1311
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1311
tggctgtaat tctaacactt 20

<210> 1312
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1312
ggctgtaatt ctaacacttt 20

<210> 1313
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1313
ggcttgagcc ctggagttca 20

<210> 1314
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1314
cctctggggg agcatacaga 20

<210> 1315
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1315
gggggagcat acagacgggc 20

<210> 1316
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1316
agggtctcgc catgctgccc 20

<210> 1317
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1317
atgagccact gcgtccggcc 20

<210> 1318
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1318
gaggagaatc gattgaaccc 20

<210> 1319
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1319
caaggcagga gtatcacctg 20

<210> 1320
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1320
acaaaagggg ccgggcgcgg 20

<210> 1321
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1321
aaaaaggatg agttcatgta 20

<210> 1322
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1322
ctgtcgtggg gtgggggagc 20

<210> 1323
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1323
cgccactgta ctcccagcct 20

<210> 1324
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1324
tgcccaggct gggagtacag 20

<210> 1325
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1325
caaaaataca aaaagtatct 20

<210> 1326
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1326
acaaaaatac aaaaagtatc 20

<210> 1327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1327
cgggcaaacc acttgaggtc 20

<210> 1328
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1328
ttgtatcttt agtagagcca 20

<210> 1329
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1329
aataaattag ccggatgtgg 20

<210> 1330
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1330
gagacagggt ttcagcatgc 20

<210> 1331
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1331
cccccagagg tttgagcagc 20

<210> 1332
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1332
aaaaaaggat gagttcatgt 20

<210> 1333
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1333
agcaccactg cactccagtg 20

<210> 1334
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1334
caggtgtcct gccctatacc 20

<210> 1335
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1335
gcttgtagtc ccagctacca 20

<210> 1336
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1336
gatgagttca tgtagggaca 20

<210> 1337
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1337
ccatgggagg ctgaggtgag 20

<210> 1338
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1338
tatttatttt tagcagagac 20

<210> 1339
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1339
tttgtatctt tagtagagcc 20

<210> 1340
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1340
agacggggtt tcaccaggtt 20

<210> 1341
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1341
gggcttgcag aatgagtgca 20

<210> 1342
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1342
ggcctgcttc agggaagaag 20

<210> 1343
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1343
agggtttcag catgctggcc 20

<210> 1344
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1344
tgagaccagc ctgcccaacc 20

<210> 1345
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1345
caggcatgag ctaccccgcc 20

<210> 1346
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1346
aaaaaaaaaa aaacaagtct 20

<210> 1347
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1347
ataaaatacc ataaactagg 20

<210> 1348
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1348
gccggtaatc ccagttactc 20

<210> 1349
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1349
tgttaatttt tttgtagaga 20

<210> 1350
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1350
ctcaaacttc tgagctcaag 20

<210> 1351
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1351
atactatgca gctattaaaa 20

<210> 1352
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1352
agaaaagagg ccaggtgcag 20

<210> 1353
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1353
gttaattttt ttgtagagac 20

<210> 1354
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1354
cttcaggagg ccaaggccag 20

<210> 1355
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1355
caaaaatgat ccgggcgtgg 20

<210> 1356
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1356
gcacaggatg ggggcgtggt 20

<210> 1357
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1357
ggtctggaac tctcgacctc 20

<210> 1358
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1358
tgccaaatag ttttccaaag 20

<210> 1359
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1359
cctgtcacat gagggtcttc 20

<210> 1360
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1360
cctctaatcc cagctactcg 20

<210> 1361
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1361
ggctgggaag tccacgatca 20

<210> 1362
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1362
cctgaagacc ctcatgtgac 20

<210> 1363
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1363
cggaagaaga cacaagtggc 20

<210> 1364
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1364
gcaggacacc tgtcacatga 20

<210> 1365
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1365
tgtcacatga gggtcttcag 20

<210> 1366
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1366
cagcagatag gggagccaga 20

<210> 1367
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1367
gggttttcac catgtttccc 20

<210> 1368
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1368
ccccgagtag ctgggattag 20

<210> 1369
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1369
cacttgagct ggggaggcgg 20

<210> 1370
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1370
atcaaggtgc cagcagattt 20

<210> 1371
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1371
ctgtcacatg agggtcttca 20

<210> 1372
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1372
gtccgtgggc acaggcctgg 20

<210> 1373
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1373
ggcaggacac ctgtcacatg 20

<210> 1374
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1374
agcagatagg ggagccagaa 20

<210> 1375
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1375
cgcttgtgtg tctgcctgct   20

<210> 1376
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1376
ccggcatgcg ccaccatgcc   20

<210> 1377
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1377
ccagaccagc ctggccaagg   20

<210> 1378
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1378
cgtgggcaca ggcctggggg   20

<210> 1379
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1379
agaaaactgc agaagcagga   20

<210> 1380
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1380
ctctaatccc agctactcgg   20

<210> 1381
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1381
ggatgggggc gtggtgggcc 20

<210> 1382
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1382
ctcaggtgat actcctgcct 20

<210> 1383
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1383
ccaccttggc caggctggtc 20

<210> 1384
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1384
gtcttgggaa atgcagcatt 20

<210> 1385
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1385
ccaggcatgg tggcgcatgc 20

<210> 1386
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1386
cggaagaatc agatcacacg 20

<210> 1387
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1387
ggggtttcac caggttgggc 20

<210> 1388
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1388
tcactgatgg acgtttgggt 20

<210> 1389
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1389
aacgtccatc agtgatagac 20

<210> 1390
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1390
tctatcactg atggacgttt 20

<210> 1391
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1391
gatgggggcg tggtgggcca 20

<210> 1392
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1392
gcgaggaaca tcacacactg 20

<210> 1393
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1393
aatcacttga gctggggagg 20

<210> 1394
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1394
caggagtatc acctgaggtc 20

<210> 1395
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1395
gtggggtggg ggagcgggga 20

<210> 1396
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1396
tttcaccagg ttgggcaggc 20

<210> 1397
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1397
tcttgggaaa tgcagcattt 20

<210> 1398
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1398
gttccagacc agcctggcca 20

<210> 1399
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1399
tctcgccatg ctgcccaggc 20

<210> 1400
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1400
tttcagcatg ctggccaggc 20

<210> 1401
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1401
gggggcgtgg tgggccaggg 20

<210> 1402
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1402
gtctatcact gatggacgtt 20

<210> 1403
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1403
taacacaagc cgcctacaga 20

<210> 1404
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1404
aatagctgca tagtattcca 20

<210> 1405
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1405
tcctgcctca ggctcccgag 20

<210> 1406
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1406
ctagcaggca gacacacaag 20

<210> 1407
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1407
gccactcggg agcctgaggc 20

<210> 1408
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1408
aggtccgtgg gcacaggcct 20

<210> 1409
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1409
gcctcaggct cccgagtggc 20

<210> 1410
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1410
cccagccact cgggagcctg 20

<210> 1411
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1411
tgtagagacg gggtttcacc 20

<210> 1412
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1412
actgccactg tactccagcc 20

<210> 1413
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1413
tctcaaactt ctgagctcaa 20

<210> 1414
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1414
gtctcaaact tctgagctca 20

<210> 1415
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1415
cctcaggctc ccgagtggct 20

<210> 1416
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1416
aggcctgtgc ccacggacct 20

<210> 1417
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1417
acctgtaatc ccagccacct 20

<210> 1418
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1418
agagtctcgc tgtgttgctc 20

<210> 1419
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1419
taggtccgtg ggcacaggcc 20

<210> 1420
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1420
caccccagg cctgtgccca 20

<210> 1421
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1421
tcagcctccc ccgagtagct 20

<210> 1422
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1422
ggcacaggat gggggcgtgg 20

<210> 1423
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1423
gcttgtgtgt ctgcctgcta 20

<210> 1424
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1424
cctctcacct cagcctccca 20

<210> 1425
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1425
ataataaaat accataaact 20

<210> 1426
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1426
cacctgtaat cccagccacc 20

<210> 1427
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1427
cgtctgtaat cccagccact 20

<210> 1428
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1428
aggagaatca cttgaaaccc 20

<210> 1429
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1429
taatcccagc tactcggggg 20

<210> 1430
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1430
gggattacag ccaccatgcc 20

<210> 1431
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1431
ctggaactcc tgacctcaag 20

<210> 1432
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1432
tacttaggag tggaattgct 20

<210> 1433
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1433
ggtccgtggg cacaggcctg 20

<210> 1434
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1434
gagccaccat gcccggccca 20

<210> 1435
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1435
cttactcttg tcgcccaggc 20

<210> 1436
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1436
cctgtcgtgg ggtgggggag 20

<210> 1437
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1437
aggaggtcga ggctgcagtg 20

<210> 1438
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1438
ggaagaatca gatcacacgt 20

<210> 1439
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1439
atacagacgg gcaggctgtg 20

<210> 1440
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1440
gagtggaatt gctgggtcat 20

<210> 1441
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1441
gcctgtcatc ccagctacta 20

<210> 1442
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1442
tttataagcc acctagttta 20

<210> 1443
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1443
gcatacagac gggcaggctg 20

<210> 1444
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1444
tggtgggcca gggtggtctt   20

<210> 1445
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1445
tcactctgtc acccagactg   20

<210> 1446
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1446
catacagacg ggcaggctgt   20

<210> 1447
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1447
aactgaacaa tgaaaacact   20

<210> 1448
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1448
cttactctgt tgcccaggct   20

<210> 1449
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1449
ggttttgaac tcctgacctt   20

<210> 1450
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1450
gtggtgggcc agggtggtct 20

<210> 1451
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1451
caggtgtgca ccaccatggc 20

<210> 1452
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1452
tccctagtag ctgggatgac 20

<210> 1453
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1453
ttttgccata ttgctcaggc 20

<210> 1454
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1454
acttggaaga ctgaggtggg 20

<210> 1455
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1455
ctcagcactt tgggagggcg 20

<210> 1456
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1456
gtgtctgcct gctagggtct 20

<210> 1457
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1457
tgtcatccca gctactaggg 20

<210> 1458
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1458
tgtgcccacg gacctaggtg 20

<210> 1459
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1459
gctacttgga agactgaggt 20

<210> 1460
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1460
gccccgctgc tcaaacctct 20

<210> 1461
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1461
tctaacactt tgggaggctg 20

<210> 1462
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1462
tcacctaggt ccgtgggcac 20

<210> 1463
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1463
tcccaggtgg ctgggattac 20

<210> 1464
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1464
agctacttgg aagactgagg 20

<210> 1465
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1465
caggccgatc acttgaggtc 20

<210> 1466
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1466
cagacgtgtg ccaccacgcc 20

<210> 1467
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1467
gtctcaaatt cctgggctca 20

<210> 1468
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1468
actacaggtg tgcaccacca 20

<210> 1469
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1469
gagacagggt ttcaccacct 20

<210> 1470
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1470
tgtaatccca gccacctggg 20

<210> 1471
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1471
gactgtaatc ccagcacttc 20

<210> 1472
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1472
ctcaagcaat cctctggcct 20

<210> 1473
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1473
tctcaaattc ctgggctcaa 20

<210> 1474
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1474
agggtttcac caccttggcc 20

<210> 1475
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1475
caggcgtgag cccctgcacc 20

<210> 1476
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1476
ttgctcaggg tggagtgcag 20

<210> 1477
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1477
ataggcacag gatgggggcg 20

<210> 1478
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1478
cactgcagcc ttgaactcca 20

<210> 1479
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1479
gctactaggg aggctgaggg 20

<210> 1480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1480
caggcacgca ccaccacatc 20

<210> 1481
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1481
gccacctggg aggctgaggc 20

<210> 1482
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1482
gaagactgct tgagcccagg 20

<210> 1483
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1483
tcctgcctca gcctcccagg 20

<210> 1484
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1484
taaataaata aaaattagcc 20

<210> 1485
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1485
ttaatttttt tgtagagacg 20

<210> 1486
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1486
gcctcagcct cccaggtggc 20

<210> 1487
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1487
ccctcagcct ccctagtagc 20

<210> 1488
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1488
aaaaaaaaaa aaaaagacat 20

<210> 1489
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1489
aaaaaaaaag ccaggcacag 20

<210> 1490
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1490
cctgtcctca cctaggtccg 20

<210> 1491
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1491
aacccgggag atggaggttg 20

<210> 1492
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1492
gtctgtaatc ccagccactc 20

<210> 1493
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1493
gggtttcaac atatgaattt 20

<210> 1494
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1494
ctgtcctcac ctaggtccgt 20

<210> 1495
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1495
ccacggacct aggtgaggac 20

<210> 1496
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1496
tcttgctctg tcacccacac 20

<210> 1497
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1497
tcttaagtag ctgggactac 20

<210> 1498
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1498
tcaccacaac ctccatctcc 20

<210> 1499
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1499
ccagctacta gggaggctga 20

<210> 1500
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1500
aggagtgcct gtcctcacct 20

<210> 1501
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1501
caccacaacc tccatctccc 20

<210> 1502
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1502
gttactcagg aagctgaggc 20

<210> 1503
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1503
tgtagtccca gctacttaag 20

<210> 1504
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1504
ccagaggatt gcttgagccc 20

<210> 1505
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1505
ggcttgagcc tgggaggttg 20

<210> 1506
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1506
gatcaaggtg ccagcagatt 20

<210> 1507
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1507
cctcagcctc ccaggtggct 20

<210> 1508
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1508
gggaggctga ggtgagagga 20

<210> 1509
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1509
cccagccacc tgggaggctg 20

<210> 1510
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1510
acaggtgcag cacaccaaca 20

<210> 1511
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1511
gcaccactgc actccagtgt 20

<210> 1512
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1512
gcctcagctt cctgagtaac 20

<210> 1513
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1513
tgagaggatg gcttgagccc 20

<210> 1514
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1514
tgtaattcta acactttggg 20

<210> 1515
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1515
cctgggctca agcaatcctc 20

<210> 1516
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1516
gagccagggt ttcaccatgt 20

<210> 1517
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1517
gagaatcgat tgaacccagg 20

<210> 1518
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1518
ggtttcaaca tatgaatttt 20

<210> 1519
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1519
ggagtgcagt ggtgcaatat 20

<210> 1520
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1520
atacaaaaat tagccggcca 20

<210> 1521
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1521
cccagttact caggaagctg 20

<210> 1522
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1522
caaaaattag ccggccatgg 20

<210> 1523
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1523
aaataaaaat tagccaggtg 20

<210> 1524
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1524
caggtgcata ccaccacacc 20

<210> 1525
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1525
gcactttggg aagctgagac 20

<210> 1526
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1526
cctcagcttc ctgagtaact 20

<210> 1527
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1527
ctttgggagg gcgaggtggg 20

<210> 1528
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1528
gctacttaag aggctgaggc 20

<210> 1529
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1529
tgggaagact gcttgagccc 20

<210> 1530
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1530
gtttcaacat atgaattttg 20

<210> 1531
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1531
gcctcagcct cttaagtagc 20

<210> 1532
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1532
caaggcaggt ggatcaccta 20

<210> 1533
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1533
ttcaacatat gaattttggg 20

<210> 1534
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1534
ctgccactgt actccagcct 20

<210> 1535
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1535
ttgtgttttt tgtagagaca 20

<210> 1536
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1536
tttcaccacc ttggccaggc   20

<210> 1537
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1537
tctcgctcag tcacccaggc   20

<210> 1538
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1538
tgcatttccc aagaccaccc   20

<210> 1539
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1539
tctttctttc ttttttgaga   20

<210> 1540
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1540
cctcagtctt ccaagtagct   20

<210> 1541
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1541
ctttgggagg acaaggcagg   20

<210> 1542
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1542
gagtgcaagg ttttattgag 20

<210> 1543
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1543
gtaatctcag cactttggga 20

<210> 1544
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1544
caaacattag ccaggcatgg 20

<210> 1545
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1545
tgagaccagc ctgggcagca 20

<210> 1546
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1546
atacaaacat tagccaggca 20

<210> 1547
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1547
tattattatt attttgagac 20

<210> 1548
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1548
cccagctact taagaggctg 20

<210> 1549
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1549
tcacccacac tggagtgcag 20

<210> 1550
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1550
gcactttggg agggcgaggt 20

<210> 1551
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1551
gagacagggt tttgctatgt 20

<210> 1552
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1552
cctcagcctc ttaagtagct 20

<210> 1553
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1553
agggttttgc tatgttggcc 20

<210> 1554
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1554
tttgtgtttt ttgtagagac 20

<210> 1555
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1555
tttcaacata tgaattttgg 20

<210> 1556
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1556
ggggcctttg ggaggtgatt 20

<210> 1557
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1557
agtggaattg ctgggtcata 20

<210> 1558
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1558
cactgtagcc tcaacctccc 20

<210> 1559
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1559
caaaaaacac aaaaattagc 20

<210> 1560
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1560
ggagtacaat ggcgcgatct 20

<210> 1561
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1561
ttttttttt ctttgagac 20

<210> 1562
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1562
tggccaacat ggtgaaaccc 20

<210> 1563
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1563
cgcttgaacc cggaaggcag 20

<210> 1564
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1564
gagacggggt ttcaccaggt 20

<210> 1565
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1565
tggggcctgt cgtggggtgg 20

<210> 1566
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1566
tctcagcttc ccaaagtgct 20

<210> 1567
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1567
ctggggcctg tcgtggggtg 20

<210> 1568
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1568
cgtttgaacc tgggaggcgg 20

<210> 1569
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1569
cactggggcc tgtcgtgggg 20

<210> 1570
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1570
aactcctgac ctcaagtgat 20

<210> 1571
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1571
caggctggtc ttgagctcct 20

<210> 1572
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1572
cgcgccattg tactccagcc 20

<210> 1573
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1573
cgcttgaacc cgggagatgg 20

<210> 1574
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1574
agagtcttac tctgtcgccc 20

<210> 1575
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1575
aagaggctga ggcaggagaa 20

<210> 1576
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1576
aaaaaacaca aaaattagct 20

<210> 1577
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1577
actggggcct gtcgtggggt 20

<210> 1578
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1578
gcactttggg aggacaaggc 20

<210> 1579
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1579
gccttggcct cctgaagtgc 20

<210> 1580
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1580
gccttgtcct cccaaagtgc 20

<210> 1581
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1581
agcactttgg gagggcgagg 20

<210> 1582
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1582
acacactggg gcctgtcgtg 20

<210> 1583
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1583
tggctgtaat cccagctact 20

<210> 1584
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1584
caggagaatc acttgaaacc 20

<210> 1585
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1585
tgcctgtcat cccagctact 20

<210> 1586
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1586
cacacactgg ggcctgtcgt 20

<210> 1587
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1587
caggtggatc acctaaggtc 20

<210> 1588
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1588
tgttgttgtt gtttttgaga 20

<210> 1589
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1589
tgcctctaat cccagctact 20

<210> 1590
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1590
ggagtgcagt ggagcgatct 20

<210> 1591
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1591
cccagcactt caggaggcca 20

<210> 1592
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1592
ggctgtaatc ccagctactc 20

<210> 1593
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1593
tgcttgagcc caggaggtcg 20

<210> 1594
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1594
tttgtatttt tgtagagacg 20

<210> 1595
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1595
ggagtcttac tctgttgccc 20

<210> 1596
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1596
ccttggcctc ctgaagtgct 20

<210> 1597
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1597
caggagctca agaccagcct 20

<210> 1598
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1598
ccaggctggt cttgagctcc 20

<210> 1599
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1599
ccaggagctc aagaccagcc 20

<210> 1600
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1600
gaatttcact cttgttgccc 20

<210> 1601
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1601
cgatagtttg ctcagaatga 20

<210> 1602
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1602
cccagcactt tgggaggaca 20

<210> 1603
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1603
attctgagca aactatcgca 20

<210> 1604
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1604
ctaaagatac aaaaattagc 20

<210> 1605
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1605
ccttgtcctc ccaaagtgct 20

<210> 1606
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1606
cgctccactg cactccagcc 20

<210> 1607
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1607
gcgccattgt actccagcct 20

<210> 1608
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1608
atctcaaaaa aaaaaaaaaa 20

<210> 1609
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1609
gagcggggag ggatagcatt 20

<210> 1610
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1610
tcaagcgatt ctcctgcctc 20

<210> 1611
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1611
ttaatccagt ctatcactga 20

<210> 1612
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1612
gagaatcgct tgaacccgga 20

<210> 1613
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1613
gcctctaatc ccagctactc 20

<210> 1614
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1614
ttgtaatttt agtagagacg 20

<210> 1615
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1615
aatcgcttga acccgggaga 20

<210> 1616
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1616
ttttgctatg ttggccaggc 20

<210> 1617
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1617
taaaaataca aacattagcc 20

<210> 1618
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1618
tcacacactg gggcctgtcg 20

<210> 1619
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1619
ccatgttggt caggctggtc 20

<210> 1620
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1620
ccagaccagc ctgaccaaca 20

<210> 1621
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1621
tgactgtaat cccagcactt 20

<210> 1622
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1622
caggctggtc tcaaattcct 20

<210> 1623
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1623
tgggaggatc ccttgagccc 20

<210> 1624
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1624
tgcaccactg cactccagtc 20

<210> 1625
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1625
tcttactctg tcgcccaggc 20

<210> 1626
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1626
tctcactctg ttgcccagac 20

<210> 1627
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1627
aactgcttga acccaggagg 20

<210> 1628
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1628
acacaaaaat tagctgggca 20

<210> 1629
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1629
ggattacagg cgtgagccac 20

<210> 1630
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1630
gccgaggtgg gcggatcatg 20

<210> 1631
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1631
cagaagtttg agaccagcct 20

<210> 1632
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1632
gaggtctcac tatgttgccc 20

<210> 1633
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1633
ttttgtattt ttgtagagac 20

<210> 1634
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1634
tcgggagttc gagaccagcc 20

<210> 1635
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1635
tgcctgtaac cccagcactt 20

<210> 1636
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1636
tttgtaattt tagtagagac 20

<210> 1637
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1637
gctccactgc actccagcct 20

<210> 1638
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1638
gcaggcagat cacctgaggt 20

<210> 1639
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1639
tcctgagtaa ctgggattac 20

<210> 1640
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1640
cttggcctcc caaagtgctg 20

<210> 1641
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1641
caggtgtgtg ccaccacacc 20

<210> 1642
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1642
ccaggctggt ctcaaattcc 20

<210> 1643
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1643
ccaggaattt gagaccagcc 20

<210> 1644
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1644
tttttgtatt tttgtagaga 20

<210> 1645
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1645
tgtaatccca gcacttcagg 20

<210> 1646
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1646
gagaactgct tgaacccagg 20

<210> 1647
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1647
caggaatttg agaccagcct 20

<210> 1648
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1648
tcagaagttt gagaccagcc 20

<210> 1649
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1649
gactgtaatc ccagcacttt 20

<210> 1650
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1650
gcaccactgc actccagtct 20

<210> 1651
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1651
taaaaattag ccaggtgtgg 20

<210> 1652
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1652
ttttgtaatt ttagtagaga 20

<210> 1653
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1653
taaaaataca aaaatcagct 20

<210> 1654
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1654
gcctcggtct cccaaagtgc 20

<210> 1655
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1655
gcactttggg agaccgaggc 20

<210> 1656
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1656
agcactttgg gagaccgagg 20

<210> 1657
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1657
acctcatgat ccgcccacct 20

<210> 1658
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1658
cactgcaacc tctgccttcc 20

<210> 1659
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1659
tcttactctg ttgcccaggc 20

<210> 1660
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1660
cactgcagcc tcgacctcct 20

<210> 1661
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1661
aaaaaaaaaa aaaaaaagcc 20

<210> 1662
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1662
ggggtttctc catgttggcc 20

<210> 1663
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1663
caggagaact gcttgaaccc 20

<210> 1664
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1664
ggtgggcgga tcatgaggtc 20

<210> 1665
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1665
ttgcccaggc tggagtacaa 20

<210> 1666
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1666
tcactgcagc ctcgacctcc 20

<210> 1667
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1667
tcactgcaac ctctgccttc 20

<210> 1668
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1668
gggattacag gcgtgagcca 20

<210> 1669
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1669
gcctgtagtc ccagctacta 20

<210> 1670
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1670
ctaaaaatac aaaaatcagc 20

<210> 1671
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1671
caggcgcccg ccaccacacc 20

<210> 1672
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1672
cccagcactt tgggagaccg 20

<210> 1673
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1673
ttgcccagac tggagtgcag 20

<210> 1674
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1674
caaaaaaaaa aaaaaaaaaa   20

<210> 1675
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1675
acactttggg aggctgaggt   20

<210> 1676
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1676
cctcggtctc ccaaagtgct   20

<210> 1677
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1677
tcactgcagc cttgaactcc   20

<210> 1678
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1678
aaaaaaaaaa aaaaaaaaga   20

<210> 1679
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1679
gcctgtaacc ccagcacttt   20

<210> 1680
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1680
attattatac tttaagttct 20

<210> 1681
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1681
ttgtattttt agtagagact 20

<210> 1682
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1682
tcgcccaggc tggagtacag 20

<210> 1683
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1683
cgaggcaggc agatcacctg 20

<210> 1684
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1684
cgaggcaggc agatcacctg 20

<210> 1685
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1685
tccctagtag ctgggactac 20

<210> 1686
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1686
tttctccatg ttggccaggc 20

<210> 1687
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1687
aatacaaaat tagccaggca 20

<210> 1688
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1688
tgtagtccca gctactaggg 20

<210> 1689
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1689
ggagtgcaat ggcgcaatct 20

<210> 1690
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1690
acaaaattag ccaggcatgg 20

<210> 1691
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1691
aatggtgtga acccgggagg 20

<210> 1692
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1692
ttctcctgcc tcagcctccc 20

<210> 1693
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1693
tcaggagttc cagaccagcc 20

<210> 1694
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1694
tcccaaagtg ctggggttac 20

<210> 1695
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1695
tgtaacccca gcactttggg 20

<210> 1696
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1696
aaaaaaaaaa aaaaaaaaag 20

<210> 1697
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1697
tacaaaaaat tagccgggtg 20

<210> 1698
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1698
caggtgtgag ccaccacacc 20

<210> 1699
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1699
aacactttgg gaggctgagg 20

<210> 1700
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1700
ggtctcgaac tcccgacctc 20

<210> 1701
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1701
tacaaaaaat tagccaggtg 20

<210> 1702
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1702
caggcatgag ccaccgcacc 20

<210> 1703
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1703
tgcgccattg cactccagcc 20

<210> 1704
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1704
ttattatact ttaagttcta 20

<210> 1705
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1705
gagaatggtg tgaacccggg 20

<210> 1706
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1706
aattagccgg gtgtggtggc 20

<210> 1707
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1707
caccgcatgt tctcactcat 20

<210> 1708
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1708
caaggcaggt ggatcacctg 20

<210> 1709
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1709
cgcatgttct cactcatagg 20

<210> 1710
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1710
aaattagccg ggtgtggtgg 20

<210> 1711
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1711
cgcctgtaat ctcagcactt 20

<210> 1712
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1712
ctcaggtgat ctgcctgcct 20

<210> 1713
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1713
ctcaggtgat ctgcctgcct 20

<210> 1714
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1714
gctactaggg aggctgaggc 20

<210> 1715
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1715
tgcttgaacc caggaggcgg 20

<210> 1716
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1716
gcctcagcct ccctagtagc 20

<210> 1717
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1717
gagacggggt ttctccatgt 20

<210> 1718
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1718
gagtgagaac atgcggtgtt 20

<210> 1719
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1719
ggtacatgtg cacaacgtgc 20

<210> 1720
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1720
aaaaaattag ccgggtgtgg 20

<210> 1721
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1721
cctagcactt tgggaggccg 20

<210> 1722
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1722
caggcgtgag ccactgtgcc 20

<210> 1723
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1723
cccagctact agggaggctg 20

<210> 1724
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1724
cccagctact agggaggctg 20

<210> 1725
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1725
cgcctgtaat cctagcactt 20

<210> 1726
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1726
tgtagggaca tggatgaagc 20

<210> 1727
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1727
cctcagcctc cctagtagct 20

<210> 1728
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1728
cctcagcctc cctagtagct 20

<210> 1729
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1729
tgcctgtaat cctagcactt 20

<210> 1730
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1730
caggcagatc acctgaggtc 20

<210> 1731
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1731
caggcagatc acctgaggtc 20

<210> 1732
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1732
gcatgttctc actcataggt 20

<210> 1733
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1733
cacctatgag tgagaacatg 20

<210> 1734
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1734
gcaggagaat ggtgtgaacc 20

<210> 1735
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1735
caggcatgag ccaccatgcc 20

<210> 1736
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1736
caggagaatg gtgtgaaccc 20

<210> 1737
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1737
catgccattg cactccagcc 20

<210> 1738
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1738
tctcactatg ttgcccaggc 20

<210> 1739
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1739
atgccattgc actccagcct 20

<210> 1740
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1740
aaaaaattag ccaggtgtgg 20

<210> 1741
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1741
tatgtataca tgtgccatgt 20

<210> 1742
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1742
ggggtttcac tgtgttagcc 20

<210> 1743
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1743
gagtttcact cttgttgccc 20

<210> 1744
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1744
ctcaggtgat ccacctgcct 20

<210> 1745
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1745
ttcactcttg ttgcccaggc 20

<210> 1746
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1746
ttcactcttg ttgcccaggc 20

<210> 1747
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1747
gcctgtaatc tcagcacttt 20

<210> 1748
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1748
gcgccattgc actccagcct 20

<210> 1749
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1749
ggggtttcac catgttggtc 20

<210> 1750
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1750
acctcagcct cctgagtagc 20

<210> 1751
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1751
agctactcag gaggctgagg 20

<210> 1752
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1752
agctactcag gaggctgagg 20

<210> 1753
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1753
gctactcagg aggctgaggt 20

<210> 1754
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1754
ttttttttt ttttgagac 20

<210> 1755
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1755
ttttttttttt tttttgagac 20

<210> 1756
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1756
ttttttttttt ttttgagaca 20

<210> 1757
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1757
ttttttttttt ttttgagaca 20

<210> 1758
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1758
tttcactgtg ttagccagga 20

<210> 1759
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1759
tcacccaggc tggagtgcaa 20

<210> 1760
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1760
acctgtaatc ccagctactt 20

<210> 1761
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1761
ctaaaaatac aaaattagcc 20

<210> 1762
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1762
gcctgtaatc ctagcacttt 20

<210> 1763
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1763
gcctgtaatc ctagcacttt 20

<210> 1764
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1764
ggagtgcagt ggcgtgatct 20

<210> 1765
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1765
ggagtgcagt ggcgtgatct 20

<210> 1766
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1766
tcccaaagtg ctgagattac 20

<210> 1767
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1767
tgtaatctca gcactttggg 20

<210> 1768
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1768
tagactggat taagaaaatg 20

<210> 1769
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1769
tttcaccatg ttggtcaggc 20

<210> 1770
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1770
cactgcaacc tccgcctcct 20

<210> 1771
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1771
ggagtctcgc tctgtcgccc 20

<210> 1772
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1772
aatgtggcac atatacacca 20

<210> 1773
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1773
acgccactgc actccagcct 20

<210> 1774
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1774
tcccaaagtg ctaggattac 20

<210> 1775
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1775
tcccaaagtg ctaggattac 20

<210> 1776
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1776
ggagtgcagt ggcgcgatct 20

<210> 1777
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1777
cacgccactg cactccagcc 20

<210> 1778
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1778
tgtaatccta gcactttggg 20

<210> 1779
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1779
caaaaattag ctgggcatgg 20

<210> 1780
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1780
ctttgggagg ctgaggtggg 20

<210> 1781
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1781
ggtctcaaac tcctgacctc 20

<210> 1782
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1782
gagaatcgct tgaacccagg 20

<210> 1783
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1783
caggcgtgag ccaccgcgcc 20

<210> 1784
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1784
ctttgggagg ccaaggcagg 20

<210> 1785
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1785
ggtcttgaac tcctgacctc 20

<210> 1786
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1786
tctcgctctg tcgcccaggc 20

<210> 1787
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1787
ctttgggagg ccgaggtggg 20

<210> 1788
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1788
cacctgtaat cccagctact 20

<210> 1789
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1789
cgcgccactg cactccagcc   20

<210> 1790
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1790
acctgtagtc ccagctactc   20

<210> 1791
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1791
agggtttcac catgttggcc   20

<210> 1792
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1792
cactgcaagc tccgcctccc   20

<210> 1793
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1793
tgcctgtagt cccagctact   20

<210> 1794
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1794
ggtctcgaac tcctgacctc   20

<210> 1795
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1795
tcactgcaag ctccgcctcc 20

<210> 1796
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1796
cactgcaacc tccgcctccc 20

<210> 1797
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1797
gcactttggg aggccgaggt 20

<210> 1798
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1798
tcactgcaac ctccgcctcc 20

<210> 1799
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1799
caagaccagc ctggccaaca 20

<210> 1800
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1800
gagatggggt ttcaccatgt 20

<210> 1801
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1801
tgtagtccca gctactcagg 20

<210> 1802
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1802
tgtagtccca gctactcagg 20

<210> 1803
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1803
tcctgagtag ctgggactac 20

<210> 1804
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1804
tcctgagtag ctgggactac 20

<210> 1805
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1805
caggagaatc gcttgaaccc 20

<210> 1806
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1806
caggagaatc gcttgaaccc 20

<210> 1807
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1807
cgagaccagc ctggccaaca 20

<210> 1808
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1808
gcaggagaat cgcttgaacc 20

<210> 1809
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1809
gcaggagaat cgcttgaacc 20

<210> 1810
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1810
tgtaatccca gctactcggg 20

<210> 1811
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1811
taaaaataca aaaaattagc 20

<210> 1812
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1812
gcgccactgc actccagcct 20

<210> 1813
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1813
tcccaagtag ctgggattac 20

<210> 1814
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1814
tgtaatccca gctacttggg 20

<210> 1815
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1815
tcaggagttc aagaccagcc 20

<210> 1816
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1816
tcaggagttc gagaccagcc 20

<210> 1817
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1817
tcaggagttc gagaccagcc 20

<210> 1818
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1818
aaaaatacaa aaaattagcc 20

<210> 1819
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1819
aaaaatacaa aaaattagcc 20

<210> 1820
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1820
tcaggagatc gagaccatcc 20

<210> 1821
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1821
gccttggcct cccaaagtgc 20

<210> 1822
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1822
gccttggcct cccaaagtgc 20

<210> 1823
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1823
gcactttggg aggccaaggc 20

<210> 1824
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1824
gcactttggg aggccaaggc 20

<210> 1825
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1825
gcctcagcct cccaaagtgc 20

<210> 1826
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1826
gcactttggg aggctgaggc 20

<210> 1827
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1827
agcactttgg gaggctgagg 20

<210> 1828
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1828
tcgcccaggc tggagtgcag 20

<210> 1829
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1829
tcgcccaggc tggagtgcag 20

<210> 1830
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1830
ttgtattttt agtagagaca 20

<210> 1831
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1831
ttgtattttt agtagagaca 20

<210> 1832
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1832
ttgcccaggc tggagtgcag 20

<210> 1833
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1833
cacctgtaat cccagcactt 20

<210> 1834
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1834
gcctgtagtc ccagctactc 20

<210> 1835
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1835
acctgtaatc ccagcacttt 20

<210> 1836
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1836
gctacttggg aggctgaggc 20

<210> 1837
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1837
gctactcagg aggctgaggc 20

<210> 1838
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1838
cccagcactt tgggaggcca 20

<210> 1839
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1839
cccagcactt tgggaggcca 20

<210> 1840
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1840
gcctcagcct cccaagtagc 20

<210> 1841
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1841
gcctcggcct cccaaagtgc 20

<210> 1842
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1842
gcctcggcct cccaaagtgc 20

<210> 1843
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1843
ttgtattttt agtagagatg 20

<210> 1844
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1844
ttttttttt ttttttgaga 20

<210> 1845
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1845
ttttttttt ttttttgaga 20

<210> 1846
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1846
ccttggcctc ccaaagtgct 20

<210> 1847
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1847
ccttggcctc ccaaagtgct 20

<210> 1848
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1848
cccagcactt tgggaggctg 20

<210> 1849
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1849
gcactttggg aggccgaggc 20

<210> 1850
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1850
gcactttggg aggccgaggc 20

<210> 1851
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1851
gcctcagcct cctgagtagc 20

<210> 1852
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1852
tttgtatttt tagtagagat 20

<210> 1853
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1853
tttcaccatg ttggccaggc 20

<210> 1854
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1854
gctactcggg aggctgaggc 20

<210> 1855
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1855
agcactttgg gaggccgagg 20

<210> 1856
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1856
cccagctact tgggaggctg 20

<210> 1857
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1857
tgcctgtaat cccagcactt 20

<210> 1858
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1858
cctcagcctc ccaaagtgct 20

<210> 1859
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1859
cctcagcctc ccaagtagct 20

<210> 1860
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1860
cccagctact caggaggctg 20

<210> 1861
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1861
cccagctact caggaggctg 20

<210> 1862
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1862
gcctcagcct cccgagtagc 20

<210> 1863
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1863
cctcagcctc ctgagtagct 20

<210> 1864
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1864
cctcagcctc ctgagtagct 20

<210> 1865
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1865
cccagctact cgggaggctg 20

<210> 1866
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1866
ttgtattttt agtagagacg 20

<210> 1867
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1867
cctcagcctc ccgagtagct 20

<210> 1868
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1868
cccagcactt tgggaggccg 20

<210> 1869
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1869
cccagcactt tgggaggccg 20

<210> 1870
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1870
cctcggcctc ccaaagtgct 20

<210> 1871
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1871
cctcggcctc ccaaagtgct 20

<210> 1872
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1872
cctcggcctc ccaaagtgct 20

<210> 1873
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1873
cgcctgtaat cccagcactt 20

<210> 1874
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1874
cgcctgtaat cccagcactt 20

<210> 1875
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1875
cgcctgtaat cccagcactt 20

<210> 1876
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1876
tttgtatttt tagtagagac 20

<210> 1877
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1877
tttgtatttt tagtagagac 20

<210> 1878
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1878
tttgtatttt tagtagagac 20

<210> 1879
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1879
tttgtatttt tagtagagac 20

<210> 1880
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1880
ttttgtattt ttagtagaga 20

<210> 1881
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1881
ttttgtattt ttagtagaga   20

<210> 1882
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1882
gcctgtaatc ccagcacttt   20

<210> 1883
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1883
gcctgtaatc ccagcacttt   20

<210> 1884
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1884
gcctgtaatc ccagcacttt   20

<210> 1885
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1885
gcctgtaatc ccagcacttt   20

<210> 1886
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1886
tcccaaagtg ctgggattac   20

<210> 1887
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1887
tcccaaagtg ctgggattac 20

<210> 1888
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1888
tcccaaagtg ctgggattac 20

<210> 1889
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1889
tcccaaagtg ctgggattac 20

<210> 1890
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1890
tcccaaagtg ctgggattac 20

<210> 1891
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1891
tgtaatccca gcactttggg 20

<210> 1892
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1892
tgtaatccca gcactttggg 20

<210> 1893
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1893
tgtaatccca gcactttggg 20

<210> 1894
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1894
tgtaatccca gcactttggg 20

<210> 1895
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1895
tgtaatccca gcactttggg 20

<210> 1896
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1896
acctgagtaa taaaaattgt 20

<210> 1897
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1897
tccaacaatt tttattactc 20

<210> 1898
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1898
caacatgcca attagttcac 20

<210> 1899
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1899
ttaataacct gtgaactaat 20

<210> 1900
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1900
tcacaggtta ttaatttaaa 20

<210> 1901
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1901
tttaaaaggt cactgttgtg 20

<210> 1902
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1902
ctttgtcact gtcttgctcc 20

<210> 1903
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1903
ctgtcttgct cctggcttcc 20

<210> 1904
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1904
cctggcttcc tggtttcatg 20

<210> 1905
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1905
cctcatgaaa ccaggaagcc 20

<210> 1906
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1906
agaaggttcc tcatgaaacc 20

<210> 1907
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1907
aatatcattt gaactttaga 20

<210> 1908
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1908
attgaaactc aacagaaaga 20

<210> 1909
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1909
aaactcaaca gaaagaagga 20

<210> 1910
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1910
aactcaacag aaagaaggaa 20

<210> 1911
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1911
ttgtttttat agaaactctg 20

<210> 1912
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1912
taatgagaag tcatgtttct 20

<210> 1913
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1913
tcatgtttct tggaaatttt 20

<210> 1914
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1914
tgtttcttgg aaattttagg 20

<210> 1915
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1915
tagaatttaa tattgtaagc 20

<210> 1916
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1916
tgtaagccgg actattactg 20

<210> 1917
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1917
gtaagccgga ctattactga 20

<210> 1918
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1918
cttaaccctc agtaatagtc 20

<210> 1919
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1919
cggactatta ctgagggtta 20

<210> 1920
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1920
gaagctatta atagctctgc 20

<210> 1921
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1921
aagctattaa tagctctgct 20

<210> 1922
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1922
tgctgggaca agtgtaaatg 20

<210> 1923
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1923
gtgtaaatga ggactgtccc 20

<210> 1924
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1924
aggactgtcc caggcaaatc 20

<210> 1925
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1925
tcccaggcaa atcaggacaa 20

<210> 1926
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1926
cccaggcaaa tcaggacaaa 20

<210> 1927
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1927
ccctttgtcc tgatttgcct   20

<210> 1928
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1928
acccctttgtc ctgatttgcc   20

<210> 1929
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1929
gggtcaccct agtttaaata   20

<210> 1930
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1930
gctaatccat atttaaacta   20

<210> 1931
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1931
tgctaatcca tatttaaact   20

<210> 1932
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1932
tttaaatatg gattagcata   20

<210> 1933
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1933
tattagactg cagtggtgct 20

<210> 1934
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1934
agacttctat tagactgcag 20

<210> 1935
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1935
tagggtttat tgactttctt 20

<210> 1936
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1936
tggaatatat tgagtcttta 20

<210> 1937
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1937
atggaatata ttgagtcttt 20

<210> 1938
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1938
atttagaagt ttaaaagtga 20

<210> 1939
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1939
cacttttaaa cttctaaatg 20

<210> 1940
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1940
taaacttcta aatgtggccc 20

<210> 1941
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1941
cttctaaatg tggccctggc 20

<210> 1942
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1942
taagcatatt atgcctgcca 20

<210> 1943
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1943
ttaagcatat tatgcctgcc 20

<210> 1944
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1944
aggcataata tgcttaaata 20

<210> 1945
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1945
agagagtatt atgtctaaga 20

<210> 1946
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1946
gggcactaga gaggtaagag 20

<210> 1947
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1947
tgaattgatg ggcactagag 20

<210> 1948
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1948
aaaaggaatt ctgaattgat 20

<210> 1949
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1949
taaaaggaat tctgaattga 20

<210> 1950
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1950
ttgaaagtat aaactttaaa 20

<210> 1951
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1951
tactttcaaa tattaaaaat 20

<210> 1952
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1952
aaatattaaa aattggttga 20

<210> 1953
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1953
aatattaaaa attggttgaa 20

<210> 1954
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1954
ttaaaaattg gttgaagggt 20

<210> 1955
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1955
taaaaattgg ttgaagggtt 20

<210> 1956
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1956
aaaaattggt tgaagggttg 20

<210> 1957
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1957
tggttgaagg gttggggatg 20

<210> 1958
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1958
gggttgggga tgtggctcag 20

<210> 1959
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1959
gactcatgaa ggctgggcag 20

<210> 1960
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1960
ggactcatga aggctgggca 20

<210> 1961
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1961
gggactcatg aaggctgggc 20

<210> 1962
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1962
ctcagggact catgaaggct 20

<210> 1963
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1963
actcagggac tcatgaaggc 20

<210> 1964
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1964
tttaactcag ggactcatga 20

<210> 1965
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1965
gcttctggga atttaactca 20

<210> 1966
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1966
tgcttctggg aatttaactc 20

<210> 1967
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1967
gtttgtctta tactgcttct 20

<210> 1968
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1968
tgtttgtctt atactgcttc 20

<210> 1969
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1969
accttacttc atccattttc 20

<210> 1970
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1970
gccagaaaat ggatgaagta 20

<210> 1971
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1971
tgtgtagcta tgccagaaaa 20

<210> 1972
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1972
catacctgca atcctagttc 20

<210> 1973
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1973
ttgtccagaa ctaggattgc 20

<210> 1974
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1974
gcttgaattt gtccagaact 20

<210> 1975
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1975
agttctggac aaattcaagc 20

<210> 1976
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1976
aatgccaacc tcagctactt 20

<210> 1977
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1977
caaacctaag tagctgaggt 20

<210> 1978
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1978
caacctcagc tacttaggtt 20

<210> 1979
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1979
aacctcagct acttaggttt 20

<210> 1980
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1980
agcccaaacc taagtagctg 20

<210> 1981
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1981
ctgagaccct gtcttaacat 20

<210> 1982
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1982
tgagaccctg tcttaacatt 20

<210> 1983
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1983
gagaccctgt cttaacattg 20

<210> 1984
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1984
agaccctgtc ttaacattgg 20

<210> 1985
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1985
tctcccccaa tgttaagaca 20

<210> 1986
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1986
ctctccccca atgttaagac 20

<210> 1987
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1987
ttaacattgg gggagagcct 20

<210> 1988
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1988
attgggggag agcctaggct 20

<210> 1989
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1989
tgtatagctc agcctagcct 20

<210> 1990
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1990
ctatacagta agcctctgtc 20

<210> 1991
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1991
tatacagtaa gcctctgtct 20

<210> 1992
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1992
cagtaagcct ctgtctggga 20

<210> 1993
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1993
taagcctctg tctgggaagg 20

<210> 1994
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1994
aagcctctgt ctgggaagga 20

<210> 1995
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1995
tttccctcct tcccagacag 20

<210> 1996
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1996
tgtctgggaa ggagggaaaa   20

<210> 1997
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1997
tgggaaggag ggaaaaagga   20

<210> 1998
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1998
gaaaaaggaa ggaaagacat   20

<210> 1999
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1999
gacattggtt gaatgacttg   20

<210> 2000
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2000
acattggttg aatgacttgt   20

<210> 2001
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2001
actgtatgtt tagagtgttc   20

<210> 2002
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2002
ctgtatgttt agagtgttca 20

<210> 2003
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2003
gtttagagtg ttcagggaaa 20

<210> 2004
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2004
tagagtgttc agggaaaagg 20

<210> 2005
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2005
aggtcatttg cagagcagag 20

<210> 2006
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2006
attcgtctta tctgagtggc 20

<210> 2007
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2007
gtgtattcgt cttatctgag 20

<210> 2008
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2008
catgaatata gaagaaacag 20

<210> 2009
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2009
aataaaagac acaagactgc 20

<210> 2010
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2010
ctaataatat ttctagtgtc 20

<210> 2011
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2011
cttgagattt tattttcaca 20

<210> 2012
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2012
cttgtgaaaa taaaatctca 20

<210> 2013
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2013
aataaaatct caaggtcata 20

<210> 2014
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2014
tacggcaaac acaaagaaac 20

<210> 2015
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2015
gtcttcagac actccagaag 20

<210> 2016
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2016
tcttcagaca ctccagaaga 20

<210> 2017
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2017
cgagatctga tgccctcttc 20

<210> 2018
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2018
gagggcatca gatctcgtta 20

<210> 2019
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2019
gcatcagatc tcgttacgga   20

<210> 2020
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2020
gatggttgtg agccaccatg   20

<210> 2021
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2021
gtgagccacc atgtggttgc   20

<210> 2022
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2022
tgagccacca tgtggttgct   20

<210> 2023
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2023
aaatcccagc aaccacatgg   20

<210> 2024
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2024
ttcaaatccc agcaaccaca   20

<210> 2025
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2025
ggatttgaac ttcagacctt 20

<210> 2026
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2026
cagaccttcg gaagagcagt 20

<210> 2027
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2027
agaccttcgg aagagcagtc 20

<210> 2028
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2028
gcacccgact gctcttccga 20

<210> 2029
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2029
ggctggtgag atggctcagt 20

<210> 2030
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2030
gggctggtga gatggctcag 20

<210> 2031
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2031
tgagccatct caccagcccc 20

<210> 2032
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2032
aaaacctggg gctggtgaga 20

<210> 2033
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2033
agaaaaaaaa aacctggggc 20

<210> 2034
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2034
actaagaaaa aaaaaacctg 20

<210> 2035
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2035
aactaagaaa aaaaaaacct 20

<210> 2036
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2036
caactaagaa aaaaaaaacc 20

<210> 2037
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2037
tattgttatt cttttgagac 20

<210> 2038
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2038
aggatcccac actgaaactc 20

<210> 2039
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2039
gctagcctga gtttcagtgt 20

<210> 2040
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2040
ggctagcctg agtttcagtg 20

<210> 2041
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2041
ggctagcctt caatttccta 20

<210> 2042
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2042
tcaaatccat aggaaattga 20

<210> 2043
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2043
tgctatgagg tcaaatccat 20

<210> 2044
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2044
gaaactggct gactgctatg 20

<210> 2045
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2045
agcactcaga aggtggaaac 20

<210> 2046
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2046
aaatcttagc actcagaagg 20

<210> 2047
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2047
ttgaaatctt agcactcaga 20

<210> 2048
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2048
ggaattgggt gtggtggctc 20

<210> 2049
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2049
atcttaggaa ttgggtgtgg 20

<210> 2050
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2050
catatcttag gaattgggtg 20

<210> 2051
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2051
aaaaacatat cttaggaatt 20

<210> 2052
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2052
taaaaacata tcttaggaat 20

<210> 2053
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2053
cttgcttaaa aacatatctt 20

<210> 2054
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2054
ctaagatatg tttttaagca 20

<210> 2055
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2055
atgtttttaa gcaaggttat 20

<210> 2056
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2056
cacgtcattg caaagggtta 20

<210> 2057
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2057
acccttttgca atgacgtgtc 20

<210> 2058
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2058
tcctgacacg tcattgcaaa 20

<210> 2059
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2059
ttcctgacac gtcattgcaa 20

<210> 2060
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2060
gacaactgga aaaaaaaaaa 20

<210> 2061
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2061
ttttttttttt tccagttgtc 20

<210> 2062
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2062
ttttttccag ttgtcaggcc 20

<210> 2063
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2063
ccagttgtca ggcctggcaa 20

<210> 2064
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2064
ccattgccag gcctgacaac 20

<210> 2065
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2065
caggcctggc aatggagccc 20

<210> 2066
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2066
aggcctggca atggagccca 20

<210> 2067
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2067
gggccctggg ctccattgcc 20

<210> 2068
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2068
tttagcaagc acagggccct 20

<210> 2069
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2069
gtttagcaag cacagggccc 20

<210> 2070
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2070
gccctgtgct tgctaaacga 20

<210> 2071
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2071
gccatcgttt agcaagcaca 20

<210> 2072
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2072
agccatcgtt tagcaagcac 20

<210> 2073
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2073
gctgggtata tataacttag 20

<210> 2074
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2074
agctgggtat atataactta 20

<210> 2075
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2075
aagctgggta tatataactt 20

<210> 2076
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2076
atatataccc agcttatccc 20

<210> 2077
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2077
gaaagatcct gggataagct 20

<210> 2078
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2078
agaaagatcc tgggataagc 20

<210> 2079
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2079
gaaagtctga gaaagatcct 20

<210> 2080
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2080
agaaagtctg agaaagatcc 20

<210> 2081
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2081
ctatcgatgt tgcttctctt 20

<210> 2082
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2082
cttttttgtga gaaaagagca 20

<210> 2083
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2083
tctaagcaag aacccttgtc 20

<210> 2084
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2084
atctctctga ctccagacaa 20

<210> 2085
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2085
tatctctctg actccagaca 20

<210> 2086
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2086
gtcagagaga tagcttagtc 20

<210> 2087
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2087
tttaaacaag aaaagttctg 20

<210> 2088
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2088
ttttaaacaa gaaaagttct   20

<210> 2089
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2089
tttttaaaca agaaaagttc   20

<210> 2090
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2090
caaacaaaca aacaaaaact   20

<210> 2091
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2091
caaaaactag gcatgacagc   20

<210> 2092
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2092
actaggcatg acagctggag   20

<210> 2093
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2093
aggcatgaca gctggagagg   20

<210> 2094
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2094
attaacagca cttgttaaag 20

<210> 2095
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2095
tgttaaagag gacctcagct 20

<210> 2096
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2096
aggacctcag cttggttccc 20

<210> 2097
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2097
ggacctcagc ttggttccca 20

<210> 2098
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2098
gagccctggg aaccaagctg 20

<210> 2099
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2099
aactggagtt atagagccct 20

<210> 2100
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2100
gaactggagt tatagagccc 20

<210> 2101
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2101
ggctctataa ctccagttcc 20

<210> 2102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2102
gctctataac tccagttcca 20

<210> 2103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2103
gctgtctgag gccctggaac 20

<210> 2104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2104
caggaggctg tctgaggccc 20

<210> 2105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2105
aggctacagg aggctgtctg 20

<210> 2106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2106
atgcatgaag aggctacagg 20

<210> 2107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2107
ctgatgcatg aagaggctac 20

<210> 2108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2108
gcctcttcat gcatcagaca 20

<210> 2109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2109
accatgtctg atgcatgaag 20

<210> 2110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2110
gacatggtcc atatgcatgc 20

<210> 2111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2111
gtgtttgacc tgcatgcata 20

<210> 2112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2112
aaaaataaaa gtctaaaaaa 20

<210> 2113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2113
catgctataa tcccagtgct 20

<210> 2114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2114
atgctataat cccagtgcta 20

<210> 2115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2115
ctataatccc agtgctaggg 20

<210> 2116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2116
acatttgcct ccctagcact 20

<210> 2117
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2117
gacatttgcc tccctagcac 20

<210> 2118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2118
gtgctaggga ggcaaatgtc 20

<210> 2119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2119
ggcaaatgtc tggaccttgt 20

<210> 2120
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2120
aatgtctgga ccttgtcggt 20

<210> 2121
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2121
gactgactgg ccgaccgaca 20

<210> 2122
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2122
tgactggctg gctgactgac 20

<210> 2123
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2123
gctaggctag actgactggc 20

<210> 2124
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2124
ctatgctagg ctagactgac 20

<210> 2125
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2125
ctagcctagc atagcctact 20

<210> 2126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2126
cacacctagt aggctatgct 20

<210> 2127
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2127
tgggctggag cacacctagt 20

<210> 2128
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2128
gacaaggtct ctcattgggc 20

<210> 2129
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2129
tagagacaag gtctctcatt 20

<210> 2130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2130
ttagagacaa ggtctctcat 20

<210> 2131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2131
agaccttgtc tctaaaaaaa 20

<210> 2132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2132
gaccttgtct ctaaaaaaaa 20

<210> 2133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2133
taccttttt tttagagaca 20

<210> 2134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2134
ggtagaaaga aaagacaaaa 20

<210> 2135
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2135
gacaaaatgg atgtctcctg 20

<210> 2136
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2136
ctcctgagga atgataccca 20

<210> 2137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2137
atccgtgggt atcattcctc 20

<210> 2138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2138
ggacaattgt gggtatccgt 20

<210> 2139
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2139
aggacaattg tgggtatccg 20

<210> 2140
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2140
ggatacccac aattgtcctc 20

<210> 2141
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2141
ggagaccaga ggacaattgt 20

<210> 2142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2142
cggagaccag aggacaattg 20

<210> 2143
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2143
gtattgcaca cggagaccag 20

<210> 2144
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2144
acatgggttt gtattgcaca 20

<210> 2145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2145
tgttgcaaat attcagacat 20

<210> 2146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2146
ctgttgcaaa tattcagaca 20

<210> 2147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2147
catgtctgaa tatttgcaac 20

<210> 2148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2148
atgtctgaat atttgcaaca 20

<210> 2149
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2149
agcacagctt tactagatga 20

<210> 2150
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2150
aagcacagct ttactagatg 20

<210> 2151
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2151
catctagtaa agctgtgctt 20

<210> 2152
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2152
gaaaaataag acagatggga 20

<210> 2153
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2153
agaaaaataa gacagatggg 20

<210> 2154
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2154
agtagaaaaa taagacagat 20

<210> 2155
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2155
cagtagaaaa ataagacaga 20

<210> 2156
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2156
catctgtctt atttttctac 20

<210> 2157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2157
atttttctac tggtgtgcta 20

<210> 2158
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2158
gtgctaaggc accatgacca 20

<210> 2159
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2159
tctctaagtt gccttggtca 20

<210> 2160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2160
tcttcttctc taagttgcct 20

<210> 2161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2161
gaagaagaaa cagtttattg 20

<210> 2162
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2162
aagaagaaac agtttattga 20

<210> 2163
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2163
ttgagggttt atagttatag 20

<210> 2164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2164
tgagggttta tagttataga 20

<210> 2165
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2165
gtttatagtt atagagggta 20

<210> 2166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2166
tagttataga gggtaaggca 20

<210> 2167
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2167
tagagggtaa ggcaaggact 20

<210> 2168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2168
taaggcaagg acttggtagc 20

<210> 2169
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2169
gcaaggactt ggtagcaggc 20

<210> 2170
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2170
ggacttggta gcaggcaggc 20

<210> 2171
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2171
ttggtagcag gcaggcaggc 20

<210> 2172
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2172
agcaggcagg caggcaggca 20

<210> 2173
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2173
caggcaggca ggcatggtac 20

<210> 2174
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2174
catggtactg gtgtagtagc 20

<210> 2175
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2175
atggtactgg tgtagtagct 20

<210> 2176
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2176
ggagcttgta tcttgagaca 20

<210> 2177
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2177
aaagctgaga gatagctaag 20

<210> 2178
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2178
aagctgagag atagctaagt 20

<210> 2179
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2179
gagagatagc taagtgggcc 20

<210> 2180
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2180
aggtttcaaa agctcacacc 20

<210> 2181
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2181
tttcactggg gacagctttg 20

<210> 2182
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2182
ttgatggagg catttcactg 20

<210> 2183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2183
gttgatggag gcatttcact 20

<210> 2184
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2184
tgttgatgga ggcatttcac 20

<210> 2185
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2185
gtgaaatgcc tccatcaaca 20

<210> 2186
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2186
aggtgtggcc ttgttgatgg 20

<210> 2187
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2187
gttaggtgtg gccttgttga 20

<210> 2188
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2188
tgtttgggaa gggttaggtg 20

<210> 2189
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2189
agaactgttt gggaagggtt 20

<210> 2190
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2190
ttggtagaac tgtttgggaa 20

<210> 2191
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2191
gttggtagaa ctgtttggga 20

<210> 2192
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2192
tcccaaacag ttctaccaac 20

<210> 2193
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2193
cccaaacagt tctaccaact 20

<210> 2194
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2194
cccagttggt agaactgttt 20

<210> 2195
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2195
tcccagttgg tagaactgtt 20

<210> 2196
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2196
atgaatgctt ggttcccagt 20

<210> 2197
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2197
ctgaggctca tatgaatgct 20

<210> 2198
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2198
caagcattca tatgagcctc 20

<210> 2199
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2199
aagcattcat atgagcctca 20

<210> 2200
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2200
agcattcata tgagcctcag 20

<210> 2201
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2201
tgaatgagac tgctcccctg 20

<210> 2202
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2202
gtactcagta cactgcccca 20

<210> 2203
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2203
tactcagtac actgccccat 20

<210> 2204
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2204
ttagaggact tctgcccatg 20

<210> 2205
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2205
tttagaggac ttctgcccat 20

<210> 2206
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2206
gtttagagga cttctgccca 20

<210> 2207
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2207
atgggcagaa gtcctctaaa 20

<210> 2208
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2208
acacattagt aaccgtttag 20

<210> 2209
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2209
tatccctcac catacttaga 20

<210> 2210
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2210
tttccttcta agtatggtga 20

<210> 2211
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2211
gtttccttct aagtatggtg 20

<210> 2212
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2212
ggcttgtttc cttctaagta 20

<210> 2213
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2213
ggaaacaagc catcccaaaa 20

<210> 2214
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2214
tcatgctatc cattttggga 20

<210> 2215
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2215
tgagtcatgc tatccatttt 20

<210> 2216
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2216
ctgagtcatg ctatccattt 20

<210> 2217
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2217
ttgctctggg tgaagtacac 20

<210> 2218
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2218
tacttcaccc agagcaaatg 20

<210> 2219
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2219
acccagagca aatgtggata 20

<210> 2220
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2220
accgtatcca catttgctct 20

<210> 2221
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2221
caccgtatcc acatttgctc 20

<210> 2222
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2222
cagagcaaat gtggatacgg 20

<210> 2223
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2223
agagcaaatg tggatacggt 20

<210> 2224
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2224
gtggatacgg tgggaaacag 20

<210> 2225
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2225
gggaaacaga ggacagtgat 20

<210> 2226
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2226
aggacagtga taggacacaa 20

<210> 2227
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2227
gtctcagttt ctagttcaga 20

<210> 2228
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2228
agacataaac caacacacat 20

<210> 2229
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2229
tgtatctttc ctatgtgtgt 20

<210> 2230
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2230
ataggaaaga tacactccac 20

<210> 2231
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2231
agatacactc cactggacag 20

<210> 2232
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2232
gatacactcc actggacagt 20

<210> 2233
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2233
catgggctcc cactgtccag 20

<210> 2234
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2234
cagtgggagc ccatgcacaa 20

<210> 2235
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2235
gcccatgcac aaaggttctt 20

<210> 2236
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2236
gccaaagaac ctttgtgcat 20

<210> 2237
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2237
agccaaagaa cctttgtgca 20

<210> 2238
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2238
tgacagcagt ttcttattat 20

<210> 2239
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2239
gacagcagtt tcttattatt 20

<210> 2240
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2240
gatgagcttt gtttctgccc 20

<210> 2241
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2241
atgagctttg tttctgccct 20

<210> 2242
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2242
ccctgggtga gagtttattt 20

<210> 2243
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2243
cctaaataaa ctctcaccca 20

<210> 2244
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2244
tcctaaataa actctcaccc 20

<210> 2245
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2245
cacactaaga caaccactga 20

<210> 2246
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2246
actttgttct aggccatcag 20

<210> 2247
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2247
cagtgctctg actttgttct 20

<210> 2248
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2248
agtcagagca ctgtgcgttg 20

<210> 2249
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2249
cactgtgcgt tgtggatctt 20

<210> 2250
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2250
gatgctttaa tcatcatgaa 20

<210> 2251
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2251
actaacacat tttaatagga 20

<210> 2252
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2252
atggactaac acattttaat 20

<210> 2253
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2253
aaaatgtgtt agtccatttt 20

<210> 2254
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2254
aaatgtgtta gtccattttt 20

<210> 2255
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2255
aatgtgttag tccatttttg 20

<210> 2256
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2256
agtaaacata accccaaaaa 20

<210> 2257
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2257
gggttatgtt tactatacaa 20

<210> 2258
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2258
ttatgtttac tatacaaagg 20

<210> 2259
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2259
gtttactata caaaggtgga 20

<210> 2260
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2260
tttactatac aaaggtggaa 20

<210> 2261
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2261
ttactataca aaggtggaag 20

<210> 2262
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2262
caaaggtgga aggggttatc 20

<210> 2263
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2263
gttatctggc cccatcttac 20

<210> 2264
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2264
acacagttac ctgtaagatg 20

<210> 2265
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2265
gacacagtta cctgtaagat 20

<210> 2266
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2266
ggacacagtt acctgtaaga 20

<210> 2267
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2267
aggtaactgt gtccctttg 20

<210> 2268
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2268
tggtttttat atccacaaaa 20

<210> 2269
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2269
atggttttta tatccacaaa 20

<210> 2270
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2270
aataaaattg cagtatctga 20

<210> 2271
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2271
tatttttgat tatgtgtctg 20

<210> 2272
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2272
atttttgatt atgtgtctga 20

<210> 2273
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2273
cagtatgcac atctgcatgc 20

<210> 2274
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2274
catctgcatg caggtgcctg 20

<210> 2275
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2275
caggtgcctg tggaagcctg 20

<210> 2276
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2276
atgtctccac aggcttccac 20

<210> 2277
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2277
aggtgatctg atgtctccac 20

<210> 2278
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2278
gacatcagat cacctgaagc 20

<210> 2279
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2279
tcacctgaag ctggagtttc 20

<210> 2280
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2280
ctgcctgaaa ctccagcttc 20

<210> 2281
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2281
agttttatgc caccagacac 20

<210> 2282
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2282
ttctcagcac cagtgtctgg 20

<210> 2283
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2283
ctattctcag caccagtgtc 20

<210> 2284
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2284
ataaaatata ctgcttttgc 20

<210> 2285
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2285
gttgcttttg gctggagaga 20

<210> 2286
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2286
ttttaaaggt tgcttttggc 20

<210> 2287
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2287
cagcttttaa aggttgcttt 20

<210> 2288
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2288
aaagcaacct ttaaaagctg 20

<210> 2289
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2289
acataaacca cagcttttaa 20

<210> 2290
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2290
ctctaagtgg atgaattaaa 20

<210> 2291
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2291
catttaattc atccacttag 20

<210> 2292
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2292
atttaattca tccacttaga 20

<210> 2293
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2293
attgaagtgt accctctaag 20

<210> 2294
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2294
aaaatatgct tacagatctg 20

<210> 2295
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2295
aaatatgctt acagatctgt 20

<210> 2296
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2296
tgctaaaagg gttctaaaat 20

<210> 2297
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2297
taatatctgt agtgctaaaa 20

<210> 2298
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2298
ttaatatctg tagtgctaaa 20

<210> 2299
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2299
gctgggggct ggggagaata 20

<210> 2300
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2300
agctgggggc tggggagaat 20

<210> 2301
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2301
gggactggag ctgggggctg 20

<210> 2302
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2302
agggactgga gctgggggct 20

<210> 2303
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2303
cagggactgg agctgggggc 20

<210> 2304
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2304
cagcccccag ctccagtccc 20

<210> 2305
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2305
atgccaggga ctggagctgg 20

<210> 2306
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2306
gatgccaggg actggagctg 20

<210> 2307
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2307
ggatgccagg gactggagct 20

<210> 2308
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2308
tggatgccag ggactggagc 20

<210> 2309
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2309
gatttgtgga tgccagggac 20

<210> 2310
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2310
aaggggattt gtggatgcca 20

<210> 2311
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2311
gaaggggatt tgtggatgcc 20

<210> 2312
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2312
gatggcagga aggggatttg 20

<210> 2313
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2313
aatctataga tggcaggaag 20

<210> 2314
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2314
gaatctatag atggcaggaa 20

<210> 2315
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2315
tgaatctata gatggcagga 20

<210> 2316
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2316
gaggtgaatc tatagatggc 20

<210> 2317
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2317
agaagaggtg aatctataga 20

<210> 2318
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2318
ttcagtgtaa agtctagaag 20

<210> 2319
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2319
ttctagactt tacactgaaa 20

<210> 2320
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2320
aaatggtatt acacaacatg 20

<210> 2321
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2321
ttgcttgccg tgtgtctgtg 20

<210> 2322
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2322
agatgaacct cacagacaca 20

<210> 2323
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2323
tcatctgtgt tgagcatgaa 20

<210> 2324
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2324
taggcgacag gcatattcat 20

<210> 2325
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2325
ttaggcgaca ggcatattca 20

<210> 2326
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2326
gtgttgctat tttaggcgac 20

<210> 2327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2327
tgtgaaagtg ttgctatttt 20

<210> 2328
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2328
ccttctttct tcttcccaag 20

<210> 2329
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2329
cctcttggga agaagaaaga 20

<210> 2330
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2330
cttctttctt cttcccaaga 20

<210> 2331
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2331
gctgcaataa tgtccctctt 20

<210> 2332
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2332
ggctgcaata atgtccctct 20

<210> 2333
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2333
agacacagga gaaaactagc 20

<210> 2334
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2334
agaaacacga aaaaagacac 20

<210> 2335
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2335
cgtgtttctc aagtagatga 20

<210> 2336
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2336
gtgtttctca agtagatgaa 20

<210> 2337
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2337
tctcaagtag atgaagggac 20

<210> 2338
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2338
ttaggaaact gacaaagcag 20

<210> 2339
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2339
tttaggaaac tgacaaagca 20

<210> 2340
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2340
atttaggaaa ctgacaaagc 20

<210> 2341
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2341
aatacagtat tcactcattt 20

<210> 2342
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2342
aaatgagtga atactgtatt 20

<210> 2343
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2343
tattttggtc tttctgattg 20

<210> 2344
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2344
ttattttggt ctttctgatt 20

<210> 2345
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2345
attattttgg tctttctgat 20

<210> 2346
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2346
gagattattt taaattattt 20

<210> 2347
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2347
atctcgtctc tatatcacta 20

<210> 2348
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2348
ctaaggtatc cttttccact 20

<210> 2349
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2349
taaggtatcc ttttccactt 20

<210> 2350
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2350
ctgcatggcc caagtggaaa 20

<210> 2351
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2351
atttctctgc atggcccaag 20

<210> 2352
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2352
ggcatgctta tttctctgca 20

<210> 2353
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2353
gggtggggtg gggtcaatca 20

<210> 2354
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2354
ctgggggttg gggtggggtg 20

<210> 2355
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2355
actgggggtt ggggtggggt 20

<210> 2356
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2356
cactgggggt tggggtgggg 20

<210> 2357
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2357
caccccaccc caacccccag 20

<210> 2358
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2358
caccactggg ggttggggtg 20

<210> 2359
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2359
tcaccactgg gggttggggt 20

<210> 2360
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2360
gtcaccactg ggggttgggg 20

<210> 2361
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2361
cttgtcacca ctgggggttg 20

<210> 2362
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2362
cccaaccccc agtggtgaca 20

<210> 2363
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2363
ccttgtcacc actgggggtt 20

<210> 2364
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2364
tccttgtcac cactgggggt   20

<210> 2365
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2365
gaggtccttg tcaccactgg   20

<210> 2366
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2366
ggaggtcctt gtcaccactg   20

<210> 2367
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2367
gggaggtcct tgtcaccact   20

<210> 2368
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2368
ggggaggtcc ttgtcaccac   20

<210> 2369
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2369
ggtgacaagg acctccccag   20

<210> 2370
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2370
aaatggttga gccgctgggg 20

<210> 2371
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2371
ttcaaatggt tgagccgctg 20

<210> 2372
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2372
attcaaatgg ttgagccgct 20

<210> 2373
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2373
tattcaaatg gttgagccgc 20

<210> 2374
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2374
gctcaaccat ttgaataaaa 20

<210> 2375
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2375
aagtgtcctt tttattcaaa 20

<210> 2376
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2376
atcttagatt tgtgcaaaat 20

<210> 2377
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2377
catcttagat ttgtgcaaaa 20

<210> 2378
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2378
acaaatctaa gatgagcaag 20

<210> 2379
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2379
gtcacctgta aacatgtgcc 20

<210> 2380
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2380
tgctccaggc acatgtttac 20

<210> 2381
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2381
gtaaacatgt gcctggagca 20

<210> 2382
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2382
ctcaggtcgt tccgtgctcc 20

<210> 2383
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2383
gagcacggaa cgacctgagt 20

<210> 2384
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2384
cgacctgagt aggcagaaaa 20

<210> 2385
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2385
cctgagtagg cagaaaaagg 20

<210> 2386
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2386
ccacctttt ctgcctactc 20

<210> 2387
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2387
atttatgatt tttcttttaa 20

<210> 2388
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2388
agtgagaaag gtgggggaaa 20

<210> 2389
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2389
ttggaaagtg agaaaggtgg 20

<210> 2390
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2390
gttggaaagt gagaaaggtg 20

<210> 2391
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2391
tgttggaaag tgagaaaggt 20

<210> 2392
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2392
ttgttggaaa gtgagaaagg 20

<210> 2393
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2393
atattgttgg aaagtgagaa 20

<210> 2394
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2394
tttccaacaa tattatattc 20

<210> 2395
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2395
acaccagaat ataatattgt 20

<210> 2396
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2396
cttttattcc ccagttgttt 20

<210> 2397
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2397
tttaatcacc aaaacaactg 20

<210> 2398
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2398
atttaatcac caaaacaact 20

<210> 2399
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2399
gatttaatca ccaaaacaac 20

<210> 2400
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2400
ttttggtgat taaatcattt 20

<210> 2401
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2401
tttggtgatt aaatcatttt 20

<210> 2402
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2402
ttggtgatta aatcattttg 20

<210> 2403
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2403
tggtgattaa atcattttgg 20

<210> 2404
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2404
actctcattc actgctccct 20

<210> 2405
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2405
aaaaaaaaca ctgtcaccaa 20

<210> 2406
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2406
gaaaaaaaac actgtcacca 20

<210> 2407
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2407
gcagagacag agggaacagc 20

<210> 2408
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2408
tgaaaatgag cagagacaga 20

<210> 2409
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2409
atgaaaatga gcagagacag 20

<210> 2410
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2410
ctgtctctgc tcattttcat 20

<210> 2411
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2411
tgctcatttt cataggaatc 20

<210> 2412
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2412
atctggcacc ttagaatccc 20

<210> 2413
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2413
gcaggcagcc tgggattcta 20

<210> 2414
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2414
catttgactg caggcagcct 20

<210> 2415
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2415
gcatttgact gcaggcagcc 20

<210> 2416
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2416
cctgcagtca aatgcttgct 20

<210> 2417
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2417
cctagcaagc atttgactgc 20

<210> 2418
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2418
ctgcagtcaa atgcttgcta 20

<210> 2419
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2419
cagtcaaatg cttgctaggg 20

<210> 2420
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2420
agtcaaatgc ttgctaggga 20

<210> 2421
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2421
gtcaaatgct tgctagggag 20

<210> 2422
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2422
ttgctaggga ggggagccag 20

<210> 2423
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2423
tgctagggag gggagccagt 20

<210> 2424
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2424
tagggagggg agccagtggg 20

<210> 2425
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2425
agggagggga gccagtgggt 20

<210> 2426
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2426
gggaggggag ccagtgggtg 20

<210> 2427
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2427
ggaggggagc cagtgggtgg 20

<210> 2428
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2428
ttgcaggttc ccccacccac 20

<210> 2429
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2429
atttggagtt gatttcttgc 20

<210> 2430
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2430
aaatcaactc caaatttaat 20

<210> 2431
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2431
gagcttagtc ctattaaatt 20

<210> 2432
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2432
ctgctaatca ggcatggtgt 20

<210> 2433
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2433
accatgcctg attagcagct 20

<210> 2434
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2434
acctagctgc taatcaggca 20

<210> 2435
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2435
atgagaccta gctgctaatc 20

<210> 2436
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2436
ggtctcatcc ttacccctcc 20

<210> 2437
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2437
tccttacccc tccaggaata 20

<210> 2438
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2438
tccttattcc tggaggggta 20

<210> 2439
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2439
taccctcca ggaataagga 20

<210> 2440
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2440
aaccttcctt attcctggag 20

<210> 2441
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2441
caaccttcct tattcctgga 20

<210> 2442
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2442
gcaaccttcc ttattcctgg 20

<210> 2443
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2443
tctgcaacct tccttattcc 20

<210> 2444
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2444
aggttgcaga agtccctgaa 20

<210> 2445
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2445
ggctcagcaa ataccttca 20

<210> 2446
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2446
aggctcagca aataccttc 20

<210> 2447
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2447
gctgagcctc ttgtgaaccg 20

<210> 2448
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2448
ctgagcctct tgtgaaccgt 20

<210> 2449
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2449
gcctcttgtg aaccgtgggt 20

<210> 2450
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2450
gccaacccac ggttcacaag 20

<210> 2451
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2451
agttcaggtg agccaaccca 20

<210> 2452
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2452
aagaatatct actaaagttc 20

<210> 2453
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2453
atattcttta gcgacatatt 20

<210> 2454
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2454
tattctttag cgacatattt 20

<210> 2455
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2455
ttagcgacat atttgggctt 20

<210> 2456
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2456
tgtggagaga taaaagagag 20

<210> 2457
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2457
ttatctctcc acaaaagtct 20

<210> 2458
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2458
tcagtttgcc aagacttttg 20

<210> 2459
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2459
tgatgtttat gcaaccagta 20

<210> 2460
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2460
tatgcaacca gtaaggcctc 20

<210> 2461
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2461
atgcaaccag taaggcctct 20

<210> 2462
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2462
tgcaaccagt aaggcctctg 20

<210> 2463
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2463
ctcagcccca gaggccttac 20

<210> 2464
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2464
cagtaaggcc tctggggctg 20

<210> 2465
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2465
agtaaggcct ctggggctga 20

<210> 2466
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2466
gtaaggcctc tggggctgag 20

<210> 2467
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2467
taaggcctct ggggctgagg 20

<210> 2468
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2468
ggcctctggg gctgaggggg 20

<210> 2469
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2469
gcctctgggg ctgagggggt 20

<210> 2470
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2470
tcccaccccc tcagccccag 20

<210> 2471
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2471
ctgagggggt gggaagccag 20

<210> 2472
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2472
tgagggggtg ggaagccagt 20

<210> 2473
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2473
gggggtggga agccagtggg 20

<210> 2474
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2474
ggtgggaagc cagtgggtgg 20

<210> 2475
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2475
ttgcaggttc cgccacccac 20

<210> 2476
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2476
atttggggcg gatttcttgc 20

<210> 2477
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2477
agaaatccgc cccaaattta 20

<210> 2478
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2478
atgcttcctt aaatttgggg 20

<210> 2479
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2479
ccccaaattt aaggaagcat 20

<210> 2480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2480
cctatgcttc cttaaatttg 20

<210> 2481
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2481
tcctatgctt ccttaaattt 20

<210> 2482
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2482
ttcctatgct tccttaaatt 20

<210> 2483
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2483
cctaccctat gtctgccttg 20

<210> 2484
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2484
ccacaaggca gacatagggt 20

<210> 2485
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2485
ctagccacaa ggcagacata 20

<210> 2486
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2486
cctatgtctg ccttgtggct 20

<210> 2487
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2487
cctagccaca aggcagacat 20

<210> 2488
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2488
gaactaagga cctagccaca 20

<210> 2489
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2489
tccttagttc attgtctctt 20

<210> 2490
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2490
acctaagaga caatgaacta 20

<210> 2491
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2491
ttctactctc aagagaatct 20

<210> 2492
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2492
cttctactct caagagaatc 20

<210> 2493
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2493
cagattctct tgagagtaga 20

<210> 2494
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2494
attctcttga gagtagaagg 20

<210> 2495
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2495
tctcggattt gttaatcagg 20

<210> 2496
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2496
tcctgattaa caaatccgag 20

<210> 2497
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2497
acctctcgga tttgttaatc 20

<210> 2498
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2498
ttcatgagat tagcacctct 20

<210> 2499
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2499
gctaatctca tgaattctcc 20

<210> 2500
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2500
tcatgaattc tcccggacta 20

<210> 2501
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2501
gctatatata accatagtcc 20

<210> 2502
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2502
agctatatat aaccatagtc 20

<210> 2503
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2503
tcagtgatct catgtagctt 20

<210> 2504
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2504
tgatctcatg tagcttaggc 20

<210> 2505
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2505
ctcatgtagc ttaggctggc 20

<210> 2506
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2506
ttgagctcac tatgaagcaa 20

<210> 2507
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2507
aaggatgacc ctgaacttct 20

<210> 2508
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2508
caggaaaacc aagaagttca 20

<210> 2509
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2509
gcaggaaaac caagaagttc 20

<210> 2510
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2510
agcacttgga agatgaaagc 20

<210> 2511
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2511
attcttgtaa tcgcagcact 20

<210> 2512
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2512
gctgccatgt ctagttcatg 20

<210> 2513
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2513
agcaccacat gaactagaca 20

<210> 2514
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2514
tgtctagttc atgtggtgct 20

<210> 2515
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2515
gtctagttca tgtggtgcta 20

<210> 2516
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2516
ggtgctaggg atcaaccctg 20

<210> 2517
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2517
ttaacatgca caaagcctca 20

<210> 2518
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2518
cttaacatgc acaaagcctc 20

<210> 2519
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2519
attcttttga gtcagggtca 20

<210> 2520
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2520
tattcttttg agtcagggtc 20

<210> 2521
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2521
tgaccctgac tcaaaagaat 20

<210> 2522
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2522
gaccctgact caaaagaata 20

<210> 2523
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2523
accctgactc aaaagaatag 20

<210> 2524
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2524
ccctgactca aaagaatagg 20

<210> 2525
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2525
ccccctattc ttttgagtca 20

<210> 2526
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2526
cctgactcaa aagaataggg 20

<210> 2527
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2527
cccccctatt cttttgagtc 20

<210> 2528
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2528
ctgactcaaa agaatagggg 20

<210> 2529
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2529
actcaaaaga atagggggg 20

<210> 2530
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2530
aaaagaatag gggggagga 20

<210> 2531
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2531
gaataggggg ggaggaagga 20

<210> 2532
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2532
agggggggag gaaggaagga 20

<210> 2533
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2533
ggggaggaag gaaggaagga 20

<210> 2534
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2534
aggaaggaag gaaggaagga 20

<210> 2535
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2535
aggaaggaag gaaggaagga 20

<210> 2536
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2536
ggaaggaagg aaggaaggaa 20

<210> 2537
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2537
aggaaggaag gaaggaaggg 20

<210> 2538
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2538
ggaaggaagg aaggaaggga 20

<210> 2539
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2539
aggaaggaag gaagggaggg 20

<210> 2540
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2540
ggaaggaagg aagggaggga 20

<210> 2541
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2541
aggaaggaag ggagggaggg 20

<210> 2542
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2542
ggaaggaagg gagggaggga 20

<210> 2543
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2543
aggaagggag ggagggaggg 20

<210> 2544
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2544
ggaagggagg gagggaggga 20

<210> 2545
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2545
agggagggag ggagggaggg 20

<210> 2546
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2546
gggagggagg gagggaggga 20

<210> 2547
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2547
agggagggag ggagggaggg 20

<210> 2548
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2548
gggagggagg gagggaggga 20

<210> 2549
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2549
agggagggag ggagggaggg 20

<210> 2550
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2550
gggagggagg gagggaggga 20

<210> 2551
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2551
agggagggag ggagggaggg 20

<210> 2552
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2552
gggagggagg gagggaggga 20

<210> 2553
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2553
agggagggag ggagggaggg 20

<210> 2554
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2554
gggagggagg gagggaggga 20

<210> 2555
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2555
agggagggag ggagggaggg 20

<210> 2556
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2556
agggagggag ggagggagga 20

<210> 2557
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2557
gatgttgaga acaaaagcca 20

<210> 2558
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2558
gaacaaaagc caaggccaac 20

<210> 2559
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2559
gccaaggcca acaggtgagt 20

<210> 2560
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2560
ccaaggccaa caggtgagtt 20

<210> 2561
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2561
cccaactcac ctgttggcct 20

<210> 2562
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2562
ccaacaggtg agttgggatt 20

<210> 2563
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2563
cctaatccca actcacctgt 20

<210> 2564
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2564
aaaagtcctt ttcatagcaa 20

<210> 2565
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2565
aaagtccttt tcatagcaaa 20

<210> 2566
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2566
aagtcctttt catagcaaag 20

<210> 2567
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2567
acatcccctt tgctatgaaa 20

<210> 2568
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2568
ttttcatagc aaaggggatg 20

<210> 2569
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2569
gtggaagaag agaagttgac 20

<210> 2570
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2570
agagaagttg acaggtaagt 20

<210> 2571
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2571
gagaagttga caggtaagta 20

<210> 2572
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2572
agaaaaaaga aaaaaatctg 20

<210> 2573
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2573
aagaaaaaaa tctgtggacc 20

<210> 2574
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2574
agaaaaaaat ctgtggacca 20

<210> 2575
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2575
aaaatctgtg gaccagggca 20

<210> 2576
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2576
ctgcgtttct tgccatgccc 20

<210> 2577
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2577
gagcaaatgt tcataaagag 20

<210> 2578
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2578
caaatgttca taaagaggag 20

<210> 2579
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2579
aaatgttcat aaagagaggt 20

<210> 2580
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2580
gttcataaag agaggtgggc 20

<210> 2581
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2581
cataaagaga ggtgggcagg 20

<210> 2582
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2582
ggtgggcagg aggcagacca 20

<210> 2583
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2583
tctgatgagt cttgagacca 20

<210> 2584
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2584
caagactcat cagagagata 20

<210> 2585
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2585
agagataagg caatatcctg 20

<210> 2586
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2586
tcctgaggag cacccatctg 20

<210> 2587
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2587
cctgaggagc acccatctga 20

<210> 2588
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2588
ccctcagatg ggtgctcctc 20

<210> 2589
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2589
ctgaggagca cccatctgag 20

<210> 2590
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2590
ttgctcaacg cccctcagat 20

<210> 2591
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2591
cttgctcaac gcccctcaga 20

<210> 2592
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2592
tctgaggggc gttgagcaag 20

<210> 2593
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2593
ctgaggggcg ttgagcaagt 20

<210> 2594
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2594
catttctctg cattcacaga 20

<210> 2595
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2595
ttctctgcat tcacagatgg 20

<210> 2596
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2596
tgcaactatc tttagcagtg 20

<210> 2597
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2597
tctttagcag tgaggcatgc 20

<210> 2598
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2598
ctttagcagt gaggcatgct 20

<210> 2599
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2599
atgctgggta gtgctaagag 20

<210> 2600
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2600
tgctgggtag tgctaagagc 20

<210> 2601
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2601
tgggtagtgc taagagcggg 20

<210> 2602
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2602
gggtagtgct aagagcgggc 20

<210> 2603
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2603
ggtagtgcta agagcgggcg 20

<210> 2604
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2604
ctaagagcgg gcggggtctg 20

<210> 2605
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2605
agcgggcggg gtctgtggaa 20

<210> 2606
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2606
gcggggtctg tggaatggag 20

<210> 2607
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2607
aatgacgtgg taataaggag 20

<210> 2608
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2608
agtaaaatga cgtggtaata 20

<210> 2609
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2609
taatcaaaag taaaatgacg 20

<210> 2610
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2610
ctatgtatct tgcctcttga 20

<210> 2611
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2611
gtacttgtgt gaccgtcaag 20

<210> 2612
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2612
agtacttcca gttgaagagt 20

<210> 2613
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2613
tgtaatgcct actcttcaac 20

<210> 2614
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2614
gttgaagagt aggcattaca 20

<210> 2615
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2615
tctgcttcca tgaatattct 20

<210> 2616
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2616
ctgcttccat gaatattcta 20

<210> 2617
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2617
aatgtgccct agaatattca 20

<210> 2618
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2618
ctagggcaca tttttattcc 20

<210> 2619
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2619
tgctttcata tatttttcc 20

<210> 2620
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2620
aaagcatttc taattatgaa 20

<210> 2621
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2621
tttctaatta tgaatggaat 20

<210> 2622
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2622
ctaattatga atggaattgg 20

<210> 2623
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2623
tgaatggaat tggtggttta 20

<210> 2624
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2624
gaatggaatt ggtggtttat 20

<210> 2625
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2625
aatggaattg gtggtttatg 20

<210> 2626
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2626
ggaacacata tgctcagcct 20

<210> 2627
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2627
ggttttggta atttattcca 20

<210> 2628
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2628
ataaattacc aaaaccaaag 20

<210> 2629
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2629
gagtctagcc tctttggttt 20

<210> 2630
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2630
agaagggagt ctagcctctt 20

<210> 2631
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2631
gcttctgttg atcggtagaa 20

<210> 2632
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2632
tgcttctgtt gatcggtaga 20

<210> 2633
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2633
tcttatatgc ttctgttgat 20

<210> 2634
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2634
caacagaagc atataagagt 20

<210> 2635
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2635
ttctctactc taccaacttg 20

<210> 2636
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2636
ctactctacc aacttgtggt 20

<210> 2637
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2637
tactctacca acttgtggtt 20

<210> 2638
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2638
aacaggaccc aaccacaagt 20

<210> 2639
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2639
gtcctgttta gaataataag 20

<210> 2640
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2640
tgcctcttat tattctaaac   20

<210> 2641
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2641
gcatctacat gtagagctct   20

<210> 2642
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2642
tctaggaagc cattcaatgc   20

<210> 2643
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2643
ggtttagatc ctgcattgaa   20

<210> 2644
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2644
tcaatgcagg atctaaacct   20

<210> 2645
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2645
cacagacatt gctaaagcca   20

<210> 2646
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2646
tggctttagc aatgtctgtg 20

<210> 2647
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2647
agcaatgtct gtgcggtact 20

<210> 2648
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2648
caaagaaaac caagatttat 20

<210> 2649
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2649
aaaaccaaga tttatcggaa 20

<210> 2650
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2650
accaagattt atcggaatgg 20

<210> 2651
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2651
tccaccattc cgataaatct 20

<210> 2652
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2652
ggtggacact gaaagtagac 20

<210> 2653
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2653
acactgaaag tagacaggaa 20

<210> 2654
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2654
cctagtgtgc agtgtgcaga 20

<210> 2655
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2655
ccatctgcac actgcacact 20

<210> 2656
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2656
gtgtgcagtg tgcagatgga 20

<210> 2657
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2657
tgtgcagtgt gcagatggaa 20

<210> 2658
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2658
tgcagatgga agggcagtgc 20

<210> 2659
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2659
gcagatggaa gggcagtgct 20

<210> 2660
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2660
cagatggaag ggcagtgctg 20

<210> 2661
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2661
tggggagaat ccattgcatt 20

<210> 2662
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2662
cttcttcttt ccaaatgcaa 20

<210> 2663
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2663
ttagcaaaag aaatcgcaga 20

<210> 2664
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2664
attagcaaaa gaaatcgcag 20

<210> 2665
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2665
gcgatttctt ttgctaatgc 20

<210> 2666
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2666
aagcaagtac tacagtgaaa 20

<210> 2667
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2667
ttcactgtag tacttgcttg 20

<210> 2668
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2668
actgtagtac ttgcttgtgg 20

<210> 2669
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2669
tgtggtggtt tgaatgaaaa 20

<210> 2670
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2670
tgaatgaaaa tggtccccac 20

<210> 2671
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2671
gttttcaaaa atagcctgtg 20

<210> 2672
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2672
agttttcaaa aatagcctgt 20

<210> 2673
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2673
aagttttcaa aaatagcctg 20

<210> 2674
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2674
ttgaaaactt gatccccagt 20

<210> 2675
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2675
ccccagttgg tgaaactgtt 20

<210> 2676
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2676
ccaaacagtt tcaccaactg 20

<210> 2677
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2677
tccaaacagt ttcaccaact 20

<210> 2678
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2678
ttccaaacag tttcaccaac 20

<210> 2679
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2679
gttggtgaaa ctgtttggaa 20

<210> 2680
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2680
gaaactgttt ggaaaggatt 20

<210> 2681
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2681
ttggaaagga ttaggaagtg 20

<210> 2682
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2682
attaggaagt gtggccttgc 20

<210> 2683
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2683
aagtgtggcc ttgctggatg 20

<210> 2684
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2684
ttgacagacc tcatccagca 20

<210> 2685
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2685
tgctggatga ggtctgtcaa 20

<210> 2686
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2686
tggatgaggt ctgtcaatgg 20

<210> 2687
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2687
tgaggtctgt caatggcgga 20

<210> 2688
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2688
gagacagaga gaggcacact 20

<210> 2689
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2689
ggagacagag agaggcacac 20

<210> 2690
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2690
aataagtagg agacagagag 20

<210> 2691
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2691
tcatttttca atcaataagt 20

<210> 2692
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2692
aattctggat ggcagagcaa 20

<210> 2693
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2693
tgggtgatta gaattctgga 20

<210> 2694
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2694
gttttgggtg attagaattc 20

<210> 2695
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2695
taattaggct atatggtttt 20

<210> 2696
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2696
ttaattaggc tatatggttt 20

<210> 2697
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2697
cagtatttaa ttaggctata 20

<210> 2698
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2698
tataaaaaca gtatttaatt 20

<210> 2699
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2699
actgttttta taagttacct 20

<210> 2700
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2700
tttataagtt accttggtca 20

<210> 2701
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2701
taccttggtc atggtacttt 20

<210> 2702
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2702
atcctaaagt accatgacca 20

<210> 2703
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2703
tagttaagaa actaagacat 20

<210> 2704
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2704
cttaaccaaa acaccacaga 20

<210> 2705
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2705
ttaaccaaaa caccacagac 20

<210> 2706
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2706
caagcccgtc tgtggtgttt 20

<210> 2707
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2707
gtcatatgca agcccgtctg 20

<210> 2708
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2708
gcatatgaca acagttctag 20

<210> 2709
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2709
ccctgatcaa atgccctagc 20

<210> 2710
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2710
cctgctaggg catttgatca 20

<210> 2711
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2711
acctgctagg gcatttgatc 20

<210> 2712
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2712
atcagacaca gaacctgcta 20

<210> 2713
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2713
catcagacac agaacctgct 20

<210> 2714
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2714
agcaggttct gtgtctgatg 20

<210> 2715
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2715
gcaggttctg tgtctgatga 20

<210> 2716
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2716
ctgtgtctga tgagggctgc 20

<210> 2717
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2717
tgatgagggc tgctggttca 20

<210> 2718
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2718
gatgagggct gctggttcat 20

<210> 2719
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2719
gagggctgct ggttcatggg 20

<210> 2720
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2720
ctttttctca gtgtccttac 20

<210> 2721
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2721
tttctcagtg tccttacagg 20

<210> 2722
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2722
tcagtgtcct tacaggtgga 20

<210> 2723
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2723
ctggatacct tccacctgta 20

<210> 2724
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2724
tggaaggtat ccagctttct 20

<210> 2725
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2725
aatataaggt ccaagaaagc 20

<210> 2726
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2726
ggaatgcgtg ctttaatata 20

<210> 2727
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2727
aagctatcta ctcacatcaa 20

<210> 2728
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2728
gaggtgctta aatcactttg 20

<210> 2729
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2729
ggaggtgctt aaatcacttt 20

<210> 2730
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2730
tggaggtgct taaatcactt 20

<210> 2731
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2731
cctccaaaac cctccgtctc 20

<210> 2732
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2732
ccggagacgg agggttttgg 20

<210> 2733
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2733
catccggaga cggagggttt 20

<210> 2734
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2734
ggggagcatc cggagacgga 20

<210> 2735
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2735
gggggagcat ccggagacgg 20

<210> 2736
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2736
aatgggggag catccggaga 20

<210> 2737
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2737
gtctccggat gctcccccat 20

<210> 2738
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2738
ttcaccaatg ggggagcatc 20

<210> 2739
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2739
tgaaatctgt tcaccaatgg 20

<210> 2740
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2740
ttgaaatctg ttcaccaatg 20

<210> 2741
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2741
gttgaaatct gttcaccaat 20

<210> 2742
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2742
tgttgaaatc tgttcaccaa 20

<210> 2743
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2743
tttcaacata gcaattgagc 20

<210> 2744
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2744
caacatagca attgagcagg 20

<210> 2745
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2745
tagcaattga gcaggaggaa 20

<210> 2746
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2746
ctggctgtga tcaaataatt 20

<210> 2747
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2747
tttgatcaca gccagtactt 20

<210> 2748
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2748
ttgggtgttc accaaagtac 20

<210> 2749
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2749
gtgaacaccc aaacccagca 20

<210> 2750
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2750
ttcagctcca tgctgggttt 20

<210> 2751
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2751
attcagctcc atgctgggtt 20

<210> 2752
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2752
cagatattca gctccatgct 20

<210> 2753
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2753
acagatattc agctccatgc 20

<210> 2754
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2754
ctgtaatctc agtatccagc 20

<210> 2755
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2755
taatctcagt atccagcagg 20

<210> 2756
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2756
agtatccagc aggtggatat 20

<210> 2757
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2757
gtatccagca ggtggatatt 20

<210> 2758
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2758
tatccagcag gtggatattg 20

<210> 2759
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2759
attccccaat atccacctgc 20

<210> 2760
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2760
attggggaat taagacttca 20

<210> 2761
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2761
taagacttca aggccagact 20

<210> 2762
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2762
acttactatg tagccaagtc 20

<210> 2763
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2763
tagtaagttt gatgccatcc 20

<210> 2764
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2764
agtaagtttg atgccatcct 20

<210> 2765
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2765
ggatctcata tagcccagga 20

<210> 2766
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2766
aacaggatct catatagccc 20

<210> 2767
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2767
tatttggggg ttttggaaac 20

<210> 2768
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2768
ttgtttctat ttgggggttt 20

<210> 2769
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2769
tttttattgt ttctatttgg 20

<210> 2770
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2770
ttttttattg tttctatttg 20

<210> 2771
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2771
tttttttatt gtttctattt 20

<210> 2772
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2772
attttttat tgtttctatt 20

<210> 2773
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2773
aaatagaaac aataaaaaaa 20

<210> 2774
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2774
tagggtagca gtgaacatga 20

<210> 2775
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2775
atgttcactg ctaccctaga 20

<210> 2776
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2776
caagcaaaac tgaccttcta 20

<210> 2777
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2777
acaagcaaaa ctgaccttct 20

<210> 2778
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2778
ttgtaacaga tgactaacag 20

<210> 2779
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2779
agatgactaa cagaggaaca 20

<210> 2780
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2780
ctaacagagg aacaaggtcc 20

<210> 2781
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2781
agcatactgg tagctcttcc 20

<210> 2782
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2782
cagcatactg gtagctcttc 20

<210> 2783
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2783
cggaagagct accagtatgc 20

<210> 2784
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2784
ttcattggca gccagcatac 20

<210> 2785
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2785
taagacttca gcagcttcat 20

<210> 2786
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2786
gctgaagtct tagtagattt 20

<210> 2787
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2787
cttagtagat ttaggagcta 20

<210> 2788
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2788
ctggggctgt gatggaagtc 20

<210> 2789
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2789
tggtggtgct ggggctgtga 20

<210> 2790
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2790
tcacagcccc agcaccacca 20

<210> 2791
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2791
cacagcccca gcaccaccat 20

<210> 2792
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2792
cagtgcccat ggtggtgctg 20

<210> 2793
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2793
gcagtgccca tggtggtgct 20

<210> 2794
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2794
ggcagtgccc atggtggtgc 20

<210> 2795
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2795
ctgctgggca gtgcccatgg 20

<210> 2796
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2796
agactgctgg gcagtgccca 20

<210> 2797
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2797
ctaaaagaag atagactgct 20

<210> 2798
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2798
ccagcagtct atcttctttt 20

<210> 2799
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2799
cctaaaagaa gatagactgc 20

<210> 2800
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2800
ctatcttctt ttaggtcttc 20

<210> 2801
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2801
tttaggtctt caggtgtccc 20

<210> 2802
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2802
ttaggtcttc aggtgtccct 20

<210> 2803
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2803
gtgtccctgg gtagagaaca 20

<210> 2804
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2804
gaagccttgt tctctaccca 20

<210> 2805
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2805
agaagccttg ttctctaccc 20

<210> 2806
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2806
aacaaggctt ctgcttgcat 20

<210> 2807
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2807
acaaggcttc tgcttgcata 20

<210> 2808
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2808
gtgagactgt cactgtactg 20

<210> 2809
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2809
tgtgagactg tcactgtact 20

<210> 2810
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2810
ttgtgagact gtcactgtac 20

<210> 2811
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2811
tcacaatgag tgcagcaatg 20

<210> 2812
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2812
gcagcaatgt ggccacagaa 20

<210> 2813
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2813
cagcaatgtg gccacagaac 20

<210> 2814
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2814
agcaatgtgg ccacagaacg 20

<210> 2815
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2815
acacacattt ccccgttctg 20

<210> 2816
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2816
tcaagctgaa agcttttcac 20

<210> 2817
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2817
tctcttgcta aatgacaaag 20

<210> 2818
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2818
ctaaatgaca aagtggttag 20

<210> 2819
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2819
aatgacaaag tggttagagg 20

<210> 2820
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2820
atgacaaagt ggttagagga 20

<210> 2821
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2821
gtgtagacaa tgaaagctgt 20

<210> 2822
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2822
agctttcatt gtctacactc 20

<210> 2823
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2823
tcttttgaga attttacagt 20

<210> 2824
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2824
ctagtcaaca cagaaataaa 20

<210> 2825
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2825
tttgttttgt tgaaaagaag 20

<210> 2826
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2826
ttgttttgtt gaaaagaagt 20

<210> 2827
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2827
tgttttgttg aaaagaagtg 20

<210> 2828
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2828
gttttgttga aaagaagtgg 20

<210> 2829
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2829
ttgaaaagaa gtgggggttt 20

<210> 2830
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2830
tgggggtttt ggtactgatg 20

<210> 2831
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2831
gggggttttg gtactgatga 20

<210> 2832
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2832
ggggttttgg tactgatgag 20

<210> 2833
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2833
tatgttactt attcattctc 20

<210> 2834
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2834
cttattcatt ctcaggttca 20

<210> 2835
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2835
ttaatctatc atttgtcata 20

<210> 2836
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2836
taataaaagc atgcaaatgc 20

<210> 2837
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2837
tgcaaatgct ggagctctgc 20

<210> 2838
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2838
aaatgctgga gctctgctgg 20

<210> 2839
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2839
ggcggagtac ctgatatgca 20

<210> 2840
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2840
gatcttcatc cttgcatatc 20

<210> 2841
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2841
gctttttat ttgatttctg 20

<210> 2842
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2842
agcttttta tttgatttct 20

<210> 2843
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2843
cagcttttt atttgatttc 20

<210> 2844
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2844
cagaaatcaa ataaaaaagc 20

<210> 2845
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2845
agaaatcaaa taaaaaagct 20

<210> 2846
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2846
taaaaaagct gggcatagtg 20

<210> 2847
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2847
agctgggcat agtgaggaag 20

<210> 2848
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2848
gcatagtgag gaagaggaga 20

<210> 2849
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2849
catagtgagg aagaggagat 20

<210> 2850
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2850
agtgaggaag aggagatggg 20

<210> 2851
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2851
aggagatggg aggattcctg 20

<210> 2852
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2852
gatgggagga ttcctgtggc 20

<210> 2853
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2853
ggaggattcc tgtggctggc 20

<210> 2854
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2854
ttagctgtcc agccagccac 20

<210> 2855
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2855
tggaaataga tgaataggct 20

<210> 2856
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2856
tagcctattc atctatttcc 20

<210> 2857
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2857
tggcctggaa atagatgaat 20

<210> 2858
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2858
catctatttc caggccacta 20

<210> 2859
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2859
atctatttcc aggccactaa 20

<210> 2860
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2860
atttccaggc cactaaggga 20

<210> 2861
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2861
ggtaccatcc cttagtggcc 20

<210> 2862
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2862
tttaaggtac catcccttag 20

<210> 2863
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2863
attattattg ttatttttta 20

<210> 2864
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2864
acaataataa taaataaaaa 20

<210> 2865
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2865
taataaataa aaaaggtagc 20

<210> 2866
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2866
aaaaaggtag ctggttcctg 20

<210> 2867
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2867
tggttcctga ggagcatcta 20

<210> 2868
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2868
gatatcctta gatgctcctc 20

<210> 2869
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2869
gtatgtgcac gtggagttaa 20

<210> 2870
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2870
gtatacagtg tatgtgcacg 20

<210> 2871
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2871
tgcacataca ctgtatacac 20

<210> 2872
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2872
tttttttggt aaaacttgat 20

<210> 2873
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2873
ttttttttttt ttttttttttt 20

<210> 2874
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2874
aagaacactt tattcactgt 20

<210> 2875
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2875
aacactttat tcactgttgg 20

<210> 2876
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2876
acactttatt cactgttggt 20

<210> 2877
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2877
ctgttggtgg gtatgtaaac 20

<210> 2878
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2878
ctctgtgctg attttcatag 20

<210> 2879
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2879
cactatgaaa atcagcacag 20

<210> 2880
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2880
ttgttttgtt ggagtgggaa 20

<210> 2881
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2881
tttgttttgt tggagtggga 20

<210> 2882
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2882
ttgttttgtt ttgttggagt 20

<210> 2883
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2883
tttgttttgt tttgttggag 20

<210> 2884
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2884
tttgttttgt tttgttttgt 20

<210> 2885
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2885
gttctagttc tagttctaga 20

<210> 2886
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2886
agttctagtt ctagttctag 20

<210> 2887
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2887
ctagaactac tgcacgatcc 20

<210> 2888
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2888
gatccaggtt taccactcct 20

<210> 2889
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2889
atacctagga gtggtaaacc 20

<210> 2890
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2890
tttgagtaaa tacctaggag 20

<210> 2891
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2891
actcctaggt atttactcaa 20

<210> 2892
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2892
agtcctttga gtaaatacct 20

<210> 2893
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2893
tatacgtcaa cctgtgacag 20

<210> 2894
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2894
gtatatgatg cctctgtcac 20

<210> 2895
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2895
cagaggcatc atatacaagc 20

<210> 2896
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2896
agaggcatca tatacaagca 20

<210> 2897
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2897
catcatatac aagcagggag 20

<210> 2898
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2898
catatacaag cagggagtgg 20

<210> 2899
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2899
tgaggggtgg gattaaaggc 20

<210> 2900
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2900
tgcctttaat cccacccctc 20

<210> 2901
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2901
ctcctgaggg gtgggattaa 20

<210> 2902
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2902
ctttaatccc acccctcagg 20

<210> 2903
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2903
gactctgcct cctgaggggt 20

<210> 2904
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2904
tgactctgcc tcctgagggg 20

<210> 2905
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2905
acccctcagg aggcagagtc 20

<210> 2906
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2906
acctgactct gcctcctgag 20

<210> 2907
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2907
tacctgactc tgcctcctga 20

<210> 2908
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2908
ctacctgact ctgcctcctg 20

<210> 2909
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2909
ggtagatctc tgtgagttcg 20

<210> 2910
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2910
ctgtgagttc gaggccagtt 20

<210> 2911
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2911
actcactatg tagaccaaac 20

<210> 2912
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2912
catatggcta tatggtctta 20

<210> 2913
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2913
cataagacca tatagccata 20

<210> 2914
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2914
aagaccatat agccatatgg 20

<210> 2915
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2915
agaccatata gccatatgga 20

<210> 2916
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2916
gaccatatag ccatatggag 20

<210> 2917
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2917
accatatagc catatggagg 20

<210> 2918
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2918
ccatatagcc atatggaggg 20

<210> 2919
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2919
ccccctcca tatggctata 20

<210> 2920
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2920
ctcacaatcc cccctccata 20

<210> 2921
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2921
gagagaatta ttaaatgaat 20

<210> 2922
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2922
tatacactgt cttctttcat 20

<210> 2923
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2923
cataggaaaa atgaacagaa 20

<210> 2924
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2924
ataggaaaaa tgaacagaaa 20

<210> 2925
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2925
aacagaaagg gagagatctt 20

<210> 2926
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2926
acagaaaggg agagatcttt 20

<210> 2927
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2927
gaaagggaga gatctttggg 20

<210> 2928
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2928
aaagggagag atctttgggt 20

<210> 2929
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2929
aagggagaga tctttgggtg 20

<210> 2930
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2930
atacatgaca tgaaagcaga 20

<210> 2931
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2931
tacatgacat gaaagcagaa 20

<210> 2932
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2932
acatgacatg aaagcagaag 20

<210> 2933
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2933
agcagaaggg gattagttat 20

<210> 2934
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2934
gaaggggatt agttattgga 20

<210> 2935
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2935
gggattagtt attggaaggc 20

<210> 2936
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2936
ggattagtta ttggaaggca 20

<210> 2937
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2937
ttagttattg gaaggcaggg 20

<210> 2938
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2938
tagttattgg aaggcaggga 20

<210> 2939
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2939
tggaaggcag ggagggaccc 20

<210> 2940
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2940
aaggcaggga gggacccagg 20

<210> 2941
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2941
ggagggaccc aggaggatga 20

<210> 2942
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2942
gagggaccca ggaggatgaa 20

<210> 2943
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2943
tctcttccct tcatcctcct 20

<210> 2944
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2944
ttctcttccc ttcatcctcc 20

<210> 2945
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2945
gatgaaggga agagaatgca 20

<210> 2946
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2946
atgaagggaa gagaatgcaa 20

<210> 2947
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2947
gggaagagaa tgcaagggaa 20

<210> 2948
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2948
aatgcaaggg aaaggagtaa 20

<210> 2949
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2949
gcaagggaaa ggagtaaagg 20

<210> 2950
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2950
agggaaagga gtaaaggagg 20

<210> 2951
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2951
gaaaggagta aaggaggagg 20

<210> 2952
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2952
agtaaaggag gaggaggtag 20

<210> 2953
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2953
tattaattcc agcacttgtg 20

<210> 2954
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2954
taattccagc acttgtgagg 20

<210> 2955
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2955
aattccagca cttgtgagga 20

<210> 2956
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2956
attccagcac ttgtgaggag 20

<210> 2957
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2957
tgtcccctcc tcacaagtgc 20

<210> 2958
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2958
gacagagctc tgtgagttca 20

<210> 2959
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2959
tggaactgac tatgcagagg 20

<210> 2960
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2960
ctggaactga ctatgcagag 20

<210> 2961
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2961
ccctctgcat agtcagttcc 20

<210> 2962
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2962
cctggaactg actatgcaga 20

<210> 2963
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2963
tcctggaact gactatgcag 20

<210> 2964
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2964
gtcagttcca ggatagccaa 20

<210> 2965
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2965
tatgtagcca ttggctatcc 20

<210> 2966
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2966
gggtctcatt atgtagccat 20

<210> 2967
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2967
atgagaccct gtgtcagaga 20

<210> 2968
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2968
agaccctgtg tcagagaagg 20

<210> 2969
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2969
cggccacctt ctctgacaca 20

<210> 2970
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2970
cctgtgtcag agaaggtggc 20

<210> 2971
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2971
ccggccacct tctctgacac 20

<210> 2972
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2972
gtcagagaag gtggccggcg 20

<210> 2973
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2973
tcagagaagg tggccggcga 20

<210> 2974
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2974
taagcatcaa tatccctcgc 20

<210> 2975
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2975
taactcattc agctgtgtgg 20

<210> 2976
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2976
gtttaactca ttcagctgtg 20

<210> 2977
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2977
agtgcaaaag tagcaggaac 20

<210> 2978
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2978
attgaaagtg caaaagtagc 20

<210> 2979
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2979
atgctcccag attacttaca 20

<210> 2980
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2980
aaattccatg taagtaatct 20

<210> 2981
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2981
taaattccat gtaagtaatc 20

<210> 2982
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2982
atggaattta tattttattg 20

<210> 2983
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2983
gaggtttgtc tatgatgtac 20

<210> 2984
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2984
ttggttgaaa atttttcttg 20

<210> 2985
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2985
aaattttcaa ccaatagtcc 20

<210> 2986
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2986
gttatttttg cctggactat 20

<210> 2987
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2987
aaaaagaggt tatttttgcc 20

<210> 2988
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2988
agaaagaaag aaagaaaaag 20

<210> 2989
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2989
tctttttttt ttttttttt 20

<210> 2990
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2990
ttttttggt tttttgaaac 20

<210> 2991
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2991
ttttttggtt ttttgaaaca 20

<210> 2992
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2992
agggtttctc tgtatagccc 20

<210> 2993
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2993
ctgtatagcc ctggctgtcc 20

<210> 2994
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2994
agtgagttcc aggacagcca 20

<210> 2995
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2995
aagtgagttc caggacagcc 20

<210> 2996
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2996
tggtgtacaa agtgagttcc 20

<210> 2997
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2997
tggaactcac tttgtacacc 20

<210> 2998
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2998
actcactttg tacaccaggc 20

<210> 2999
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2999
ttctgagttc gaggccagcc 20

<210> 3000
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3000
caggtggatt tctgagttcg 20

<210> 3001
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3001
actcgggagg cagaggcagg 20

<210> 3002
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3002
agcactcggg aggcagaggc 20

<210> 3003
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3003
gcctctgcct cccgagtgct 20

<210> 3004
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3004
tccgagcact cgggaggcag 20

<210> 3005
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3005
ctttaatccg agcactcggg 20

<210> 3006
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3006
ctcccgagtg ctcggattaa 20

<210> 3007
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3007
cgcctttaat ccgagcactc 20

<210> 3008
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3008
acgcctttaa tccgagcact 20

<210> 3009
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3009
tatttttgc gggacggtgg 20

<210> 3010
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3010
ggttattttt tgcgggacgg 20

<210> 3011
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3011
acaggttatt ttttgcggga 20

<210> 3012
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3012
aaaaacaggt tatttttgc 20

<210> 3013
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3013
caaaaacagg ttatttttg 20

<210> 3014
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3014
ataattaaaa caacaaaaac 20

<210> 3015
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3015
tttttaagat tttatgtgta 20

<210> 3016
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3016
ttttaagatt ttatgtgtat 20

<210> 3017
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3017
ctgtgtacca cttgtatgct 20

<210> 3018
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3018
ttgggcacca agcatacaag 20

<210> 3019
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3019
tgtatgcttg gtgcccaaga 20

<210> 3020
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3020
tgatctgttc tgtccttctt 20

<210> 3021
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3021
atgatctgtt ctgtccttct 20

<210> 3022
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3022
agaaggacag aacagatcat 20

<210> 3023
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3023
gaaggacaga acagatcata 20

<210> 3024
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3024
gaacagatca tagggtttcc 20

<210> 3025
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3025
aacagatcat agggtttcct 20

<210> 3026
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3026
tttcctggga taagagttat 20

<210> 3027
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3027
actcctataa ctcttatccc 20

<210> 3028
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3028
gatgactgta agccaccaag 20

<210> 3029
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3029
gtaagccacc aagtggacgc 20

<210> 3030
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3030
taagccacca agtggacgct 20

<210> 3031
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3031
aattcccagc gtccacttgg 20

<210> 3032
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3032
ttcaattccc agcgtccact 20

<210> 3033
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3033
ggacgctggg aattgaacct 20

<210> 3034
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3034
ggaattgaac cttggttagc 20

<210> 3035
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3035
gacactcttc cagctaacca 20

<210> 3036
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3036
gggactggaa ttaaaaatac 20

<210> 3037
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3037
catagacaaa caacggggac 20

<210> 3038
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3038
atcttcatag acaaacaacg 20

<210> 3039
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3039
aatcttcata gacaaacaac 20

<210> 3040
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3040
aaatcttcat agacaaacaa 20

<210> 3041
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3041
ttgtctatga agattttgct 20

<210> 3042
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3042
ttttgcttgg tagtccagtc 20

<210> 3043
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3043
ccagtctggc tttaagaaac 20

<210> 3044
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3044
cctgtttctt aaagccagac 20

<210> 3045
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3045
cagtctggct ttaagaaaca 20

<210> 3046
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3046
aacagggtct catgcatccc 20

<210> 3047
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3047
atggaagtct gagcaagcca 20

<210> 3048
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3048
catggaagtc tgagcaagcc 20

<210> 3049
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3049
ctcagacttc catgcagctg 20

<210> 3050
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3050
gacttccatg cagctgagga 20

<210> 3051
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3051
taaagccatc ctcagctgca 20

<210> 3052
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3052
tctacgagga aaaggcagga 20

<210> 3053
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3053
ctctacgagg aaaaggcagg 20

<210> 3054
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3054
gcactctacg aggaaaaggc 20

<210> 3055
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3055
ctcagcactc tacgaggaaa 20

<210> 3056
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3056
tgtaatctca gcactctacg 20

<210> 3057
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3057
gagaagtctg ctggtggcac 20

<210> 3058
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3058
tgttaggaga agtctgctgg 20

<210> 3059
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3059
tcttgttagg agaagtctgc 20

<210> 3060
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3060
gacttctcct aacaagaatg 20

<210> 3061
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3061
tcctaacaag aatgtggcac 20

<210> 3062
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3062
cctaacaaga atgtggcaca 20

<210> 3063
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3063
ccctgtgcca cattcttgtt 20

<210> 3064
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3064
aacaagaatg tggcacaggg 20

<210> 3065
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3065
atgtggcaca gggaggcaac 20

<210> 3066
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3066
tgtggcacag ggaggcaact 20

<210> 3067
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3067
gaggcaactg ggaatcaaac 20

<210> 3068
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3068
caactgggaa tcaaacagga 20

<210> 3069
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3069
ctgggaatca aacaggaagg 20

<210> 3070
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3070
aaacaggaag gaggagtaaa 20

<210> 3071
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3071
aggaaggagg agtaaaagga 20

<210> 3072
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3072
ggaaggagga gtaaaaggaa 20

<210> 3073
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3073
gaaggaggag taaaaggaag 20

<210> 3074
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3074
ggaggagtaa aaggaagggg 20

<210> 3075
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3075
gagtaaaagg aaggggagga 20

<210> 3076
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3076
aaaggaaggg gaggaaggag 20

<210> 3077
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3077
gggaggaagg agaggagaag 20

<210> 3078
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3078
ggaaggagag gagaagtggc 20

<210> 3079
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3079
aggagaggag aagtggcagg 20

<210> 3080
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3080
gtggcaggag gagaagaaaa 20

<210> 3081
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3081
gcaggaggag aagaaaaagg 20

<210> 3082
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3082
ggaggagaag aaaaaggagg 20

<210> 3083
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3083
agaaaaagga ggcggagaaa 20

<210> 3084
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3084
aaaaggaggc ggagaaaagg 20

<210> 3085
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3085
aggcggagaa aaggtggtag 20

<210> 3086
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3086
cggagaaaag gtggtagtgg 20

<210> 3087
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3087
agaaaaggtg gtagtggtgg 20

<210> 3088
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3088
ggtggtagtg gtggaggaag 20

<210> 3089
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3089
ggtagtggtg gaggaagagg 20

<210> 3090
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3090
agtggtggag gaagaggagg 20

<210> 3091
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3091
ggtggaggaa gaggaggagg 20

<210> 3092
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3092
ggaggaagag gaggaggagg 20

<210> 3093
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3093
ggaagaggag gaggaggagg 20

<210> 3094
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3094
agaggaggag gaggaggagg 20

<210> 3095
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3095
ggaggaggag gaggaggagg 20

<210> 3096
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3096
ggaggaggag gaggaggagg 20

<210> 3097
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3097
gaggaggagg aggaggagga 20

<210> 3098
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3098
aggaggagga ggaggaggag 20

<210> 3099
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3099
ggaggaggag gaggaggagg 20

<210> 3100
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3100
gaggggact taatcagtaa 20

<210> 3101
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3101
acttaatcag taaaggaaaa 20

<210> 3102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3102
aaaaggctga gctcagtcct 20

<210> 3103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3103
ctcagtcctt ggaacctaca 20

<210> 3104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3104
gtccttggaa cctacatggt 20

<210> 3105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3105
ctcctaccat gtaggttcca 20

<210> 3106
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3106
ctcattctct cctaccatgt 20

<210> 3107
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3107
gtttcctctg atccccacac 20

<210> 3108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3108
tgctccagtg tggggatcag 20

<210> 3109
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3109
tgatccccac actggagcaa 20

<210> 3110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3110
ggcaccattg ctccagtgtg 20

<210> 3111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3111
tggcaccatt gctccagtgt 20

<210> 3112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3112
atggcaccat tgctccagtg 20

<210> 3113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3113
gaagtgggag agtgatgtga 20

<210> 3114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3114
tgtgaggagt tgggtgaagt 20

<210> 3115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3115
ttgtgaggag ttgggtgaag 20

<210> 3116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3116
ttttattttt gtgaggagtt 20

<210> 3117
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3117
tttttatttt tgtgaggagt 20

<210> 3118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3118
ttttgttttt tatttttgtg 20

<210> 3119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3119
ttaaaaaaga aagctgtagc 20

<210> 3120
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3120
taaaaaagaa agctgtagcc 20

<210> 3121
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3121
aagaaagctg tagccgggcg 20

<210> 3122
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3122
aaagctgtag ccgggcgtgg 20

<210> 3123
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3123
aaagtgtgtg ccaccacgcc 20

<210> 3124
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3124
gtggcacaca cttttaatcc 20

<210> 3125
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3125
acacttttaa tcccggcact 20

<210> 3126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3126
cacttttaat cccggcactt 20

<210> 3127
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3127
ttttaatccc ggcacttggg 20

<210> 3128
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3128
tcccggcact tgggaggcag 20

<210> 3129
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3129
gcctctgcct cccaagtgcc 20

<210> 3130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3130
tgcctctgcc tcccaagtgc 20

<210> 3131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3131
acttgggagg cagaggcaag 20

<210> 3132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3132
caagcggatt tctgagttcg 20

<210> 3133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3133
ttctgagttc gaggccagct 20

<210> 3134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3134
actcactttg tagaccaagc 20

<210> 3135
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3135
tggtctacaa agtgagttcc 20

<210> 3136
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3136
aagtgagttc caggacagcc 20

<210> 3137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3137
agtgagttcc aggacagcca 20

<210> 3138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3138
ctgtgtagcc ctggctgtcc 20

<210> 3139
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3139
agggtttctc tgtgtagccc 20

<210> 3140
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3140
tcttttggtt tttcaagaca 20

<210> 3141
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3141
ttcttttggt ttttcaagac 20

<210> 3142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3142
acagctttct ttttttcttt 20

<210> 3143
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3143
tatattaata tagcaaagca 20

<210> 3144
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3144
atatattaat atagcaaagc 20

<210> 3145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3145
tgtttttct tatagaatta 20

<210> 3146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3146
ttctggaggg aggaaaagga   20

<210> 3147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3147
ctcattctgg agggaggaaa   20

<210> 3148
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3148
gggccuuaug caucuccauc   20

<210> 3149
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3149
uaaucagcau auuauccaga   20

<210> 3150
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3150
cccuuuugua cguuuuuuaa   20

<210> 3151
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3151
cuguaucuuc uuagccagua   20

<210> 3152
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3152
guuaacgcgu cauuuacauu 20

<210> 3153
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3153
uacaauaaau uagccggaug 20

<210> 3154
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3154
aaacuuuuag gagucaaagu 20

<210> 3155
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3155
aaaacuuuua ggagucaaag 20

<210> 3156
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3156
aauguuaaca guguuggcuu 20

<210> 3157
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3157
gugguggcug caggugaggg 20

<210> 3158
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3158
uacuaaaaug uuaacagugu 20

<210> 3159
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3159
aaaaaaggac uugacaugca 20

<210> 3160
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3160
gucccagcuu cucuugaggg 20

<210> 3161
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3161
guuaacagug uuggcuuugg 20

<210> 3162
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3162
guugggugguc acugacagug 20

<210> 3163
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3163
gaaacuagug gcuaccguac 20

<210> 3164
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3164
aaaaaacgua caaaaggggc 20

<210> 3165
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3165
agccccaggc caucaaccgg 20

<210> 3166
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3166
ggcagccaga cagaugcuuc 20

<210> 3167
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3167
cuggagaaca aaagcauuuu 20

<210> 3168
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3168
aucuuagauu uaugcaaugu 20

<210> 3169
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3169
acaaguagaa ucagaauucu 20

<210> 3170
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3170
aauaucggcu cacugcaacc 20

<210> 3171
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3171
cccucaagag aagcugggac 20

<210> 3172
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3172
ucuuaggaga ugacgagguu 20

<210> 3173
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3173
aauaauaaag aacuagagaa 20

<210> 3174
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3174
aaaaacguac aaaaggggcc 20

<210> 3175
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3175
ggcugagcag gcggagaagu 20

<210> 3176
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3176
agagaaagga gaacagucug 20

<210> 3177
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3177
cuucuuucuc uuucacgaga 20

<210> 3178
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3178
aaucuuagau uuaugcaaug 20

<210> 3179
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3179
cugagcaggc ggagaaguag 20

<210> 3180
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3180
accuaguguu gacaaggcug 20

<210> 3181
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3181
ucccagcuuc ucuugagggu 20

<210> 3182
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3182
aauaauucug uugggacgac 20

<210> 3183
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3183
ccuauaaaga ggacguuucc 20

<210> 3184
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3184
ccuucuuucu cuuucacgag 20

<210> 3185
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3185
cccaucgaag uacucaccau 20

<210> 3186
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3186
gugucauaug uugcuggugg 20

<210> 3187
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3187
aauguaaaug acgcguuaac 20

<210> 3188
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3188
gccuuugagc caaguggauu 20

<210> 3189
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3189
gucagacucu gugcuggcug 20

<210> 3190
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3190
ccgucaauag cauuccgguu 20

<210> 3191
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3191
ccauuaaaaa acguacaaaa 20

<210> 3192
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3192
gggauuuggg gaggaugggg 20

<210> 3193
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3193
acugugucau auguugcugg 20

<210> 3194
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3194
uacaauguug uggaccgggc 20

<210> 3195
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3195
gauagaguag caaacaaaac 20

<210> 3196
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3196
gcucucaaag gagacugaga 20

<210> 3197
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3197
ggaagagcaa ggagcuccug 20

<210> 3198
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3198
ugugucauau guugcuggug 20

<210> 3199
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3199
cugagaaggu guaccuagag 20

<210> 3200
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3200
guccgggagc caguuccugc 20

<210> 3201
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3201
uuaggagaug acgagguugg 20

<210> 3202
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3202
ggaggaagca gagcucucaa 20

<210> 3203
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3203
agucaucagc cugggaaaca 20

<210> 3204
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3204
uccgggagcc aguuccugca 20

<210> 3205
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3205
gagcaaggag cuccugaggc 20

<210> 3206
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3206
ucugguacaa uguuguggac 20

<210> 3207
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3207
ccugggagug ucugacaacc 20

<210> 3208
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3208
ccaguuccug cagggccucg 20

<210> 3209
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3209
uagggaaugg gcugagcagg 20

<210> 3210
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3210
agcuuucugu cccugugaga 20

<210> 3211
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3211
ucgucucccu gccuucucac 20

<210> 3212
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3212
cgaaguacuc accaugggca 20

<210> 3213
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3213
aggccacugg accaugccca 20

<210> 3214
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3214
ggcagggaga cgagucuaau 20

<210> 3215
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3215
gggcuuagau uuaugcaaua   20

<210> 3216
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3216
uucagcgaag acaagggauu   20

<210> 3217
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3217
cauggcccac gaggcccugc   20

<210> 3218
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3218
caguuccugc agggccucgu   20

<210> 3219
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3219
cauuaaaaaa cguacaaaag   20

<210> 3220
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3220
aggcagggag acgagucuaa   20

<210> 3221
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3221
cuaacaucug gaugaaccug 20

<210> 3222
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3222
ccaguggccu gucuucuccu 20

<210> 3223
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3223
uauuacaaau acugccgcua 20

<210> 3224
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3224
gcagggagac gagucuaaug 20

<210> 3225
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3225
caaucugcuu gagaaacagg 20

<210> 3226
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3226
ggcuuagauu uaugcaauau 20

<210> 3227
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3227
acacucccag ggcucacucu 20

<210> 3228
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3228
uaugggcuca uucugccccu 20

<210> 3229
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3229
cgaagacaag ggauuugggg 20

<210> 3230
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3230
agcacagagu cugacauuga 20

<210> 3231
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3231
gucuuaggag augacgaggu 20

<210> 3232
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3232
gcugagcagg cggagaagua 20

<210> 3233
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3233
uuccaaucug cuugagaaac 20

<210> 3234
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3234
gagaucauaa uacaucucag 20

<210> 3235
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3235
gcccaucgaa guacucacca 20

<210> 3236
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3236
caggcggaga aguaggggug 20

<210> 3237
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3237
uugaaaccca gucaccaaug 20

<210> 3238
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3238
acauaaucca acugagaguc 20

<210> 3239
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3239
gugaguguac ugagucuccg 20

<210> 3240
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3240
caauggaguc acacagcaug 20

<210> 3241
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3241
ggggugggg gacgcauuug 20

<210> 3242
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3242
aacugagagu caggaaaccu 20

<210> 3243
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3243
ugcucacuuc cauaaggaua 20

<210> 3244
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3244
auuuggggag gauggggagg 20

<210> 3245
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3245
cgggcuggcc acggcaagug 20

<210> 3246
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3246
cucaauguca gacucugugc 20

<210> 3247
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3247
ugcagacuau uaauugcaag 20

<210> 3248
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3248
acaggcguga gccacgggcc 20

<210> 3249
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3249
caucaauugu gccaggcccg 20

<210> 3250
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3250
cagcacagag ucugacauug 20

<210> 3251
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3251
guugcagacu auuaauugca 20

<210> 3252
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3252
gcaagugugg caacaggguc 20

<210> 3253
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3253
uagggucuug gaguuuugau 20

<210> 3254
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3254
aaagccucac auggcccacg 20

<210> 3255
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3255
ccucgaggug agcgugugcu 20

<210> 3256
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3256
gcaggcggag aaguaggggu 20

<210> 3257
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3257
cauuuuugug gacaguugug 20

<210> 3258
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3258
uugcagacua uuaauugcaa 20

<210> 3259
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3259
cugguuguca gacacuccca 20

<210> 3260
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3260
cagcgaagac aagggauuug 20

<210> 3261
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3261
ucagcgaaga caagggauuu 20

<210> 3262
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3262
uggauuugaa aauaagaagu 20

<210> 3263
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3263
agguuuaaaa auauugggug 20

<210> 3264
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3264
uuggcccagg gugguggcag 20

<210> 3265
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3265
acagaaaaag cugucaccaa 20

<210> 3266
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3266
acaagggauu uggggaggau 20

<210> 3267
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3267
ggcagcccca ggccaucaac 20

<210> 3268
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3268
cagguuccca gcuguacaau 20

<210> 3269
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3269
aggcggagaa guaggggugg 20

<210> 3270
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3270
aguguggugg cugcagguga 20

<210> 3271
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3271
agcacauugg gcagacacaa 20

<210> 3272
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3272
ccacgaggcc cugcaggaac 20

<210> 3273
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3273
cgucucccug ccuucucaca 20

<210> 3274
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3274
agauacuaau cccauguaug 20

<210> 3275
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3275
uuaggcuuug cccucauaca 20

<210> 3276
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3276
cuacucgggg gaggcugaag 20

<210> 3277
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3277
accucacugc cucagcagcg 20

<210> 3278
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3278
uugaggaccc aggagaagac 20

<210> 3279
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3279
cuuaggagau gacgagguug 20

<210> 3280
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3280
ggcggagaag uagggguggg 20

<210> 3281
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3281
cugguacaau guuguggacc 20

<210> 3282
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3282
ggcaaagcau ucugggcaga 20

<210> 3283
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3283
gaaaauuacg gugacugcug 20

<210> 3284
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3284
ggaccaaccu aguguugaca 20

<210> 3285
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3285
gcuuuuguuc uccaguuugu 20

<210> 3286
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3286
ugauuuaauc accaacaaac 20

<210> 3287
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3287
auuuagcaau guuuacuggg 20

<210> 3288
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3288
ggcauugaau ccaauaugug 20

<210> 3289
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3289
guguuaccau cagagauugc 20

<210> 3290
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3290
guaggccauu cagugcuuac 20

<210> 3291
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3291
uuugaaaaua agaaguuggc 20

<210> 3292
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3292
caccucguuc cgccgguuga 20

<210> 3293
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3293
acacgcucac cucgagggcu 20

<210> 3294
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3294
gauauccagu aagcacugaa 20

<210> 3295
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3295
uggauuuagc aauguuuacu 20

<210> 3296
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3296
uaaagaggac guuuccuggc 20

<210> 3297
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3297
uuaaucuguc uuuugucgua 20

<210> 3298
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3298
auaggaaaug ccuuacugug 20

<210> 3299
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3299
cuuacuggau aucugaaccu 20

<210> 3300
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3300
aguaaacauu gcuaaaucca 20

<210> 3301
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3301
ggguucuugc cuugggguau 20

<210> 3302
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3302
gugaggcuuu guggaacuug 20

<210> 3303
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3303
acaucuuacu acuaccacau 20

<210> 3304
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3304
ccaccaacac cccuugccuu 20

<210> 3305
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3305
uuuuugggag accaaaggca 20

<210> 3306
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3306
uuucauccuc cacgcugcug 20

<210> 3307
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3307
ucagagccac augaaacuag 20

<210> 3308
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3308
uccauuaaaa aacguacaaa 20

<210> 3309
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3309
aaaaaaagga cuugacaugc 20

<210> 3310
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3310
gcuccugagg cuggagcuag 20

<210> 3311
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3311
agaaggugua ccuagagugg 20

<210> 3312
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3312
ggugccagca gauuuggguc 20

<210> 3313
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3313
gauacuaauc ccauguauga 20

<210> 3314
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3314
gaaauccgag agugagcccu 20

<210> 3315
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3315
aaaaccccug caaucucuga 20

<210> 3316
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3316
uaauaauauu uauauuauuc 20

<210> 3317
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3317
agaaaagaaa ugcaagaaau 20

<210> 3318
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3318
ugaacugugu cauauguugc 20

<210> 3319
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3319
cagaaagcuu ucuguaucuc 20

<210> 3320
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3320
agaagcuggg acuggcugug 20

<210> 3321
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3321
cuucucuuga ggguggggau 20

<210> 3322
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3322
gcccagaaug cuuugcccac 20

<210> 3323
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3323
agcaggcgga gaaguagggg 20

<210> 3324
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3324
ucuccucuag cuccagccuc 20

<210> 3325
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3325
gguuaaauga aagggaaagc 20

<210> 3326
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3326
cuaaagcgcg ccuuuccuca 20

<210> 3327
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3327
agaagaugcu ggcuuggccc 20

<210> 3328
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3328
caggagcucc uugcucuucc 20

<210> 3329
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3329
cugugucaua uguugcuggu 20

<210> 3330
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3330
uagcacauug ggcagacaca   20

<210> 3331
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3331
gaagcauauc acuucugcua   20

<210> 3332
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3332
guuguggacc gggcuggcca   20

<210> 3333
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3333
uccaguggcc ugucuucucc   20

<210> 3334
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3334
aauuuccugc ugugacaaca   20

<210> 3335
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3335
caagggauuu ggggaggaug   20

<210> 3336
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3336
aggaaguagg gaacagggac 20

<210> 3337
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3337
accuccaucu cuauaaaaau 20

<210> 3338
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3338
uuacuucucu uuggcuauga 20

<210> 3339
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3339
ucccacuggc ccacguugca 20

<210> 3340
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3340
cagccauguu gcuucuccuu 20

<210> 3341
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3341
uauuuuucuc ccuguuuaga 20

<210> 3342
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3342
gggcaaagca uucugggcag 20

<210> 3343
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3343
gaaggaggcg agacaccugu 20

<210> 3344
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3344
auuuccugcu gugacaacaa 20

<210> 3345
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3345
aagaaaagaa augcaagaaa 20

<210> 3346
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3346
gcuucucuug agggugggga 20

<210> 3347
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3347
auuaaucugu cuuuugucgu 20

<210> 3348
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3348
acaggaggaa cgcacgcagc 20

<210> 3349
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3349
ccugguuguc agacacuccc 20

<210> 3350
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3350
aggucaacau caauugugcc 20

<210> 3351
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3351
gacaagggau uuggggagga 20

<210> 3352
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3352
ggcuuagauc uaaauacucc 20

<210> 3353
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3353
gagcacacag ccucacagua 20

<210> 3354
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3354
guuaccauca gagauugcag 20

<210> 3355
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3355
uuggauuuag caauguuuac 20

<210> 3356
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3356
cuuggaguuu ugauaggcac 20

<210> 3357
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3357
auuuaauaaa agagaaaccu 20

<210> 3358
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3358
uuuaauaaaa gagaaaccuu 20

<210> 3359
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3359
auuaaaaagc agggagaagg 20

<210> 3360
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3360
gaguuccaga agcaucuguc 20

<210> 3361
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3361
gaagaugcug gcuuggccca 20

<210> 3362
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3362
gcuagaggag agagagucuu 20

<210> 3363
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3363
cgaaggaggc gagacaccug 20

<210> 3364
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3364
gacaaacagc cuuugucuuc 20

<210> 3365
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3365
uauuggauuc aaugccaaua 20

<210> 3366
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3366
uccccacccu caagagaagc 20

<210> 3367
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3367
ucacagcaga guggcccuuu 20

<210> 3368
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3368
gauugagagg gaauuggaac 20

<210> 3369
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3369
uuuugggaga ccaaaggcaa 20

<210> 3370
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3370
cccagcuucu cuugagggug 20

<210> 3371
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3371
gacugcacuc accucggaac 20

<210> 3372
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3372
ggcaacaggg uccgguuccg 20

<210> 3373
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3373
ugacgagguu ggggugucc 20

<210> 3374
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3374
uaggcuuugc ccucauacau 20

<210> 3375
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3375
ugaagcauau cacuucugcu 20

<210> 3376
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3376
aaucagaauu cuugguuuca 20

<210> 3377
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3377
gauguucuaa aaauccuuau 20

<210> 3378
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3378
agacaaaugc uuucugcggg 20

<210> 3379
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3379
uguuaccauc agagauugca 20

<210> 3380
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3380
cccgccaaag cguuuugcgc 20

<210> 3381
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3381
caguugugug gaaauaugau 20

<210> 3382
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3382
acgaugucca caaagaagac 20

<210> 3383
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3383
uuaggcgaca ggcauauuca 20

<210> 3384
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3384
gcugguuuaa agcacugaug 20

<210> 3385
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3385
ccaggaaacg uccucuuuau 20

<210> 3386
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3386
ucagcccauu cccuauaaag 20

<210> 3387
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3387
agaaagcuuu cuguaucuca 20

<210> 3388
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3388
acuuauuaaa uaaguaugga 20

<210> 3389
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3389
auuggauugc acccaggaau 20

<210> 3390
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3390
ugcuuucaga gccaauuccu 20

<210> 3391
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3391
uucugccccu ugguccaaaa 20

<210> 3392
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3392
caaaugguga gcugagggac 20

<210> 3393
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3393
ccuuuagcuu ccaccacucu 20

<210> 3394
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3394
aggucaaccu aguuuaaaua 20

<210> 3395
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3395
uugguugccu gucuucuuug 20

<210> 3396
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3396
agaaauccga gagugagccc 20

<210> 3397
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3397
acugcaaccu uccgcccgcc 20

<210> 3398
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3398
aucgauugaa cccaggcggg 20

<210> 3399
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3399
uaggcgacag gcauauucau   20

<210> 3400
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3400
ggcguguucc aggaagagca   20

<210> 3401
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3401
caagcacacg cucaccucga   20

<210> 3402
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3402
uuuauuauua uaugcaucau   20

<210> 3403
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3403
aucucagggu ucuugccuug   20

<210> 3404
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3404
cuuauuuaau aaguuuuaca   20

<210> 3405
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3405
ggcaaccaau uucuaacauc 20

<210> 3406
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3406
agaagcagug gaggguaaau 20

<210> 3407
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3407
aucacagaag ccaucuaaac 20

<210> 3408
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3408
gcuggcuugg cccagggugg 20

<210> 3409
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3409
uuuagcaaug uuuacugggu 20

<210> 3410
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3410
cuguuuguuc agauucgugu 20

<210> 3411
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3411
acugagaaaa cugcagaagc 20

<210> 3412
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3412
uaaauuaauu aaaauuggcc 20

<210> 3413
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3413
ucuccaggug cccugcaacg 20

<210> 3414
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3414
uucccacugg cccacguugc 20

<210> 3415
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3415
ucgcuuagca uaugugguug 20

<210> 3416
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3416
gaugcuucug gaacucaagg 20

<210> 3417
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3417
cagcaugugc caagcccucg 20

<210> 3418
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3418
ucacaacaac uucggccucc 20

<210> 3419
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3419
aucaucgcag aagguugcau 20

<210> 3420
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3420
ggccuuuaac agcacuugaa 20

<210> 3421
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3421
cgaggcgggc aaaccacuug 20

<210> 3422
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3422
ucugaagggc ccugucaguu 20

<210> 3423
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3423
agaaauaucu cagccucuaa 20

<210> 3424
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3424
gaugcuggcu uggcccaggg 20

<210> 3425
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3425
ccacggcaag uguggcaaca 20

<210> 3426
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3426
ccaagcacac gcucaccucg 20

<210> 3427
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3427
caucuucaca ccgcaauguu 20

<210> 3428
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3428
uuguguggaa auaugauugg 20

<210> 3429
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3429
cugcuuagau uuucuugcug 20

<210> 3430
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3430
cuccaggugc ccugcaacgu 20

<210> 3431
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3431
gaugcauccc auuguacagc 20

<210> 3432
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3432
gaagguuuca gcgaagacaa 20

<210> 3433
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3433
guagugccca caggaucugc 20

<210> 3434
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3434
ucagguuccc agcuguacaa 20

<210> 3435
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3435
uccaaaauug gauugcaccc 20

<210> 3436
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3436
cucccucugg uacaauguug 20

<210> 3437
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3437
caccuguggg caaagcauuc 20

<210> 3438
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3438
aggaccaucc agggcaaauu 20

<210> 3439
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3439
aguaacaaaa gucaucagcc 20

<210> 3440
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3440
cugcaaccuu ccgcccgccu 20

<210> 3441
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3441
acagaugcuu cuggaacuca 20

<210> 3442
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3442
gggcgggcgg aaggggaaga 20

<210> 3443
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3443
cccuguugcc acacuugccg 20

<210> 3444
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3444
cguuuccugg ccggacgcag 20

<210> 3445
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3445
cagccuuguc aacacuaggu 20

<210> 3446
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3446
ggaccaucca gggcaaauug 20

<210> 3447
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3447
guaacaaaag ucaucagccu 20

<210> 3448
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3448
augcauccca uuguacagcu 20

<210> 3449
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3449
ucucgcugug uugcucaggg 20

<210> 3450
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3450
acuggggaag uagugcccac 20

<210> 3451
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3451
gcugaagcag auacaccaca 20

<210> 3452
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3452
acugacagca cccaacauug 20

<210> 3453
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3453
ccaucuucac accgcaaugu 20

<210> 3454
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3454
uacaguggac acaaaaaaag 20

<210> 3455
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3455
gagucucgcu guguugcuca 20

<210> 3456
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3456
auuacugacc acaguuucaa 20

<210> 3457
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3457
augugcuaga ugauccauag 20

<210> 3458
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3458
uauccagaug gagaugcaua 20

<210> 3459
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3459
ucugagguac cauauccuua 20

<210> 3460
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3460
caggaaacgu ccucuuuaua 20

<210> 3461
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3461
aauugccuuc acuuaggcgu 20

<210> 3462
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3462
agagggagcc uuugaaacug 20

<210> 3463
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3463
gcgugugcuu ggcguguucc 20

<210> 3464
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3464
uugaaaauaa gaaguuggcu 20

<210> 3465
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3465
aucugcgggc agauuacgcg 20

<210> 3466
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3466
guaagcacug aauggccuac 20

<210> 3467
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3467
caggaccauc cagggcaaau 20

<210> 3468
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3468
auucugcccc uugguccaaa 20

<210> 3469
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3469
augcauaagg cccauagaca 20

<210> 3470
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3470
augcaucuuu cccaugucua 20

<210> 3471
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3471
uccugggugc aauccaauuu 20

<210> 3472
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3472
gccuuuccuc auggguugca 20

<210> 3473
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3473
agagcugcca uuugcggggc 20

<210> 3474
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3474
acaccccaau uugcccugga 20

<210> 3475
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3475
uuucgcugug ucugucuacc 20

<210> 3476
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3476
uuacaaaaau gauccgggcg 20

<210> 3477
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3477
cugcuuucag agccaauucc 20

<210> 3478
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3478
ccccacccuc aagagaagcu 20

<210> 3479
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3479
gguugcccag gggcuggggg 20

<210> 3480
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3480
guccacaaca uuguaccaga 20

<210> 3481
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3481
accugugggc aaagcauucu 20

<210> 3482
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3482
uuccaaguag cucggaucac 20

<210> 3483
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3483
caguguggug gcugcaggug 20

<210> 3484
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3484
auuuucccac auuauguaua 20

<210> 3485
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3485
gggaugagcu cuuaaaagaa 20

<210> 3486
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3486
uagaauuuaa uauuccaaac 20

<210> 3487
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3487
gagguuuccu gacucucagu 20

<210> 3488
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3488
aaucuaagca gacucuuuca 20

<210> 3489
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3489
uuugggagac caaaggcaag 20

<210> 3490
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3490
aauguaccuu gcaacccaug 20

<210> 3491
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3491
agugaaauau uucgauuaug 20

<210> 3492
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3492
cagaugcuuc uggaacucaa 20

<210> 3493
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3493
aguagugccc acaggaucug 20

<210> 3494
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3494
cuccugggcc cuuguuccac 20

<210> 3495
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3495
uaauaaguuu uacauggcac 20

<210> 3496
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3496
ucugcucaga auuucuccuc 20

<210> 3497
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3497
aggagggggc aaggaguaaa 20

<210> 3498
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3498
uagagcugcc auuugcgggg 20

<210> 3499
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3499
acaguuucaa aggcucccuc 20

<210> 3500
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3500
cgguagccac uaguuucaug 20

<210> 3501
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3501
ccuuacaccc caauuugccc 20

<210> 3502
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3502
aagaaauaca auaaauuagc 20

<210> 3503
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3503
cuaaaccuga guguaaaaaa 20

<210> 3504
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3504
ccagucccag cuucucuuga 20

<210> 3505
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3505
agaaacggaa gucugaggcu 20

<210> 3506
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3506
cccaggagaa gacaggccac 20

<210> 3507
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3507
aagucgaucc gugguugccc 20

<210> 3508
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3508
aagaaacgga agucugaggc 20

<210> 3509
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3509
gccacggcaa guguggcaac 20

<210> 3510
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3510
augacgaggu uggggguguc 20

<210> 3511
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3511
aaagccuaau caccucccaa 20

<210> 3512
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3512
ggucucccaa aaagaggauc 20

<210> 3513
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3513
uagguuugau ggccugcuuc 20

<210> 3514
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3514
cuuggcgcua uacuaggacu 20

<210> 3515
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3515
ggaaacgcua ccaucaaaua 20

<210> 3516
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3516
ccuacugugu gcccuacccu 20

<210> 3517
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3517
caucccucug gcccagggua 20

<210> 3518
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3518
uggagcaucc cucuggccca 20

<210> 3519
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3519
uguagaugcu cugcuuuuga 20

<210> 3520
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3520
guagucccag cuaccauggg 20

<210> 3521
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3521
gcuuggcgcu auacuaggac 20

<210> 3522
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3522
aaaaaaacaa gucugggaaa 20

<210> 3523
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3523
ugcccccucc cuccugaagc 20

<210> 3524
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3524
cuaaaauuac aaaaaugauc 20

<210> 3525
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3525
ucucucugcu cacuuccaua 20

<210> 3526
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3526
uccucuuuuu gggagaccaa 20

<210> 3527
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3527
ucacagaagc caucuaaaca 20

<210> 3528
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3528
aauguuuacu gggugggugg 20

<210> 3529
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3529
gcgcacaugu cucuuagccu 20

<210> 3530
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3530
ugcugguuua aagcacugau 20

<210> 3531
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3531
gccuuugguc ucccaaaaag 20

<210> 3532
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3532
cagugccaga uccucuuuuu 20

<210> 3533
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3533
cgggcagauu acgcguggca 20

<210> 3534
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3534
gagagucuua ggagaugacg 20

<210> 3535
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3535
aaggggcaag cuagugauac 20

<210> 3536
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3536
guggaguuug gccaggcugu 20

<210> 3537
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3537
cccacucuuc uccgacagcc   20

<210> 3538
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3538
auauggcacc uggacacaca   20

<210> 3539
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3539
gcauuugucu guagacagcc   20

<210> 3540
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3540
guugcccagg ggcuggggga   20

<210> 3541
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3541
agaugcuucu ggaacucaag   20

<210> 3542
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3542
gcuggauucu gacuacacug   20

<210> 3543
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3543
aaaaaaaaag ucauuguucu 20

<210> 3544
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3544
aggccugggg guggagcccg 20

<210> 3545
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3545
auuaauguag caaaguggac 20

<210> 3546
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3546
gcccugcaac gugggccagu 20

<210> 3547
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3547
uucucuuaca ccgcacauau 20

<210> 3548
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3548
aaaaauaggu uuaaaaauau 20

<210> 3549
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3549
cacaacaacu ucggccuccu 20

<210> 3550
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3550
gcaagguuuu auugagugga 20

<210> 3551
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3551
uaucucaggg uucuugccuu 20

<210> 3552
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3552
augucuggga aggccgggug 20

<210> 3553
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3553
ugcaucuuuc ccaugucuau 20

<210> 3554
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3554
ugugaaagug uuacuauuuu 20

<210> 3555
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3555
aagaaagaga auagauagua 20

<210> 3556
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3556
cuagccuaug agcuuuauga 20

<210> 3557
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3557
uccacgcugc ugaggcagug 20

<210> 3558
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3558
uuucuauggc cagcuucagg 20

<210> 3559
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3559
gggaaggaac gcucuauggu 20

<210> 3560
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3560
gggcagauua cgcguggcag 20

<210> 3561
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3561
cuugccauca uaaagcucau 20

<210> 3562
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3562
gaguuuugau aggcacagga 20

<210> 3563
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3563
gcaagaaaug gguccaaaau 20

<210> 3564
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3564
ggaugggaca gagcaucucc 20

<210> 3565
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3565
guuccgccgg uugauggccu 20

<210> 3566
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3566
uuuuuacacu cagguuuagu 20

<210> 3567
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3567
ugcccugcaa cgugggccag 20

<210> 3568
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3568
ugggccagug ggaagguuug 20

<210> 3569
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3569
gacaaaugcu uucugcggga 20

<210> 3570
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3570
cagauuacgc guggcagggg 20

<210> 3571
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3571
gcccugcagg aacuggcucc 20

<210> 3572
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3572
ucuuuagcag guagaguacc 20

<210> 3573
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3573
caccuaccaa gcccgacucc 20

<210> 3574
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3574
cuccuggagu cgggcuuggu 20

<210> 3575
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3575
gaugcuuuuc uccuggaguc 20

<210> 3576
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3576
acugaccuuc cuagguuuga 20

<210> 3577
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3577
gcaggccauc aaaccuagga 20

<210> 3578
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3578
cucaucccug acuaucugcu 20

<210> 3579
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3579
gugggccagu gggaagguuu 20

<210> 3580
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3580
agaaucgauu gaacccaggc 20

<210> 3581
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3581
acguccucuu uauagggaau 20

<210> 3582
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3582
cuauuuggca auuuauacaa 20

<210> 3583
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3583
caaaaaucag cugggcuuug 20

<210> 3584
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3584
ggcugugagg caguuucuga 20

<210> 3585
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3585
cguacaaaag gggccgggcg 20

<210> 3586
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3586
cuucuuauuu ucaaauccaa 20

<210> 3587
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3587
cguuccgccg guugauggcc 20

<210> 3588
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3588
acuacuacca cauuggugac 20

<210> 3589
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3589
cacaaggggc uugaggaccc 20

<210> 3590
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3590
uuauagggaa ugggcugagc 20

<210> 3591
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3591
cuuuagcagg uagaguaccu 20

<210> 3592
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3592
ccuagacacu gccguggguu 20

<210> 3593
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3593
gcuguggggc uccaaaccca 20

<210> 3594
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3594
cauagcgggu gaguaaccag 20

<210> 3595
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3595
cucuuagccu aggaagauuc 20

<210> 3596
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3596
uaaagaaauu gccuucacuu 20

<210> 3597
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3597
uucauccaac gccuaaguga 20

<210> 3598
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3598
uggcuggauu cugacuacac 20

<210> 3599
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3599
cuacuaccac auuggugacu 20

<210> 3600
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3600
uacuucgaug ggcuaugcag 20

<210> 3601
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3601
uguccaggug ccauauuuga 20

<210> 3602
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3602
ugcauaaggc ccauagacau 20

<210> 3603
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3603
gcccaggggc ugggggaggg 20

<210> 3604
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3604
accuugcaac ccaugaggaa 20

<210> 3605
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3605
auuacgcgug gcaggggugg 20

<210> 3606
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3606
ugugugguu ggggugggagu 20

<210> 3607
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3607
aucauaauac aucucagagg 20

<210> 3608
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3608
cuaccauccu auggccacca 20

<210> 3609
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3609
aaccucuuug gaaaacuauu 20

<210> 3610
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3610
ccccuuguga gcagagagug 20

<210> 3611
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3611
caugaaccuu gagauaagug 20

<210> 3612
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3612
cagaaaaacu ucacacugcu 20

<210> 3613
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3613
ggcccauuuc aggagagaaa 20

<210> 3614
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3614
uuaaagcacu gauggggugc 20

<210> 3615
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3615
gcauauucug gaaaacuuuu 20

<210> 3616
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3616
cuggagcauc ccucuggccc 20

<210> 3617
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3617
cucccccuc ccccagcccc 20

<210> 3618
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3618
ucccccucc cccagccccu 20

<210> 3619
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3619
uccgugguug cccaggggcu 20

<210> 3620
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3620
auccgugguu gcccaggggc 20

<210> 3621
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3621
cgacaaaaga cagauuaaug 20

<210> 3622
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3622
aagauuagac ugaccuuccu 20

<210> 3623
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3623
cuugcugagg aaagaggagg 20

<210> 3624
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3624
gcagagagag aaggaacgac 20

<210> 3625
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3625
cucugcucac aaggggcuug 20

<210> 3626
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3626
gacaaaagac agauuaauga 20

<210> 3627
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3627
aaguaugcaa ugaaugucaa 20

<210> 3628
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3628
ccccagcccc ugggcaacca 20

<210> 3629
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3629
guguuacuau uuuaggcgac 20

<210> 3630
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3630
aaagcagagc aucuacaucg 20

<210> 3631
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3631
gggucuuacu cuugucgccc 20

<210> 3632
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3632
uaaaacuuau uaaauaagua 20

<210> 3633
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3633
aucuguggggc aagaaaaagg 20

<210> 3634
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3634
gaguaccugg gagagagggu 20

<210> 3635
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3635
ccucacucuc ugcucacaag 20

<210> 3636
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3636
agcugggaac cugaagacaa 20

<210> 3637
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3637
gcgggcagau uacgcguggc 20

<210> 3638
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3638
aacacaagga aguagggaac 20

<210> 3639
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3639
cucaccagac ccaaaucugc 20

<210> 3640
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3640
gaagggagau gcuuuucucc 20

<210> 3641
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3641
aaauggaguu uugguggugu 20

<210> 3642
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3642
ugaagcaggc caucaaaccu 20

<210> 3643
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3643
agguuugaug gccugcuuca 20

<210> 3644
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3644
caccucuucu ucccugaagc 20

<210> 3645
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3645
acagugccag auccucuuuu 20

<210> 3646
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3646
cuguucauca agagaugcaa 20

<210> 3647
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3647
ggcuggggga ggggggagac 20

<210> 3648
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3648
auaaucugug ggcaagaaaa 20

<210> 3649
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3649
uuauuauuau augcaucaua 20

<210> 3650
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3650
uaaaccuauu uuuauagaga 20

<210> 3651
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3651
aucugcuggc accuugaucg 20

<210> 3652
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3652
uuguuucuau ggccagcuuc   20

<210> 3653
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3653
gaggugagug cagucauccg   20

<210> 3654
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3654
aaaagcagag caucuacauc   20

<210> 3655
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3655
caagcuagug auacuggagg   20

<210> 3656
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3656
aggauagagc ugccauuugc   20

<210> 3657
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3657
agauuacgcg uggcaggggu   20

<210> 3658
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3658
aggugagugc agucauccga 20

<210> 3659
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3659
ccuagagugg uggaagcuaa 20

<210> 3660
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3660
cgauagacgc cggcagcccc 20

<210> 3661
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3661
ccccgcugcu caaaccucug 20

<210> 3662
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3662
acuuuuccuc acuuaucuca 20

<210> 3663
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3663
aaucagcugg gcuuuguggc 20

<210> 3664
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3664
gccaguccca gcuucucuug 20

<210> 3665
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3665
agggggggaga cagggagaau 20

<210> 3666
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3666
gugugugugu uggggugggag 20

<210> 3667
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3667
gggaggauca ugagaguugg 20

<210> 3668
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3668
aaguguccuu caaggggguca 20

<210> 3669
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3669
uaccauccua uggccaccag 20

<210> 3670
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3670
ccuaccaucc uauggccacc 20

<210> 3671
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3671
ccagcuacca ugggaggcug 20

<210> 3672
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3672
cugauucuuc cgauacccca 20

<210> 3673
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3673
cgugguugcc caggggcugg 20

<210> 3674
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3674
gaggauagag cugccauuug 20

<210> 3675
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3675
agucugaggc uggggcaacu 20

<210> 3676
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3676
agaugcuuuu cuccuggagu 20

<210> 3677
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3677
cccaugguga guacuucgau 20

<210> 3678
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3678
caacaauuaa ugagaaagua 20

<210> 3679
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3679
caauuugccc uggauggucc 20

<210> 3680
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3680
cguaacauac ccaguaccac 20

<210> 3681
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3681
ucuugcugag gaaagaggag 20

<210> 3682
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3682
gguccacaac auuguaccag 20

<210> 3683
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3683
ucauaauaca ucucagaggu 20

<210> 3684
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3684
agggaugagc ucuuaaaaga 20

<210> 3685
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3685
cccaggguag ggcacacagu 20

<210> 3686
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3686
uacagacaaa ugcuuucugc 20

<210> 3687
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3687
uaaagcgcgc cuuuccucau 20

<210> 3688
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3688
aguggcccuu uuggaccaag 20

<210> 3689
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3689
ccucacugag aaggugaugu 20

<210> 3690
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3690
ggagaaaaca caaggaagua 20

<210> 3691
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3691
aagcuaguga uacuggaggg 20

<210> 3692
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3692
cguugagagg agugcgccgg 20

<210> 3693
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3693
ucugggaaau ggaguuuugg 20

<210> 3694
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3694
uugcccaggg gcuguggggag 20

<210> 3695
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3695
ggggcgaaug uuuacagcug 20

<210> 3696
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3696
ucaaaauguc ugggaaggcc 20

<210> 3697
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3697
uggcccauuu caggagagaa 20

<210> 3698
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3698
uucucaguau uuggaaagac   20

<210> 3699
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3699
gggugggggag gucacagaac   20

<210> 3700
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3700
uucuggacag uucauuucaa   20

<210> 3701
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3701
agaaagaagg aaauugcuuc   20

<210> 3702
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3702
gcaagguggu cuaaccucuu   20

<210> 3703
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3703
uuccgccggu ugauggccug   20

<210> 3704
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3704
gcccauggug aguacuucga 20

<210> 3705
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3705
ggggcaaaca uuguguauga 20

<210> 3706
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3706
uaaguauauu uacagauuug 20

<210> 3707
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3707
ccgugguugc ccaggggcug 20

<210> 3708
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3708
aaucugcccg cagauccugu 20

<210> 3709
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3709
acacaaggaa guagggaaca 20

<210> 3710
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3710
gccaggcugu cggagaagag 20

<210> 3711
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3711
uuaauguagc aaaguggaca 20

<210> 3712
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3712
ugcaacgugg gccaguggga 20

<210> 3713
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3713
agcuccccaa accuucccac 20

<210> 3714
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3714
agaguggccc uuuuggacca 20

<210> 3715
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3715
acuacauuaa uguagcaaag 20

<210> 3716
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3716
ugacuagucc caugugguau 20

<210> 3717
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3717
gaugcuauua auaauucugu 20

<210> 3718
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3718
cugccucggg cuccaccccc 20

<210> 3719
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3719
gguugauggc cuggggcugc 20

<210> 3720
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3720
uaguaagaug uggggccuuu 20

<210> 3721
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3721
caacuccuga auagcacauu 20

<210> 3722
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3722
cguuaaucca uauuuaaacu 20

<210> 3723
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3723
gcuggggggag gggggagaca 20

<210> 3724
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3724
agaagguuuc agcgaagaca 20

<210> 3725
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3725
gaaacggaag ucugaggcug 20

<210> 3726
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3726
ucuacgggaa gauauccugu 20

<210> 3727
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3727
gaaaaaaaaa aaaacaaguc 20

<210> 3728
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3728
agaaaaacuu cacacugcua 20

<210> 3729
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3729
uucuugcuga ggaaagagga 20

<210> 3730
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3730
caggaauugg cucugaaagc 20

<210> 3731
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3731
caaaagcaga gcaucuacau 20

<210> 3732
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3732
cccgcugcuc aaaccucugg 20

<210> 3733
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3733
cacacuugcc guggccagcc 20

<210> 3734
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3734
accuauuuuu auagagaugg 20

<210> 3735
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3735
aggagggagg gggcaggagc 20

<210> 3736
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3736
gucgauccgu gguugcccag 20

<210> 3737
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3737
caaguggcug gacgugcaga 20

<210> 3738
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3738
ggauuucucu ucuuugugau 20

<210> 3739
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3739
gcaauuaggg ucuaguuggc 20

<210> 3740
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3740
ggggggagac agggagaaug 20

<210> 3741
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3741
agaggguggg gccucaaagc 20

<210> 3742
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3742
ccaucccacu gccugcuuug 20

<210> 3743
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3743
aagcaggcag ugggauggag 20

<210> 3744
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3744
ccccagaggu uugagcagcg   20

<210> 3745
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3745
cagggcaugc aagggaggug   20

<210> 3746
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3746
uuuuguucgu uauagaauuu   20

<210> 3747
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3747
aaauaugauu ggaggaucaa   20

<210> 3748
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3748
cugcugguuu aaagcacuga   20

<210> 3749
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3749
gauuuucuug cugaggaaag   20

<210> 3750
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3750
cauuugucug uagacagccu 20

<210> 3751
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3751
auccgaggga gagaagaugc 20

<210> 3752
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3752
ccaacauugc ggugugaaga 20

<210> 3753
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3753
guaguaagau gugggggccuu 20

<210> 3754
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3754
ucaacuccug aauagcacau 20

<210> 3755
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3755
agaaaauaaa uuaaaaagca 20

<210> 3756
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3756
ccaaaggcaa gggguguugg 20

<210> 3757
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3757
uugauguuga ccuaacugac 20

<210> 3758
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3758
ccuuccgccc gccccgcaaa 20

<210> 3759
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3759
gcugccauuu gcggggcggg 20

<210> 3760
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3760
ggauagagcu gccauuugcg 20

<210> 3761
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3761
agcgaggaac aucacacacu 20

<210> 3762
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3762
aauaugauug gaggaucaaa 20

<210> 3763
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3763
auugaaccca ggcgggcgga 20

<210> 3764
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3764
aagucugagg cuggggcaac 20

<210> 3765
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3765
gauuacgcgu ggcaggggug 20

<210> 3766
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3766
uaaucugccc gcagauccug 20

<210> 3767
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3767
auagauagua uggaaaauua 20

<210> 3768
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3768
uggagaggag agaaagcccc 20

<210> 3769
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3769
agaggagaga aagccccugg 20

<210> 3770
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3770
gggcuaugca ggggcugcag 20

<210> 3771
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3771
ccagggcaaa uuggggugua 20

<210> 3772
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3772
cgugggccag ugggaagguu 20

<210> 3773
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3773
uuggugauua aaucauugug 20

<210> 3774
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3774
ugucucuugc uagcucaaag 20

<210> 3775
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3775
gggcaagcua gugauacugg 20

<210> 3776
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3776
cuucaauuag gaaaaaauaa 20

<210> 3777
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3777
uagaaaauaa auuaaaaagc 20

<210> 3778
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3778
accuacugug ugcccuaccc 20

<210> 3779
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3779
gaguggcccu uuuggaccaa 20

<210> 3780
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3780
auaauaaagu guccuucaag 20

<210> 3781
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3781
cuccaccguc aauagcauuc 20

<210> 3782
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3782
auguugcugg ugggggugca 20

<210> 3783
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3783
guacuucgau gggcuaugca 20

<210> 3784
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3784
ccccagccau gcacaaagau 20

<210> 3785
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3785
aguaccuggg agagagggug 20

<210> 3786
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3786
guuuugauag gcacaggaug 20

<210> 3787
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3787
ucuguaacac acgccugcug 20

<210> 3788
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3788
aauagcaaag ugguuaaagg 20

<210> 3789
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3789
uaucaucaga aaagaaagaa 20

<210> 3790
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3790
gaauuuaaau uaauuaaaau 20

<210> 3791
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3791
cauauauuag cagaaacuga 20

<210> 3792
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3792
gguggggagg ucacagaaca 20

<210> 3793
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3793
acaaaugcuu ucugcgggag 20

<210> 3794
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3794
agggccucgu gggccaugug 20

<210> 3795
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3795
ccugcgcaaa acgcuuuggc 20

<210> 3796
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3796
ccgcuccccc accccacgac 20

<210> 3797
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3797
uaaguaccau auacauaaug 20

<210> 3798
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3798
gugugguggg ugggaguggg 20

<210> 3799
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3799
aagaaaaagg uggacugaaa 20

<210> 3800
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3800
cguuuuuuaa uggauccaug 20

<210> 3801
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3801
aauuugcccu ggaugguccu 20

<210> 3802
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3802
ggcuggauuc ugacuacacu 20

<210> 3803
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3803
cucuccugcg caaaacgcuu 20

<210> 3804
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3804
aucucggcuc acaacaacuu 20

<210> 3805
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3805
uuuugauagg cacaggaugg 20

<210> 3806
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3806
aaaguggaca gggcagggag 20

<210> 3807
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3807
aagaggugaa aggaauucga 20

<210> 3808
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3808
agaccaaagg caaggggugu 20

<210> 3809
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3809
aagguugcau uggacacugc 20

<210> 3810
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3810
accacacugc ugucucuccu 20

<210> 3811
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3811
aauuaauauc guugauaaau 20

<210> 3812
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3812
augcuauuaa uaauucuguu 20

<210> 3813
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3813
agggcaccau ccagccuguc 20

<210> 3814
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3814
ucauaggcua gugugugugu 20

<210> 3815
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3815
gaagauggaa ggucaguguu 20

<210> 3816
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3816
cuggggugg agcccgaggc 20

<210> 3817
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3817
uucugucccu gugagaaggc 20

<210> 3818
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3818
guaugucacu gaagagaguc 20

<210> 3819
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3819
agucgauccg ugguugccca 20

<210> 3820
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3820
cggcggaacg agguggaguu 20

<210> 3821
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3821
uuguuuagaa auuauuuuau 20

<210> 3822
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3822
gaggagaaau ucugagcaga 20

<210> 3823
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3823
aaacauugug uaugacggcg 20

<210> 3824
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3824
uggagaaaac acaaggaagu 20

<210> 3825
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3825
ugaagaugga aggucagugu 20

<210> 3826
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3826
uuuaaaaaua uuggugugg 20

<210> 3827
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3827
uagaaggcuc cucacagaac 20

<210> 3828
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3828
gguguaaccc aggaccaucc 20

<210> 3829
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3829
uuucuugcug aggaaagagg 20

<210> 3830
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3830
ucucuucuuu gugauuggca 20

<210> 3831
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3831
aaucgucuga uugcuggaga 20

<210> 3832
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3832
cauugcggug ugaagaugga 20

<210> 3833
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3833
ugucgugggg ugggggagcg 20

<210> 3834
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3834
gcaagcuagu gauacuggag 20

<210> 3835
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3835
aguuuugaua ggcacaggau 20

<210> 3836
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3836
ucaccauggg caugguccag 20

<210> 3837
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3837
ggguacuuga gaauugagag 20

<210> 3838
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3838
uuucacuauu uuuccuuuag 20

<210> 3839
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3839
ggaacaggga cugguccuuu 20

<210> 3840
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3840
uguguugggu gggagugggu 20

<210> 3841
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3841
acaagcggcu agaugucgag 20

<210> 3842
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3842
gugaguaacc aguggaacaa 20

<210> 3843
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3843
uucauccaga uguuagaaau 20

<210> 3844
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3844
cgucugauug cuggagaggg 20

<210> 3845
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3845
gagggggggag acagggagaa 20

<210> 3846
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3846
uccugcgcaa aacgcuuugg 20

<210> 3847
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3847
aguuuaccaa ucuuugugca 20

<210> 3848
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3848
gcaucccucu ggcccagggu 20

<210> 3849
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3849
guguugggug ggagugggug 20

<210> 3850
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3850
gaggccccac ccucucuccc 20

<210> 3851
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3851
ucuaucgugc gcucuuccgc 20

<210> 3852
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3852
ucauuaauug uugcaacuua 20

<210> 3853
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3853
ccaauccaag agacuaaacu 20

<210> 3854
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3854
gaacagggac ugguccuuuu 20

<210> 3855
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3855
gagacaaguc ucucuuuagc 20

<210> 3856
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3856
ggugaguaac caguggaaca 20

<210> 3857
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3857
ugacccuuuc ucuccugaaa 20

<210> 3858
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3858
ugagaaagua uggcauauuc 20

<210> 3859
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3859
auuugucugu agacagccug   20

<210> 3860
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3860
aaggggggagc ccagacaggc   20

<210> 3861
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3861
cugaggcugg ggcaacuggg   20

<210> 3862
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3862
gacggaggca agagacaguc   20

<210> 3863
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3863
aagggcuguu uuuguuucua   20

<210> 3864
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3864
gaacaacagu ugucuuugug   20

<210> 3865
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3865
aauccaacag aaaacaggau 20

<210> 3866
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3866
cugacucaau uauaagacau 20

<210> 3867
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3867
ccaugggaag gaacgcucua 20

<210> 3868
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3868
cgcaggagag uggcggcauc 20

<210> 3869
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3869
ggcaagcuag ugauacugga 20

<210> 3870
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3870
uuuaguuugc cgucuguagg 20

<210> 3871
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3871
auggaguuuu gguggguguag 20

<210> 3872
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3872
uguagcaaag uggacagggc 20

<210> 3873
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3873
aaauaaugau uaucuuuuuu 20

<210> 3874
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3874
gacccuuucu cuccugaaau 20

<210> 3875
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3875
gugaaagaaa cggaagucug 20

<210> 3876
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3876
gggugggggu gugaaagaaa 20

<210> 3877
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3877
gcaucauagg gguguggaaa 20

<210> 3878
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3878
aucuguguaa aagagacucc 20

<210> 3879
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3879
ggcuaugcag gggcugcagu 20

<210> 3880
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3880
aagucuggga aauggaguuu 20

<210> 3881
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3881
ggaauucgau ggcccauuuc 20

<210> 3882
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3882
uuaucuuacu ugcuuaacgc 20

<210> 3883
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3883
gcugugaggc aguuucugaa 20

<210> 3884
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3884
cggaugucuc auguaacaug 20

<210> 3885
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3885
gggcaccauc cagccugucu 20

<210> 3886
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3886
uuauaugcau cauaggggug 20

<210> 3887
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3887
cuaccaucaa auauggcacc 20

<210> 3888
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3888
uuauuguauu ucuuguagag 20

<210> 3889
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3889
ugcccccuag cagauaguca 20

<210> 3890
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3890
uuucugcggg aggggagucu 20

<210> 3891
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3891
uggcgggucc cuguugccag 20

<210> 3892
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3892
uuuguucaaa augucuggga 20

<210> 3893
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3893
uggcuggggg cugcuagucc 20

<210> 3894
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3894
ccagcucgau uucaacacug 20

<210> 3895
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3895
caaacuccac cucguuccgc 20

<210> 3896
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3896
ucuguguaaa agagacucca 20

<210> 3897
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3897
guguaaccca ggaccaucca 20

<210> 3898
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3898
uaaauuaaaa agcagggaga 20

<210> 3899
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3899
gcucuuaaaa gaagggacca 20

<210> 3900
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3900
ugugcccuac ccugggccag 20

<210> 3901
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3901
auuauaagac auaggaagcc 20

<210> 3902
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3902
aaugaauuug agacgccuag 20

<210> 3903
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3903
aaacacuugg agacagagcg 20

<210> 3904
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3904
gucugcccaa ugugcuauuc 20

<210> 3905
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3905
ucaucccuga cuaucugcua   20

<210> 3906
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3906
agauaagaaa uagagaaaag   20

<210> 3907
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3907
aagaaguugg cugggugcag   20

<210> 3908
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3908
gcaaacauug uguaugacgg   20

<210> 3909
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3909
ggcccacguu gcagggcacc   20

<210> 3910
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3910
accuagaguc caaggaagag   20

<210> 3911
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3911
gucuagaacu acaugccaca 20

<210> 3912
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3912
uuuucuccug gagucgggcu 20

<210> 3913
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3913
auuccuuccc uccggguaua 20

<210> 3914
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3914
caaacauugu guaugacggc 20

<210> 3915
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3915
cuuucauaac caaauccacu 20

<210> 3916
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3916
ugucacagca ggaaauuuca 20

<210> 3917
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3917
ccucagcuca ccauuugcuc 20

<210> 3918
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3918
ggugggagga ucaugagagu 20

<210> 3919
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3919
ggacucagcc ccuggcaaca 20

<210> 3920
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3920
uggggccuca aagcaggcag 20

<210> 3921
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3921
cgugggggugg gggagcgggg 20

<210> 3922
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3922
uucuauggcc agcuucagga 20

<210> 3923
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3923
aguaagauau uuuaauacga 20

<210> 3924
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3924
acugaaaagg ccagagcaaa 20

<210> 3925
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3925
cugguggcca uaggauggua 20

<210> 3926
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3926
gagaaaagag gccaggugca 20

<210> 3927
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3927
ucuuuuaguu ugccgucugu 20

<210> 3928
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3928
ugguacuuau acuuugauug 20

<210> 3929
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3929
cuuucugcgg gaggggaguc 20

<210> 3930
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3930
uaaugaauuu gagacgccua 20

<210> 3931
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3931
ucacugccuc agcagcgugg 20

<210> 3932
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3932
aaaaaaagug guugcagaac 20

<210> 3933
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3933
ucugggaagg ccgggugugg 20

<210> 3934
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3934
ccagccaaaa auagccagug 20

<210> 3935
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3935
ccacacuggc uauuuuuggc 20

<210> 3936
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3936
caauuagggu cuaguuggcu 20

<210> 3937
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3937
ugccagcucg auuucaacac 20

<210> 3938
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3938
gagcuagcaa gagacaucua 20

<210> 3939
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3939
acuuuuuuug uguccacugu 20

<210> 3940
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3940
uuaaauagca aagugguuaa 20

<210> 3941
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3941
ugaggaaaga ggagggggca 20

<210> 3942
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3942
ggggccucaa agcaggcagu 20

<210> 3943
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3943
auagcaaagu gguuaaagga 20

<210> 3944
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3944
auuguauuuc uuguagagag 20

<210> 3945
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3945
agggcuuccc uaagcccaaa 20

<210> 3946
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3946
caggcugucg gagaagagug 20

<210> 3947
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3947
uucaaaaugu cugggaaggc 20

<210> 3948
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3948
ugauguugac cuaacugaca 20

<210> 3949
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3949
aaucuaagau uggugacugg 20

<210> 3950
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3950
ccauuugcgg ggcgggcgga 20

<210> 3951
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3951
aguacuucga ugggcuaugc 20

<210> 3952
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3952
gguuguuaga cucagcacug 20

<210> 3953
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3953
ccucucguga aagagaaaga 20

<210> 3954
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3954
agguagagua ccugggagag 20

<210> 3955
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3955
agcuagcaag agacaucuac 20

<210> 3956
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3956
gacagcagug ugguggcugc 20

<210> 3957
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3957
ugagacaggc cgaucacuug 20

<210> 3958
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3958
ugacuacuuu aagaugcuuu 20

<210> 3959
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3959
uugcccccua gcagauaguc 20

<210> 3960
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3960
aacguccucu uuauagggaa 20

<210> 3961
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3961
cucaguuucc uuugugucc 20

<210> 3962
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3962
uuccuuucaa gugcuguuaa 20

<210> 3963
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3963
caaaacucca agacccuagc 20

<210> 3964
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3964
ccaggcuguc ggagaagagu 20

<210> 3965
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3965
ggguggcccu gaaucuuccu 20

<210> 3966
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3966
agccucacuc ucugcucaca 20

<210> 3967
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3967
uauuuccauu uuuuacacuc 20

<210> 3968
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3968
uuuuuguuau uacuucucuu 20

<210> 3969
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3969
gauggcuuuc caguucugug 20

<210> 3970
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3970
uucuucgcau cgcgggggug 20

<210> 3971
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3971
acgauguucu cugcucuucg 20

<210> 3972
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3972
cuucaucugu uuccauggga 20

<210> 3973
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3973
ucaacacugg gguguccccu 20

<210> 3974
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3974
gggucuaugc uauguuaccc 20

<210> 3975
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3975
agaguaccug ggagagaggg 20

<210> 3976
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3976
aggagccuuc uaaaguucaa 20

<210> 3977
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3977
gcuucaauua ggaaaaaaua 20

<210> 3978
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3978
auaaaucuaa gauuggugac 20

<210> 3979
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3979
acucaagggg gagcccagac 20

<210> 3980
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3980
guggaacuug aggauagacg 20

<210> 3981
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3981
guagcaaagu ggacagggca 20

<210> 3982
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3982
aggagaaauu cugagcagau 20

<210> 3983
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3983
aauaauaaag uguccuucaa 20

<210> 3984
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3984
uuggcggguc ccuguugcca 20

<210> 3985
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3985
aacaguuguc uuugugugga 20

<210> 3986
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3986
cuacagacaa augcuuucug 20

<210> 3987
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3987
uguaggcuug gcgcuauacu 20

<210> 3988
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3988
uuguggcaca gugagggaac 20

<210> 3989
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3989
cuuaaaguag ucagaguuac 20

<210> 3990
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3990
cuuguagucc cagcuaccau 20

<210> 3991
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3991
gagcgaggaa caucacacac 20

<210> 3992
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3992
cuccagggag cuagugaaac 20

<210> 3993
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3993
cuccuguuuc ucaagcagau 20

<210> 3994
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3994
ggcgcgcuuu agauacacac 20

<210> 3995
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3995
cauaggcuag ugugugguu 20

<210> 3996
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3996
uagaacuaca ugccacaggg 20

<210> 3997
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3997
caucucaggg caugcaaggg 20

<210> 3998
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3998
cggaaugcua uugacggugg 20

<210> 3999
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3999
uucgcaucgc gggggugggg 20

<210> 4000
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4000
aucagcaauu agggucuagu 20

<210> 4001
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4001
auuugcgggg cgggcggaag 20

<210> 4002
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4002
gguggaagcu aaaggaagau 20

<210> 4003
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4003
acuucuucgc aucgcggggg 20

<210> 4004
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4004
cuccucauua cagugaaaua 20

<210> 4005
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4005
ggagaaaagc aucucccuuc 20

<210> 4006
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4006
uggugauuaa aucauugugu 20

<210> 4007
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4007
uuuuauaaau gugaugauaa 20

<210> 4008
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4008
auuuaaauuc caauaccaca 20

<210> 4009
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4009
ugauuguguc cucugucccc 20

<210> 4010
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4010
auaaugaauu ugagacgccu 20

<210> 4011
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4011
ugagaaacau aaaucccgag 20

<210> 4012
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4012
gugcccuacc cugggccaga 20

<210> 4013
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4013
ugaaaugaac uguccagaac 20

<210> 4014
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4014
ccauagagcg uuccuuccca 20

<210> 4015
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4015
augucucaug uaacaugugg 20

<210> 4016
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4016
uauuauuaua ugcaucauag 20

<210> 4017
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4017
agagaaaaga ggccaggugc 20

<210> 4018
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4018
agcaauguuu acuggguggg 20

<210> 4019
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4019
caguguuggg aagaguccau 20

<210> 4020
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4020
ugggacgaca gguguaaccc   20

<210> 4021
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4021
uucaaagauu gagagggaau   20

<210> 4022
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4022
gggccagagg gaugcuccag   20

<210> 4023
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4023
cauuugcggg gcgggcggaa   20

<210> 4024
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4024
cacugcuagg guuaaaugaa   20

<210> 4025
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4025
aauacacaua gaaaaaugac   20

<210> 4026
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4026
agacccaucc uguuuucugu 20

<210> 4027
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4027
cuaugcuaug uuacccaggc 20

<210> 4028
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4028
uugcuggugg gggugcaagg 20

<210> 4029
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4029
cacugguuac ucacccgcua 20

<210> 4030
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4030
caccacacug cugucucucc 20

<210> 4031
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4031
gggacuaguc augacuacau 20

<210> 4032
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4032
uuauuagauu ccagugguac 20

<210> 4033
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4033
cuacuuagaa auauaccuug 20

<210> 4034
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4034
ucgaacaaua gacuuucaau 20

<210> 4035
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4035
gacagggaga auggggagcg 20

<210> 4036
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4036
ccaacaucac cuucucagug 20

<210> 4037
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4037
ccucaaagca ggcaguggga 20

<210> 4038
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4038
aucgggguau guuuacacaa 20

<210> 4039
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4039
uuucguacaa uacuggaggc 20

<210> 4040
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4040
uucgccccua gacacugccg 20

<210> 4041
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4041
ugcccugaga uggggacaag 20

<210> 4042
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4042
gggagcuagu gaaacaggaa 20

<210> 4043
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4043
aaucuuaaau caucuaauug 20

<210> 4044
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4044
aaauccaaca gaaaacagga 20

<210> 4045
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4045
auguaaacca guugucuguu 20

<210> 4046
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4046
accaaaucca cuuggcucaa 20

<210> 4047
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4047
aucgaacaau agacuuucaa 20

<210> 4048
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4048
aggcuagugu guguguuggg 20

<210> 4049
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4049
gggacucagc cccuggcaac 20

<210> 4050
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4050
uuuggcgggu cccuguugcc 20

<210> 4051
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4051
uuagcugagc guggcagcgc 20

<210> 4052
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4052
agucuagaac uacaugccac 20

<210> 4053
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4053
ugucgagagg agcacauugg 20

<210> 4054
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4054
ugugguagua guaagaugug 20

<210> 4055
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4055
acugcuaggg uuaaaugaaa 20

<210> 4056
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4056
aaaaaauccu aacagacaac 20

<210> 4057
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4057
uguggcacag ugagggaacu 20

<210> 4058
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4058
uaauuaaaau uggccgggcg 20

<210> 4059
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4059
ccaaaccgga augcuauuga 20

<210> 4060
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4060
ucuauuucuu aucuccugag 20

<210> 4061
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4061
ucugucccug ugagaaggca 20

<210> 4062
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4062
cucggcuuca ucuguuucca 20

<210> 4063
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4063
gagaguugga ggcugcagug 20

<210> 4064
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4064
uaaaagagaa accuugggcc 20

<210> 4065
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4065
uauuccuucc cuccggguau 20

<210> 4066
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4066
ccaagguaua uuucuaagua   20

<210> 4067
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4067
caaaaauagc caguguggcu   20

<210> 4068
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4068
acagggagaa uggggagcga   20

<210> 4069
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4069
aauauuugggu gugguggcac   20

<210> 4070
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4070
uuccuguuuc acuagcuccc   20

<210> 4071
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4071
aaguaccaua uacauaaugu   20

<210> 4072
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4072
aaauuaugaa ugauuaaaaa 20

<210> 4073
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4073
uucguacaau acuggaggcu 20

<210> 4074
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4074
auaaaagaga aaccuugggc 20

<210> 4075
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4075
uguuuuuuau uagauuccag 20

<210> 4076
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4076
ccuacuuaga aauauaccuu 20

<210> 4077
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4077
gcagagaaca ucgucucucc 20

<210> 4078
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4078
uguccccugg agcaucccuc 20

<210> 4079
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4079
cucuaaagau uugccaguuc 20

<210> 4080
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4080
uucucaagca gauuggaagc 20

<210> 4081
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4081
gguagaguac cugggagaga 20

<210> 4082
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4082
ccagggauga agcaggaagc 20

<210> 4083
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4083
ccaaacccac ggcagugucu 20

<210> 4084
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4084
caggagagac agcagugugg 20

<210> 4085
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4085
gccucacucu cugcucacaa 20

<210> 4086
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4086
gaaaaaugac aggaaaugac 20

<210> 4087
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4087
caagccacac uggcuauuuu 20

<210> 4088
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4088
ucggaugacu gcacucaccu 20

<210> 4089
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4089
aguagguugc caagccacac   20

<210> 4090
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4090
acucucuuca gugacauaca   20

<210> 4091
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4091
aaaagggcca cucugcugug   20

<210> 4092
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4092
auguuggagc aaagauucga   20

<210> 4093
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4093
caacaucacc uucucaguga   20

<210> 4094
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4094
uaauaauaaa guguccuuca   20

<210> 4095
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4095
aaaaaagugg uugcagaaca 20

<210> 4096
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4096
aauggaguuu ugguggugua 20

<210> 4097
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4097
uuaaaguagu cagaguuacu 20

<210> 4098
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4098
ggucuaauuu uaaaaugcuu 20

<210> 4099
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4099
uaaaugagaa aagcauaaca 20

<210> 4100
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4100
aauuaggguc uaguuggcug 20

<210> 4101
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4101
gggagcgagg gcuuaauguu 20

<210> 4102
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4102
ugucuuucgc uuagcauaug 20

<210> 4103
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4103
uuggagcaaa gauucgaagg 20

<210> 4104
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4104
uuaacacaau uagcugagcg 20

<210> 4105
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4105
uuguacgaaa uaaauuucug 20

<210> 4106
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4106
gaaagcaggc cucucuuccu 20

<210> 4107
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4107
caugagaugc auccacccug 20

<210> 4108
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4108
ucagcacugu ggaagaaaca 20

<210> 4109
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4109
cuucuucgca ucgcgggggu 20

<210> 4110
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4110
aaccagugga acaagggccc 20

<210> 4111
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4111
cuucccuccg gguauagggc 20

<210> 4112
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4112
aucccugacu aucugcuagg 20

<210> 4113
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4113
ucggcuucau cuguuuccau 20

<210> 4114
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4114
aggcaaagaa auucuaugga 20

<210> 4115
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4115
ccugguggcc auaggauggu 20

<210> 4116
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4116
cagcgcgugg ucccugccuc 20

<210> 4117
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4117
ugggggugga gcccgaggca 20

<210> 4118
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4118
gagaaaccuu gggccgggca 20

<210> 4119
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4119
cugacuacuu uaagaugcuu 20

<210> 4120
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4120
gauggauggc gaagccacuc 20

<210> 4121
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4121
gcuuuggugg uaaaaaauac 20

<210> 4122
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4122
cccaagguau auuucuaagu 20

<210> 4123
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4123
ggcuagugug uguguugggu 20

<210> 4124
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4124
ccucagccuc ccaugguagc 20

<210> 4125
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4125
gcagcgcgug gucccugccu 20

<210> 4126
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4126
uauuagauuc cagugguacu 20

<210> 4127
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4127
gaaaaccuag uuuagucucu 20

<210> 4128
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4128
cuggagucgg gcuugguagg 20

<210> 4129
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4129
auuaauuaaa auuggccggg 20

<210> 4130
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4130
agauucauuc auucauuccu 20

<210> 4131
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4131
uucacuuagg cguuggauga 20

<210> 4132
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4132
uuugaggcaa agaaauucua 20

<210> 4133
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4133
gagacagucu ggcacauuug 20

<210> 4134
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4134
cucagccucc caugguagcu 20

<210> 4135
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4135
cucccuugca ugcccugaga 20

<210> 4136
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4136
uuaauuaaaa uuggccgggc 20

<210> 4137
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4137
uagucaugac uagucccaug 20

<210> 4138
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4138
uagucacauu ucucaguauu 20

<210> 4139
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4139
ugaggagaca cugccacuga 20

<210> 4140
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4140
cugagcaaac cuagagucca 20

<210> 4141
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4141
agcuucagga gggaggggc 20

<210> 4142
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4142
aacguuucua ucaucgcaga 20

<210> 4143
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4143
uguaugacgg cggggcgcgg 20

<210> 4144
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4144
ugggccagag ggaugcucca 20

<210> 4145
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4145
auuagggucu aguuggcugg 20

<210> 4146
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4146
agaaaaauga caggaaauga 20

<210> 4147
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4147
gugugauauu ccuucccucc 20

<210> 4148
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4148
uuguguauga cggcggggcg 20

<210> 4149
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4149
ccaaucuuug ugcauggcug 20

<210> 4150
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4150
ugcaaaggaa aucagcaauu 20

<210> 4151
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4151
agaaagcccc ugguggccau 20

<210> 4152
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4152
gcuauuaaaa aggaugaggu 20

<210> 4153
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4153
uauggccagc uucaggaggg 20

<210> 4154
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4154
uuaucaguca uuuuuuguau 20

<210> 4155
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4155
ccauaggaug guagggauuu 20

<210> 4156
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4156
ccacugaagg acagaagcag 20

<210> 4157
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4157
aggguuuccu cacagcagag 20

<210> 4158
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4158
gccagcucga uuucaacacu   20

<210> 4159
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4159
aaguuccaca aagccucaca   20

<210> 4160
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4160
auuaucaguc auuuuuugua   20

<210> 4161
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4161
cuaucuccau gaccccuuga   20

<210> 4162
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4162
gacuacuuua agaugcuuug   20

<210> 4163
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4163
gacugguccu uuugggcuua   20

<210> 4164
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4164
augugguagu aguaagaugu 20

<210> 4165
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4165
uacauggccu uugagccaag 20

<210> 4166
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4166
caucaaccgg cggaacgagg 20

<210> 4167
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4167
ggacuggucc uuuugggcuu 20

<210> 4168
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4168
ugguguaucu gcuucagcau 20

<210> 4169
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4169
aaauauuggg uguggguggca 20

<210> 4170
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4170
gaaacauaaa ucccgagagg 20

<210> 4171
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4171
cuaccuccug cccaccucuc 20

<210> 4172
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4172
agaugucgag aggagcacau 20

<210> 4173
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4173
cucuguaaca cacgccugcu 20

<210> 4174
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4174
cugggccaga gggaugcucc 20

<210> 4175
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4175
aaaauagguu uaaaaauauu 20

<210> 4176
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4176
aaaccuuggg ccgggcaugg 20

<210> 4177
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4177
cagagcaaau ggugagcuga 20

<210> 4178
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4178
accuucauug cuacuugaga 20

<210> 4179
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4179
cuaguuuagu cucuuggauu 20

<210> 4180
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4180
agucuggcac auuuguggcu 20

<210> 4181
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4181
acauaugagc auuuccaguu 20

<210> 4182
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4182
cccuacuuag aaauauaccu 20

<210> 4183
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4183
auaugguacc ucagaacccc 20

<210> 4184
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4184
gaaacccuug uugucacagc 20

<210> 4185
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4185
ugguggaagc uaaaggaaga 20

<210> 4186
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4186
cauaugagca uuuccaguuu 20

<210> 4187
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4187
ucgccccuag acacugccgu 20

<210> 4188
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4188
caucccugac uaucugcuag 20

<210> 4189
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4189
gcaaaggaaa ucagcaauua 20

<210> 4190
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4190
ccagagcaaa uggugagcug 20

<210> 4191
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4191
uuuguuuugu ucaaaauguc 20

<210> 4192
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4192
guguccugcc cuauacccgg 20

<210> 4193
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4193
guagacagcc ugggguucug 20

<210> 4194
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4194
uaauuuuaug cuuuucuucu 20

<210> 4195
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4195
ccccaguguu gaaaucgagc 20

<210> 4196
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4196
ugggguuugc agaaugaccu 20

<210> 4197
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4197
ccuaaauccc uaccauccua 20

<210> 4198
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4198
caaacccacg gcagugucua 20

<210> 4199
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4199
caguggaagu guuaaguggc 20

<210> 4200
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4200
gugaugauaa aggcuuugug 20

<210> 4201
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4201
uauggguuuc uauaaucugu 20

<210> 4202
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4202
acugcugugg agaaaacaca 20

<210> 4203
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4203
ccccaucuca gggcaugcaa 20

<210> 4204
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4204
aaugugguag uaguaagaug 20

<210> 4205
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4205
uauuauuuca aagauugaga 20

<210> 4206
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4206
auauuauuuc aaagauugag 20

<210> 4207
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4207
aaacccacgg cagugucuag 20

<210> 4208
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4208
agggaugcuc caggggacag 20

<210> 4209
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4209
cagagguggg acucagcccc 20

<210> 4210
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4210
agcaacauau gacacaguuc 20

<210> 4211
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4211
agugaggcuu ccauuucaga 20

<210> 4212
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4212
uucagggaag aagaggugaa 20

<210> 4213
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4213
uuucaggaga gaaaggguca 20

<210> 4214
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4214
uccccaucuc agggcaugca 20

<210> 4215
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4215
agccccuggu ggccauagga 20

<210> 4216
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4216
gaaucgucug auugcuggag 20

<210> 4217
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4217
aagacauagg aagccaggug 20

<210> 4218
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4218
gccucucuuc cuuggacucu 20

<210> 4219
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4219
ggagcgaggg cuuaauguuu 20

<210> 4220
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4220
acauugcaua aaucuaagau 20

<210> 4221
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4221
gggagcccag acaggcugga 20

<210> 4222
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4222
aaacauaaau cccgagaggu 20

<210> 4223
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4223
ucuaccuccu gcccaccucu 20

<210> 4224
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4224
ggccaucaac cggcggaacg 20

<210> 4225
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4225
aggcguugag aggagugcgc 20

<210> 4226
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4226
uguccugccc uauacccgga 20

<210> 4227
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4227
augcuuuggu aaacauuucu 20

<210> 4228
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4228
gugggccaug ugaggcuuug 20

<210> 4229
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4229
ggcgggauaa ucacuugagc 20

<210> 4230
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4230
cuggugacaa uauaauucca 20

<210> 4231
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4231
ggccagcuuc aggagggagg 20

<210> 4232
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4232
uaggacuggg ccuucugaaa 20

<210> 4233
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4233
ucccuugcau gcccugagau 20

<210> 4234
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4234
gucccuugu ccccaucuca 20

<210> 4235
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4235
ugugugauau uccuucccuc 20

<210> 4236
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4236
cugcccuaua cccggaggga 20

<210> 4237
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4237
cuuaaaaucc aacagaaaac 20

<210> 4238
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4238
acauaggaag ccaggugcgg 20

<210> 4239
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4239
guggcagugg aaguguuaag 20

<210> 4240
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4240
cccuugcaug cccugagaug 20

<210> 4241
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4241
ggucccuug uccccaucuc 20

<210> 4242
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4242
auaaaucccg agaggugggc 20

<210> 4243
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4243
uaugagcauu uccaguuugg 20

<210> 4244
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4244
uauuuguaau acccccaaac 20

<210> 4245
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4245
gcccaggaga gacagcagug 20

<210> 4246
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4246
ucacuuuuua aauagcaaag 20

<210> 4247
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4247
ucugugcucu gcaaaugacc 20

<210> 4248
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4248
aggucauucu gcaaacccca 20

<210> 4249
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4249
uagguuuguc uauaauguac 20

<210> 4250
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4250
accuucucaa guagcaauga 20

<210> 4251
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4251
guauggguuu cuauaaucug 20

<210> 4252
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4252
uaccaaucuu ugugcauggc 20

<210> 4253
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4253
gacgugcaga aggcguugag 20

<210> 4254
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4254
cucacuuauc ucaagguuca 20

<210> 4255
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4255
uucaggagag aaagggucaa 20

<210> 4256
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4256
uaggacuucu ucgcaucgcg 20

<210> 4257
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4257
cugcucuucg uggacauuuc 20

<210> 4258
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4258
agaaauagag aaaagaggcc 20

<210> 4259
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4259
acugguuacu cacccgcuau 20

<210> 4260
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4260
aggacuucuu cgcaucgcgg 20

<210> 4261
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4261
caacacgaau cugaacaaac 20

<210> 4262
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4262
agaagugaua ugcuucaauu 20

<210> 4263
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4263
gauaaucacu ugagcugggg 20

<210> 4264
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4264
auaugagcau uuccaguuug 20

<210> 4265
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4265
cgggauaauc acuugagcug 20

<210> 4266
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4266
cgggagaauc gucugauugc 20

<210> 4267
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4267
ucaccaaagg agaagcaaca 20

<210> 4268
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4268
ggggaggagg augaucuguu 20

<210> 4269
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4269
cguuggauga agguucauuu 20

<210> 4270
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4270
aggucaauuc ugcccauagc 20

<210> 4271
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4271
auggccagcu ucaggaggga 20

<210> 4272
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4272
aaauuuauuu cguacaauac 20

<210> 4273
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4273
gaagagcgca cgauagacgc 20

<210> 4274
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4274
ccacugcuuc uguccuucag 20

<210> 4275
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4275
caaagaaauu cuauggacgg 20

<210> 4276
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4276
aaggaugagg ucgggugcag 20

<210> 4277
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4277
gaucaaaggg uaugaucuaa 20

<210> 4278
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4278
uuuugugucc acuguaggcu 20

<210> 4279
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4279
agggaaggaa uaucacacag 20

<210> 4280
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4280
cuaggacuuc uucgcaucgc 20

<210> 4281
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4281
accaaucuuu gugcauggcu 20

<210> 4282
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4282
uuggcgacaa cauauuguaa 20

<210> 4283
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4283
uggccagcuu caggagggag 20

<210> 4284
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4284
gggaggagga ugaucuguuu 20

<210> 4285
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4285
uagggaagcc cucacugaga 20

<210> 4286
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4286
aaggucaauu cugcccauag 20

<210> 4287
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4287
aucuaauugu ggcacaguga 20

<210> 4288
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4288
uacuggaggg gggcagcgcg 20

<210> 4289
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4289
caucuaauug uggcacagug 20

<210> 4290
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4290
gcucugaagc acuugaaaug 20

<210> 4291
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4291
cuaugucuua uaauugaguc 20

<210> 4292
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4292
uuuauuucgu acaauacugg 20

<210> 4293
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4293
aaucccgaga gggggcagg 20

<210> 4294
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4294
guauagcgcc aagccuacag 20

<210> 4295
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4295
aaccggaaug cuauugacgg 20

<210> 4296
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4296
uuguuuuguu caaaaugucu 20

<210> 4297
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4297
ucuaggacuu cuucgcaucg 20

<210> 4298
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4298
ccuaguuuag ucucuuggau 20

<210> 4299
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4299
uuuaaauucc aauaccacau 20

<210> 4300
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4300
agcauccuuu gaacuuuaga 20

<210> 4301
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4301
gcgggauaau cacuugagcu 20

<210> 4302
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4302
acucuguaac acacgccugc 20

<210> 4303
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4303
aagcguuuug cgcaggagag 20

<210> 4304
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4304
agagcuuugg ccgaggacga 20

<210> 4305
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4305
agagacagaa agucgauccg 20

<210> 4306
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4306
cuauuaaaaa ggaugagguc 20

<210> 4307
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4307
ugaaggacag aagcagugga 20

<210> 4308
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4308
cugaaggaca gaagcagugg 20

<210> 4309
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4309
uaccuuauuu cacuguaaug 20

<210> 4310
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4310
aauuagaccu gcccaguuag 20

<210> 4311
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4311
cugauaucca cuaacugggc 20

<210> 4312
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4312
auugcugaua uccacuaacu 20

<210> 4313
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4313
caggcuguca ggaggcauga 20

<210> 4314
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4314
aaauaucuua cuucauuacu 20

<210> 4315
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4315
uuuucuggua ugauacuauu 20

<210> 4316
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4316
cugguaugau acuauuaggu 20

<210> 4317
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4317
aucucuugau gaacagcuac 20

<210> 4318
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4318
gaugaacagc uacaggccug 20

<210> 4319
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4319
acagcuacag gccugagguu 20

<210> 4320
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4320
cuacaugaac uccuaaccuc 20

<210> 4321
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4321
guccuucagc cucaacuuau 20

<210> 4322
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4322
caccuauaag uugaggcuga 20

<210> 4323
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4323
acacagucac cuauaaguug 20

<210> 4324
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4324
ucguuaacuc cgcagagcac 20

<210> 4325
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4325
cguuaacucc gcagagcaca 20

<210> 4326
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4326
ggauggugcc cugugcucug 20

<210> 4327
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4327
cuaucccag caccuaaagc 20

<210> 4328
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4328
uaucccagc accuaaagcu 20

<210> 4329
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4329
gguagggauu uaggaaaaag 20

<210> 4330
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4330
agggauuuag gaaaaagagg 20

<210> 4331
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4331
uuuaggaaaa agaggaggcu 20

<210> 4332
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4332
aggaaaaaga ggaggcuugg 20

<210> 4333
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4333
gaucaucuag cacauguuuu 20

<210> 4334
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4334
cuagcacaug uuuuugguuu 20

<210> 4335
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4335
uaucuggugg guagcuacuu 20

<210> 4336
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4336
ggugggguagc uacuuaggag 20

<210> 4337
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4337
ccugcuuccu gcuucauccc 20

<210> 4338
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4338
gaaggugcca gggaugaagc 20

<210> 4339
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4339
uugccccuuc cgccauggga 20

<210> 4340
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4340
cuugccccuu ccgccauggg 20

<210> 4341
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4341
uagcuugccc cuuccgccau 20

<210> 4342
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4342
cuagcuugcc ccuuccgcca 20

<210> 4343
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4343
acuaacauuc acaucauagc 20

<210> 4344
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4344
cuaacauuca caucauagca 20

<210> 4345
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4345
ucacaucaua gcagggacuc 20

<210> 4346
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4346
caucauagca gggacucugg 20

<210> 4347
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4347
gggagcgcca ucuuuguagc 20

<210> 4348
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4348
ucaaguagca augaagguua 20

<210> 4349
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4349
cucaaguagc aaugaagguu 20

<210> 4350
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4350
ggaagaccug ugcauuuuug 20

<210> 4351
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4351
aacuguccac aaaaaugcac 20

<210> 4352
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4352
auuuauuuuu agcagagaca 20

<210> 4353
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4353
gguuggugca agaguaacug 20

<210> 4354
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4354
auaucggcuc acugcaaccc 20

<210> 4355
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4355
agccagcauc uucucucccu 20

<210> 4356
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4356
caccugugau ccgagcuacu 20

<210> 4357
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4357
uacucggggg aggcugaagc 20

<210> 4358
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4358
gaacgaggug gaguuuggcc 20

<210> 4359
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4359
gcaucacugc accucagucu 20

<210> 4360
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4360
uggguuuugc cauauugcuc 20

<210> 4361
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4361
cuacuuagga guggaauugc 20

<210> 4362
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4362
uucagccucc cccgaguagc 20

<210> 4363
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4363
cacuuccacu gccaccaccc 20

<210> 4364
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4364
ugcaucacug caccucaguc 20

<210> 4365
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4365
uccacagccu ugucaacacu 20

<210> 4366
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4366
cucuggggga gcauacagac 20

<210> 4367
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4367
ucccccagag guuugagcag 20

<210> 4368
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4368
agggagagaa gaugcuggcu 20

<210> 4369
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4369
ucuuagccua ggaagauuca 20

<210> 4370
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4370
guaucucagg guucuugccu 20

<210> 4371
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4371
cucaaguggu uugcccgccu 20

<210> 4372
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4372
caaaaccagc cugagcaaua 20

<210> 4373
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4373
ugaggcgggu cuaucaccug 20

<210> 4374
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4374
ugcccagggg cuggggggagg 20

<210> 4375
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4375
cagccaugag ccacugcguc 20

<210> 4376
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4376
uaagaugugg ggccuuuggg 20

<210> 4377
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4377
caaaaaguau cugggcauga 20

<210> 4378
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4378
uuaaauuaau uaaaauuggc 20

<210> 4379
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4379
uggaagugag cagagagaga 20

<210> 4380
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4380
ccgucuguau gcucccccag 20

<210> 4381
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4381
cagcauuugg gcacgaaggc 20

<210> 4382
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4382
caugcccuga gauggggaca 20

<210> 4383
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4383
acuuccacug ccaccacccu 20

<210> 4384
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4384
uuuacagcug aggccccagc 20

<210> 4385
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4385
augcccugag auggggacaa 20

<210> 4386
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4386
uugaaugaau gaaugcuuug 20

<210> 4387
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4387
aaugcagcau uugggcacga 20

<210> 4388
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4388
uaaaauuaca aaaaugaucc 20

<210> 4389
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4389
ggaaggagcu cucagcagau 20

<210> 4390
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4390
aaguaucugg gcaugauggc 20

<210> 4391
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4391
ugccccgcug cucaaaccuc 20

<210> 4392
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4392
ugcagcuauu aaaaaggaug 20

<210> 4393
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4393
acgccacugu acucccagcc 20

<210> 4394
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4394
uauuguauuu cuuguagaga 20

<210> 4395
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4395
ugagucucgc ucagucaccc 20

<210> 4396
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4396
uuggcggaag aagacacaag 20

<210> 4397
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4397
ccgagcuacu uggaagacug 20

<210> 4398
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4398
aaggagcucu cagcagauag 20

<210> 4399
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4399
ugaagcacuu gaaauguggc 20

<210> 4400
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4400
gaaggagcuc ucagcagaua 20

<210> 4401
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4401
ggagggaagg aauaucacac 20

<210> 4402
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4402
gagggaagga auaucacaca 20

<210> 4403
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4403
uggccggacg caguggcuca 20

<210> 4404
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4404
cgggucuauc accugagguc 20

<210> 4405
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4405
uggcuguaau ucuaacacuu 20

<210> 4406
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4406
ggcuguaauu cuaacacuuu 20

<210> 4407
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4407
ggcuugagcc cuggaguuca 20

<210> 4408
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4408
ccucuggggg agcauacaga 20

<210> 4409
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4409
gggggagcau acagacgggc 20

<210> 4410
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4410
agggucucgc caugcugccc 20

<210> 4411
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4411
augagccacu gcguccggcc 20

<210> 4412
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4412
gaggagaauc gauugaaccc 20

<210> 4413
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4413
caaggcagga guaucaccug 20

<210> 4414
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4414
acaaaagggg ccgggcgcgg 20

<210> 4415
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4415
aaaaaggaug aguucaugua 20

<210> 4416
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4416
cugucguggg gugggggagc 20

<210> 4417
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4417
cgccacugua cucccagccu 20

<210> 4418
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4418
ugcccaggcu gggaguacag 20

<210> 4419
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4419
caaaaauaca aaaaguaucu 20

<210> 4420
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4420
acaaaaauac aaaaaguauc 20

<210> 4421
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4421
cgggcaaacc acuugagguc 20

<210> 4422
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4422
uuguaucuuu aguagagcca 20

<210> 4423
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4423
aauaaauuag ccggaugugg 20

<210> 4424
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4424
gagacagggu uucagcaugc 20

<210> 4425
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4425
cccccagagg uuugagcagc 20

<210> 4426
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4426
aaaaaaggau gaguucaugu 20

<210> 4427
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4427
agcaccacug cacuccagug 20

<210> 4428
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4428
cagguguccu gcccuauacc 20

<210> 4429
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4429
gcuuguaguc ccagcuacca 20

<210> 4430
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4430
gaugaguuca uguagggaca 20

<210> 4431
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4431
ccaugggagg cugaggugag 20

<210> 4432
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4432
uauuuauuuu uagcagagac 20

<210> 4433
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4433
uuuguaucuu uaguagagcc 20

<210> 4434
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4434
agacgggguu ucaccagguu 20

<210> 4435
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4435
gggcuugcag aaugagugca 20

<210> 4436
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4436
ggccugcuuc agggaagaag 20

<210> 4437
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4437
aggguuucag caugcuggcc 20

<210> 4438
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4438
ugagaccagc cugcccaacc 20

<210> 4439
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4439
caggcaugag cuaccccgcc 20

<210> 4440
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4440
aaaaaaaaaa aaacaagucu 20

<210> 4441
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4441
auaaaauacc auaaacuagg 20

<210> 4442
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4442
gccgguaauc ccaguuacuc 20

<210> 4443
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4443
uguuaauuuu uuuguagaga 20

<210> 4444
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4444
cucaaacuuc ugagcucaag 20

<210> 4445
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4445
auacuaugca gcuauuaaaa 20

<210> 4446
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4446
agaaaagagg ccaggugcag 20

<210> 4447
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4447
guuaauuuuu uuguagagac 20

<210> 4448
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4448
cuucaggagg ccaaggccag 20

<210> 4449
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4449
caaaaaugau ccgggcgugg 20

<210> 4450
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4450
gcacaggaug ggggcguggu 20

<210> 4451
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4451
ggucuggaac ucucgaccuc 20

<210> 4452
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4452
ugccaaauag uuuuccaaag 20

<210> 4453
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4453
ccugucacau gagggucuuc 20

<210> 4454
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4454
ccucuaaucc cagcuacucg 20

<210> 4455
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4455
ggcugggaag uccacgauca 20

<210> 4456
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4456
ccugaagacc cucaugugac 20

<210> 4457
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4457
cggaagaaga cacaaguggc 20

<210> 4458
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4458
gcaggacacc ugucacauga 20

<210> 4459
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4459
ugucacauga gggucuucag 20

<210> 4460
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4460
cagcagauag gggagccaga 20

<210> 4461
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4461
ggguuuucac cauguuuccc 20

<210> 4462
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4462
ccccgaguag cugggauuag 20

<210> 4463
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4463
cacuugagcu ggggaggcgg 20

<210> 4464
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4464
aucaaggugc cagcagauuu 20

<210> 4465
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4465
cugucacaug agggucuuca 20

<210> 4466
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4466
guccgugggc acaggccugg 20

<210> 4467
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4467
ggcaggacac cugucacaug 20

<210> 4468
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4468
agcagauagg ggagccagaa 20

<210> 4469
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4469
cgcuugugug ucugccugcu 20

<210> 4470
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4470
ccggcaugcg ccaccaugcc 20

<210> 4471
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4471
ccagaccagc cuggccaagg 20

<210> 4472
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4472
cgugggcaca ggccuggggg 20

<210> 4473
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4473
agaaaacugc agaagcagga 20

<210> 4474
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4474
cucuaauccc agcuacucgg 20

<210> 4475
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4475
ggaugggggc gugugggcc 20

<210> 4476
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4476
cucaggugau acuccugccu 20

<210> 4477
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4477
ccaccuuggc caggcugguc 20

<210> 4478
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4478
gucuugggaa augcagcauu 20

<210> 4479
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4479
ccaggcaugg uggcgcaugc 20

<210> 4480
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4480
cggaagaauc agaucacacg   20

<210> 4481
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4481
gggguuucac cagguugggc   20

<210> 4482
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4482
ucacugaugg acguuugggu   20

<210> 4483
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4483
aacguccauc agugauagac   20

<210> 4484
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4484
ucuaucacug auggacguuu   20

<210> 4485
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4485
gaugggggcg uggugggcca   20

<210> 4486
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4486
gcgaggaaca ucacacacug 20

<210> 4487
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4487
aaucacuuga gcuggggagg 20

<210> 4488
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4488
caggaguauc accugagguc 20

<210> 4489
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4489
gugggguggg ggagcgggga 20

<210> 4490
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4490
uuucaccagg uugggcaggc 20

<210> 4491
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4491
ucuugggaaa ugcagcauuu 20

<210> 4492
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4492
guuccagacc agccuggcca 20

<210> 4493
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4493
ucucgccaug cugcccaggc 20

<210> 4494
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4494
uuucagcaug cuggccaggc 20

<210> 4495
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4495
gggggcgugg ugggccaggg 20

<210> 4496
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4496
gucuaucacu gauggacguu 20

<210> 4497
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4497
uaacacaagc cgccuacaga 20

<210> 4498
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4498
aauagcugca uaguauucca 20

<210> 4499
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4499
uccugccuca ggcucccgag 20

<210> 4500
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4500
cuagcaggca gacacacaag 20

<210> 4501
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4501
gccacucggg agccugaggc 20

<210> 4502
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4502
agguccgugg gcacaggccu 20

<210> 4503
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4503
gccucaggcu cccgaguggc 20

<210> 4504
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4504
cccagccacu cgggagccug 20

<210> 4505
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4505
uguagagacg ggguuucacc 20

<210> 4506
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4506
acugccacug uacuccagcc 20

<210> 4507
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4507
ucucaaacuu cugagcucaa 20

<210> 4508
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4508
gucucaaacu ucugagcuca 20

<210> 4509
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4509
ccucaggcuc ccgaguggcu 20

<210> 4510
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4510
aggccugugc ccacggaccu 20

<210> 4511
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4511
accuguaauc ccagccaccu 20

<210> 4512
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4512
agagucucgc uguguugcuc 20

<210> 4513
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4513
uagguccgug ggcacaggcc 20

<210> 4514
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4514
caccccagg ccugugccca 20

<210> 4515
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4515
ucagccuccc ccgaguagcu 20

<210> 4516
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4516
ggcacaggau gggggcgugg 20

<210> 4517
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4517
gcuugugugu cugccugcua 20

<210> 4518
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4518
ccucucaccu cagccuccca 20

<210> 4519
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4519
auaauaaaau accauaaacu 20

<210> 4520
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4520
caccuguaau cccagccacc 20

<210> 4521
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4521
cgucuguaau cccagccacu 20

<210> 4522
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4522
aggagaauca cuugaaaccc 20

<210> 4523
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4523
uaaucccagc uacucggggg 20

<210> 4524
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4524
gggauuacag ccaccaugcc 20

<210> 4525
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4525
cuggaacucc ugaccucaag 20

<210> 4526
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4526
uacuuaggag uggaauugcu 20

<210> 4527
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4527
gguccguggg cacaggccug 20

<210> 4528
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4528
gagccaccau gcccggccca 20

<210> 4529
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4529
cuuacucuug ucgcccaggc 20

<210> 4530
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4530
ccugucgugg gguggggggag 20

<210> 4531
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4531
aggaggucga ggcugcagug 20

<210> 4532
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4532
ggaagaauca gaucacacgu 20

<210> 4533
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4533
auacagacgg gcaggcugug 20

<210> 4534
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4534
gaguggaauu gcugggucau 20

<210> 4535
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4535
gccugucauc ccagcuacua 20

<210> 4536
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4536
uuuauaagcc accuaguuua 20

<210> 4537
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4537
gcauacagac gggcaggcug 20

<210> 4538
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4538
uggugggcca ggguggucuu 20

<210> 4539
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4539
ucacucuguc acccagacug 20

<210> 4540
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4540
cauacagacg ggcaggcugu 20

<210> 4541
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4541
aacugaacaa ugaaaacacu 20

<210> 4542
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4542
cuuacucugu ugcccaggcu 20

<210> 4543
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4543
gguuuugaac uccugaccuu 20

<210> 4544
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4544
gugguggggcc agggguggucu 20

<210> 4545
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4545
caggugugca ccaccauggc 20

<210> 4546
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4546
ucccuaguag cugggaugac 20

<210> 4547
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4547
uuuugccaua uugcucaggc 20

<210> 4548
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4548
acuuggaaga cugaggugggg 20

<210> 4549
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4549
cucagcacuu ugggagggcg 20

<210> 4550
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4550
gugucugccu gcuagggucu 20

<210> 4551
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4551
ugucauccca gcuacuaggg 20

<210> 4552
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4552
ugugcccacg gaccuaggug 20

<210> 4553
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4553
gcuacuugga agacugaggu 20

<210> 4554
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4554
gccccgcugc ucaaaccucu 20

<210> 4555
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4555
ucuaacacuu ugggaggcug 20

<210> 4556
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4556
ucaccuaggu ccgugggcac 20

<210> 4557
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4557
ucccaggugg cugggauuac 20

<210> 4558
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4558
agcuacuugg aagacugagg 20

<210> 4559
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4559
caggccgauc acuugagguc 20

<210> 4560
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4560
cagacgugug ccaccacgcc 20

<210> 4561
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4561
gucucaaauu ccugggcuca 20

<210> 4562
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4562
acuacaggug ugcaccacca 20

<210> 4563
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4563
gagacagggu uucaccaccu 20

<210> 4564
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4564
uguaauccca gccaccuggg 20

<210> 4565
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4565
gacuguaauc ccagcacuuc 20

<210> 4566
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4566
cucaagcaau ccucuggccu 20

<210> 4567
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4567
ucucaaauuc cugggcucaa 20

<210> 4568
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4568
aggguuucac caccuuggcc 20

<210> 4569
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4569
caggcgugag ccccugcacc 20

<210> 4570
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4570
uugcucaggg uggagugcag 20

<210> 4571
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4571
auaggcacag gaugggggcg 20

<210> 4572
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4572
cacugcagcc uugaacucca 20

<210> 4573
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4573
gcuacuaggg aggcugaggg 20

<210> 4574
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4574
caggcacgca ccaccacauc 20

<210> 4575
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4575
gccaccuggg aggcugaggc 20

<210> 4576
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4576
gaagacugcu ugagcccagg 20

<210> 4577
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4577
uccugccuca gccucccagg 20

<210> 4578
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4578
uaaauaaaua aaaauuagcc 20

<210> 4579
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4579
uuaauuuuuu uguagagacg 20

<210> 4580
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4580
gccucagccu cccagguggc 20

<210> 4581
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4581
cccucagccu cccuaguagc 20

<210> 4582
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4582
aaaaaaaaaa aaaaagacau 20

<210> 4583
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4583
aaaaaaaaag ccaggcacag 20

<210> 4584
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4584
ccuguccuca ccuagguccg 20

<210> 4585
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4585
aacccgggag auggagguug 20

<210> 4586
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4586
gucuguaauc ccagccacuc 20

<210> 4587
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4587
ggguuucaac auaugaauuu 20

<210> 4588
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4588
cuguccucac cuagguccgu 20

<210> 4589
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4589
ccacggaccu aggugaggac 20

<210> 4590
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4590
ucuugcucug ucacccacac 20

<210> 4591
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4591
ucuuaaguag cugggacuac 20

<210> 4592
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4592
ucaccacaac cuccaucucc 20

<210> 4593
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4593
ccagcuacua gggaggcuga 20

<210> 4594
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4594
aggagugccu guccucaccu 20

<210> 4595
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4595
caccacaacc uccaucuccc   20

<210> 4596
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4596
guuacucagg aagcugaggc   20

<210> 4597
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4597
uguaguccca gcuacuuaag   20

<210> 4598
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4598
ccagaggauu gcuugagccc   20

<210> 4599
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4599
ggcuugagcc ugggagguug   20

<210> 4600
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4600
gaucaaggug ccagcagauu   20

<210> 4601
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4601
ccucagccuc ccagguggcu 20

<210> 4602
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4602
gggaggcuga ggugagagga 20

<210> 4603
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4603
cccagccacc ugggaggcug 20

<210> 4604
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4604
acaggugcag cacaccaaca 20

<210> 4605
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4605
gcaccacugc acuccagugu 20

<210> 4606
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4606
gccucagcuu ccugaguaac 20

<210> 4607
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4607
ugagaggaug gcuugagccc 20

<210> 4608
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4608
uguaauucua acacuuuggg 20

<210> 4609
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4609
ccugggcuca agcaauccuc 20

<210> 4610
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4610
gagccagggu uucaccaugu 20

<210> 4611
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4611
gagaaucgau ugaacccagg 20

<210> 4612
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4612
gguuucaaca uaugaauuuu 20

<210> 4613
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4613
ggagugcagu ggugcaauau 20

<210> 4614
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4614
auacaaaaau uagccggcca 20

<210> 4615
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4615
cccaguuacu caggaagcug 20

<210> 4616
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4616
caaaaauuag ccggccaugg 20

<210> 4617
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4617
aaauaaaaau uagccaggug 20

<210> 4618
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4618
caggugcaua ccaccacacc   20

<210> 4619
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4619
gcacuuuggg aagcugagac   20

<210> 4620
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4620
ccucagcuuc cugaguaacu   20

<210> 4621
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4621
cuuugggagg gcgagguggg   20

<210> 4622
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4622
gcuacuuaag aggcugaggc   20

<210> 4623
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4623
ugggaagacu gcuugagccc   20

<210> 4624
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4624
guuucaacau augaauuuug 20

<210> 4625
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4625
gccucagccu cuuaaguagc 20

<210> 4626
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4626
caaggcaggu ggaucaccua 20

<210> 4627
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4627
uucaacauau gaauuuuggg 20

<210> 4628
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4628
cugccacugu acuccagccu 20

<210> 4629
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4629
uuguguuuuu uguagagaca 20

<210> 4630
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4630
uuucaccacc uuggccaggc 20

<210> 4631
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4631
ucucgcucag ucacccaggc 20

<210> 4632
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4632
ugcauuuccc aagaccaccc 20

<210> 4633
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4633
ucuuucuuuc uuuuuugaga 20

<210> 4634
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4634
ccucagucuu ccaaguagcu 20

<210> 4635
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4635
cuuugggagg acaaggcagg 20

<210> 4636
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4636
gagugcaagg uuuuauugag 20

<210> 4637
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4637
guaaucucag cacuuuggga 20

<210> 4638
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4638
caaacauuag ccaggcaugg 20

<210> 4639
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4639
ugagaccagc cugggcagca 20

<210> 4640
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4640
auacaaacau uagccaggca 20

<210> 4641
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4641
uauuauuauu auuuugagac 20

<210> 4642
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4642
cccagcuacu uaagaggcug 20

<210> 4643
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4643
ucacccacac uggagugcag 20

<210> 4644
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4644
gcacuuuggg agggcgaggu 20

<210> 4645
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4645
gagacagggu uuugcuaugu 20

<210> 4646
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4646
ccucagccuc uuaaguagcu 20

<210> 4647
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4647
aggguuuugc uauguuggcc 20

<210> 4648
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4648
uuuguguuuu uuguagagac 20

<210> 4649
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4649
uuucaacaua ugaauuuugg 20

<210> 4650
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4650
ggggccuuug ggaggugauu 20

<210> 4651
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4651
aguggaauug cugggucaua 20

<210> 4652
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4652
cacuguagcc ucaaccuccc 20

<210> 4653
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4653
caaaaaacac aaaaauuagc 20

<210> 4654
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4654
ggaguacaau ggcgcgaucu 20

<210> 4655
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4655
uuuuuuuuuu cuuuugagac 20

<210> 4656
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4656
uggccaacau ggugaaaccc 20

<210> 4657
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4657
cgcuugaacc cggaaggcag 20

<210> 4658
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4658
gagacggggu uucaccaggu 20

<210> 4659
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4659
uggggccugu cgugggggugg 20

<210> 4660
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4660
ucucagcuuc ccaaagugcu 20

<210> 4661
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4661
cuggggccug ucgugggggug 20

<210> 4662
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4662
cguuugaacc ugggaggcgg 20

<210> 4663
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4663
cacuggggcc ugucgugggg 20

<210> 4664
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4664
aacuccugac cucaagugau   20

<210> 4665
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4665
caggcugguc uugagcuccu   20

<210> 4666
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4666
cgcgccauug uacuccagcc   20

<210> 4667
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4667
cgcuugaacc cgggagaugg   20

<210> 4668
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4668
agagucuuac ucugucgccc   20

<210> 4669
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4669
aagaggcuga ggcaggagaa   20

<210> 4670
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4670
aaaaaacaca aaaauuagcu 20

<210> 4671
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4671
acuggggccu gucguggggu 20

<210> 4672
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4672
gcacuuuggg aggacaaggc 20

<210> 4673
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4673
gccuuggccu ccugaagugc 20

<210> 4674
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4674
gccuuguccu cccaaagugc 20

<210> 4675
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4675
agcacuuugg gagggcgagg 20

<210> 4676
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4676
acacacuggg gccugucgug 20

<210> 4677
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4677
uggcuguaau cccagcuacu 20

<210> 4678
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4678
caggagaauc acuugaaacc 20

<210> 4679
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4679
ugccugucau cccagcuacu 20

<210> 4680
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4680
cacacacugg ggccugucgu 20

<210> 4681
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4681
cagguggauc accuaagguc 20

<210> 4682
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4682
uguuguuguu guuuuugaga 20

<210> 4683
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4683
ugccucuaau cccagcuacu 20

<210> 4684
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4684
ggagugcagu ggagcgaucu 20

<210> 4685
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4685
cccagcacuu caggaggcca 20

<210> 4686
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4686
ggcuguaauc ccagcuacuc 20

<210> 4687
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4687
ugcuugagcc caggaggucg 20

<210> 4688
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4688
uuuguauuuu uguagagacg 20

<210> 4689
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4689
ggagucuuac ucuguugccc 20

<210> 4690
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4690
ccuuggccuc cugaagugcu 20

<210> 4691
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4691
caggagcuca agaccagccu 20

<210> 4692
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4692
ccaggcuggu cuugagcucc 20

<210> 4693
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4693
ccaggagcuc aagaccagcc 20

<210> 4694
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4694
gaauuucacu cuuguugccc 20

<210> 4695
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4695
cgauaguuug cucagaauga 20

<210> 4696
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4696
cccagcacuu ugggaggaca 20

<210> 4697
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4697
auucugagca aacuaucgca 20

<210> 4698
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4698
cuaaagauac aaaaauuagc 20

<210> 4699
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4699
ccuuguccuc ccaaagugcu 20

<210> 4700
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4700
cgcuccacug cacuccagcc 20

<210> 4701
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4701
gcgccauugu acuccagccu 20

<210> 4702
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4702
aucucaaaaa aaaaaaaaaa 20

<210> 4703
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4703
gagcggggag ggauagcauu 20

<210> 4704
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4704
ucaagcgauu cuccugccuc 20

<210> 4705
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4705
uuaauccagu cuaucacuga 20

<210> 4706
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4706
gagaaucgcu ugaacccgga 20

<210> 4707
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4707
gccucuaauc ccagcuacuc 20

<210> 4708
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4708
uuguaauuuu aguagagacg 20

<210> 4709
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4709
aaucgcuuga acccgggaga 20

<210> 4710
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4710
uuuugcuaug uuggccaggc   20

<210> 4711
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4711
uaaaaauaca aacauuagcc   20

<210> 4712
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4712
ucacacacug gggccugucg   20

<210> 4713
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4713
ccauguuggu caggcugguc   20

<210> 4714
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4714
ccagaccagc cugaccaaca   20

<210> 4715
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4715
ugacuguaau cccagcacuu   20

<210> 4716
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4716
caggcugguc ucaaauuccu 20

<210> 4717
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4717
ugggaggauc ccuugagccc 20

<210> 4718
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4718
ugcaccacug cacuccaguc 20

<210> 4719
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4719
ucuuacucug ucgcccaggc 20

<210> 4720
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4720
ucucacucug uugcccagac 20

<210> 4721
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4721
aacugcuuga acccaggagg 20

<210> 4722
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4722
acacaaaaau uagcugggca 20

<210> 4723
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4723
ggauuacagg cgugagccac 20

<210> 4724
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4724
gccgaggugg gcggaucaug 20

<210> 4725
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4725
cagaaguuug agaccagccu 20

<210> 4726
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4726
gaggucucac uauguugccc 20

<210> 4727
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4727
uuuuguauuu uuguagagac 20

<210> 4728
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4728
ucgggaguuc gagaccagcc 20

<210> 4729
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4729
ugccuguaac cccagcacuu 20

<210> 4730
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4730
uuuguaauuu uaguagagac 20

<210> 4731
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4731
gcuccacugc acuccagccu 20

<210> 4732
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4732
gcaggcagau caccugaggu 20

<210> 4733
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4733
uccugaguaa cugggauuac 20

<210> 4734
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4734
cuuggccucc caaagugcug 20

<210> 4735
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4735
caggugugug ccaccacacc 20

<210> 4736
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4736
ccaggcuggu cucaaauucc 20

<210> 4737
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4737
ccaggaauuu gagaccagcc 20

<210> 4738
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4738
uuuuuguauu uuuguagaga 20

<210> 4739
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4739
uguaauccca gcacuucagg 20

<210> 4740
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4740
gagaacugcu ugaacccagg 20

<210> 4741
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4741
caggaauuug agaccagccu 20

<210> 4742
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4742
ucagaaguuu gagaccagcc 20

<210> 4743
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4743
gacuguaauc ccagcacuuu 20

<210> 4744
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4744
gcaccacugc acuccagucu 20

<210> 4745
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4745
uaaaaauuag ccaggugugg 20

<210> 4746
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4746
uuuuguaauu uuaguagaga 20

<210> 4747
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4747
uaaaaauaca aaaaucagcu 20

<210> 4748
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4748
gccucggucu cccaaagugc 20

<210> 4749
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4749
gcacuuuggg agaccgaggc 20

<210> 4750
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4750
agcacuuugg gagaccgagg 20

<210> 4751
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4751
accucaugau ccgcccaccu 20

<210> 4752
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4752
cacugcaacc ucugccuucc 20

<210> 4753
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4753
ucuuacucug uugcccaggc 20

<210> 4754
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4754
cacugcagcc ucgaccuccu 20

<210> 4755
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4755
aaaaaaaaaa aaaaaaagcc 20

<210> 4756
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4756
gggguuucuc cauguuggcc 20

<210> 4757
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4757
caggagaacu gcuugaaccc 20

<210> 4758
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4758
ggugggcgga ucaugagguc 20

<210> 4759
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4759
uugcccaggc uggaguacaa 20

<210> 4760
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4760
ucacugcagc cucgaccucc 20

<210> 4761
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4761
ucacugcaac cucugccuuc 20

<210> 4762
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4762
gggauuacag gcgugagcca 20

<210> 4763
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4763
gccuguaguc ccagcuacua 20

<210> 4764
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4764
cuaaaaauac aaaaaucagc 20

<210> 4765
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4765
caggcgcccg ccaccacacc 20

<210> 4766
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4766
cccagcacuu ugggagaccg 20

<210> 4767
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4767
uugcccagac uggagugcag 20

<210> 4768
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4768
caaaaaaaaa aaaaaaaaaa 20

<210> 4769
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4769
acacuuuggg aggcugaggu 20

<210> 4770
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4770
ccucggucuc ccaaagugcu 20

<210> 4771
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4771
ucacugcagc cuugaacucc 20

<210> 4772
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4772
aaaaaaaaaa aaaaaaaaga 20

<210> 4773
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4773
gccuguaacc ccagcacuuu 20

<210> 4774
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4774
auuauuauac uuuaaguucu 20

<210> 4775
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4775
uuguauuuuu aguagagacu 20

<210> 4776
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4776
ucgcccaggc uggaguacag 20

<210> 4777
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4777
cgaggcaggc agaucaccug 20

<210> 4778
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4778
cgaggcaggc agaucaccug 20

<210> 4779
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4779
ucccuaguag cugggacuac 20

<210> 4780
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4780
uuucuccaug uuggccaggc 20

<210> 4781
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4781
aauacaaaau uagccaggca 20

<210> 4782
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4782
uguaguccca gcuacuaggg 20

<210> 4783
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4783
ggagugcaau ggcgcaaucu 20

<210> 4784
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4784
acaaaauuag ccaggcaugg 20

<210> 4785
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4785
aaugguguga acccgggagg 20

<210> 4786
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4786
uucuccugcc ucagccuccc 20

<210> 4787
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4787
ucaggaguuc cagaccagcc 20

<210> 4788
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4788
ucccaaagug cuggggguac 20

<210> 4789
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4789
uguaacccca gcacuuuggg 20

<210> 4790
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4790
aaaaaaaaaa aaaaaaaaag 20

<210> 4791
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4791
uacaaaaaau uagccgggug 20

<210> 4792
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4792
caggugugag ccaccacacc 20

<210> 4793
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4793
aacacuuugg gaggcugagg 20

<210> 4794
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4794
ggucucgaac ucccgaccuc 20

<210> 4795
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4795
uacaaaaaau uagccaggug 20

<210> 4796
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4796
caggcaugag ccaccgcacc 20

<210> 4797
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4797
ugcgccauug cacuccagcc 20

<210> 4798
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4798
uuauuauacu uuaaguucua 20

<210> 4799
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4799
gagaauggug ugaacccggg 20

<210> 4800
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4800
aauuagccgg gugugguggc 20

<210> 4801
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4801
caccgcaugu ucucacucau 20

<210> 4802
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4802
caaggcaggu ggaucaccug   20

<210> 4803
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4803
cgcauguucu cacucauagg   20

<210> 4804
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4804
aaauuagccg gguguggugg   20

<210> 4805
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4805
cgccuguaau cucagcacuu   20

<210> 4806
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4806
cucaggugau cugccugccu   20

<210> 4807
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4807
cucaggugau cugccugccu   20

<210> 4808
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4808
gcuacuaggg aggcugaggc 20

<210> 4809
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4809
ugcuugaacc caggaggcgg 20

<210> 4810
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4810
gccucagccu cccuaguagc 20

<210> 4811
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4811
gagacggggu uucuccaugu 20

<210> 4812
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4812
gagugagaac augcgguguu 20

<210> 4813
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4813
gguacaugug cacaacgugc 20

<210> 4814
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4814
aaaaaauuag ccgggugugg 20

<210> 4815
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4815
ccuagcacuu ugggaggccg 20

<210> 4816
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4816
caggcgugag ccacugugcc 20

<210> 4817
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4817
cccagcuacu agggaggcug 20

<210> 4818
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4818
cccagcuacu agggaggcug 20

<210> 4819
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4819
cgccuguaau ccuagcacuu 20

<210> 4820
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4820
uguagggaca uggaugaagc 20

<210> 4821
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4821
ccucagccuc ccuaguagcu 20

<210> 4822
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4822
ccucagccuc ccuaguagcu 20

<210> 4823
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4823
ugccuguaau ccuagcacuu 20

<210> 4824
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4824
caggcagauc accugagguc 20

<210> 4825
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4825
caggcagauc accugagguc 20

<210> 4826
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4826
gcauguucuc acucauaggu 20

<210> 4827
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4827
caccuaugag ugagaacaug 20

<210> 4828
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4828
gcaggagaau ggugugaacc 20

<210> 4829
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4829
caggcaugag ccaccaugcc 20

<210> 4830
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4830
caggagaaug gugugaaccc 20

<210> 4831
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4831
caugccauug cacuccagcc 20

<210> 4832
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4832
ucucacuaug uugcccaggc 20

<210> 4833
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4833
augccauugc acuccagccu 20

<210> 4834
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4834
aaaaaauuag ccaggugugg 20

<210> 4835
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4835
uauguauaca ugugccaugu 20

<210> 4836
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4836
gggguuucac uguguuagcc 20

<210> 4837
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4837
gaguuucacu cuuguugccc 20

<210> 4838
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4838
cucaggugau ccaccugccu 20

<210> 4839
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4839
uucacucuug uugcccaggc 20

<210> 4840
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4840
uucacucuug uugcccaggc 20

<210> 4841
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4841
gccuguaauc ucagcacuuu 20

<210> 4842
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4842
gcgccauugc acuccagccu 20

<210> 4843
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4843
gggguuucac cauguugguc 20

<210> 4844
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4844
accucagccu ccugaguagc 20

<210> 4845
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4845
agcuacucag gaggcugagg 20

<210> 4846
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4846
agcuacucag gaggcugagg 20

<210> 4847
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4847
gcuacucagg aggcugaggu 20

<210> 4848
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4848
uuuuuuuuuu uuuuugagac   20

<210> 4849
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4849
uuuuuuuuuu uuuuugagac   20

<210> 4850
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4850
uuuuuuuuuu uuuugagaca   20

<210> 4851
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4851
uuuuuuuuuu uuuugagaca   20

<210> 4852
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4852
uuucacugug uuagccagga   20

<210> 4853
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4853
ucacccaggc uggagugcaa   20

<210> 4854
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4854
accuguaauc ccagcuacuu 20

<210> 4855
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4855
cuaaaaauac aaaauuagcc 20

<210> 4856
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4856
gccuguaauc cuagcacuuu 20

<210> 4857
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4857
gccuguaauc cuagcacuuu 20

<210> 4858
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4858
ggagugcagu ggcgugaucu 20

<210> 4859
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4859
ggagugcagu ggcgugaucu 20

<210> 4860
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4860
ucccaaagug cugagauuac 20

<210> 4861
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4861
uguaaucuca gcacuuuggg 20

<210> 4862
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4862
uagacuggau uaagaaaaug 20

<210> 4863
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4863
uuucaccaug uuggucaggc 20

<210> 4864
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4864
cacugcaacc uccgccuccu 20

<210> 4865
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4865
ggagucucgc ucugucgccc 20

<210> 4866
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4866
aauguggcac auauacacca 20

<210> 4867
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4867
acgccacugc acuccagccu 20

<210> 4868
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4868
ucccaaagug cuaggauuac 20

<210> 4869
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4869
ucccaaagug cuaggauuac 20

<210> 4870
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4870
ggagugcagu ggcgcgaucu 20

<210> 4871
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4871
cacgccacug cacuccagcc 20

<210> 4872
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4872
uguaauccua gcacuuuggg 20

<210> 4873
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4873
caaaaauuag cugggcaugg 20

<210> 4874
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4874
cuuugggagg cugagguggg 20

<210> 4875
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4875
ggucucaaac uccugaccuc 20

<210> 4876
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4876
gagaaucgcu ugaacccagg 20

<210> 4877
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4877
caggcgugag ccaccgcgcc 20

<210> 4878
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4878
cuuugggagg ccaaggcagg 20

<210> 4879
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4879
ggucuugaac uccugaccuc 20

<210> 4880
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4880
ucucgcucug ucgcccaggc 20

<210> 4881
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4881
cuuugggagg ccgagguggg 20

<210> 4882
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4882
caccuguaau cccagcuacu 20

<210> 4883
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4883
cgcgccacug cacuccagcc 20

<210> 4884
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4884
accuguaguc ccagcuacuc 20

<210> 4885
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4885
aggguuucac cauguuggcc 20

<210> 4886
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4886
cacugcaagc uccgccuccc 20

<210> 4887
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4887
ugccuguagu cccagcuacu 20

<210> 4888
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4888
ggucucgaac uccugaccuc 20

<210> 4889
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4889
ucacugcaag cuccgccucc 20

<210> 4890
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4890
cacugcaacc uccgccuccc 20

<210> 4891
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4891
gcacuuuggg aggccgaggu 20

<210> 4892
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4892
ucacugcaac cuccgccucc 20

<210> 4893
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4893
caagaccagc cuggccaaca 20

<210> 4894
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4894
gagauggggu uucaccaugu 20

<210> 4895
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4895
uguaguccca gcuacucagg 20

<210> 4896
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4896
uguaguccca gcuacucagg 20

<210> 4897
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4897
uccugaguag cugggacuac 20

<210> 4898
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4898
uccugaguag cugggacuac 20

<210> 4899
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4899
caggagaauc gcuugaaccc 20

<210> 4900
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4900
caggagaauc gcuugaaccc 20

<210> 4901
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4901
cgagaccagc cuggccaaca 20

<210> 4902
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4902
gcaggagaau cgcuugaacc 20

<210> 4903
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4903
gcaggagaau cgcuugaacc 20

<210> 4904
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4904
uguaauccca gcuacucggg 20

<210> 4905
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4905
uaaaaauaca aaaaauuagc 20

<210> 4906
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4906
gcgccacugc acuccagccu 20

<210> 4907
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4907
ucccaaguag cugggauuac 20

<210> 4908
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4908
uguaauccca gcuacuuggg 20

<210> 4909
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4909
ucaggaguuc aagaccagcc 20

<210> 4910
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4910
ucaggaguuc gagaccagcc 20

<210> 4911
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4911
ucaggaguuc gagaccagcc 20

<210> 4912
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4912
aaaaauacaa aaaauuagcc 20

<210> 4913
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4913
aaaaauacaa aaaauuagcc 20

<210> 4914
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4914
ucaggagauc gagaccaucc 20

<210> 4915
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4915
gccuuggccu cccaaagugc 20

<210> 4916
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4916
gccuuggccu cccaaagugc 20

<210> 4917
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4917
gcacuuuggg aggccaaggc   20

<210> 4918
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4918
gcacuuuggg aggccaaggc   20

<210> 4919
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4919
gccucagccu cccaaagugc   20

<210> 4920
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4920
gcacuuuggg aggcugaggc   20

<210> 4921
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4921
agcacuuugg gaggcugagg   20

<210> 4922
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4922
ucgcccaggc uggagugcag   20

<210> 4923
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4923
ucgcccaggc uggagugcag 20

<210> 4924
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4924
uuguauuuuu aguagagaca 20

<210> 4925
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4925
uuguauuuuu aguagagaca 20

<210> 4926
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4926
uugcccaggc uggagugcag 20

<210> 4927
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4927
caccuguaau cccagcacuu 20

<210> 4928
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4928
gccuguaguc ccagcuacuc 20

<210> 4929
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4929
accuguaauc ccagcacuuu 20

<210> 4930
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4930
gcuacuuggg aggcugaggc 20

<210> 4931
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4931
gcuacucagg aggcugaggc 20

<210> 4932
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4932
cccagcacuu ugggaggcca 20

<210> 4933
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4933
cccagcacuu ugggaggcca 20

<210> 4934
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4934
gccucagccu cccaaguagc 20

<210> 4935
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4935
gccucggccu cccaaagugc 20

<210> 4936
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4936
gccucggccu cccaaagugc 20

<210> 4937
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4937
uuguauuuuu aguagagaug 20

<210> 4938
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4938
uuuuuuuuuu uuuuuugaga 20

<210> 4939
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4939
uuuuuuuuuu uuuuuugaga 20

<210> 4940
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4940
ccuuggccuc ccaaagugcu   20

<210> 4941
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4941
ccuuggccuc ccaaagugcu   20

<210> 4942
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4942
cccagcacuu ugggaggcug   20

<210> 4943
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4943
gcacuuuggg aggccgaggc   20

<210> 4944
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4944
gcacuuuggg aggccgaggc   20

<210> 4945
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4945
gccucagccu ccugaguagc   20

<210> 4946
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4946
uuuguauuuu uaguagagau 20

<210> 4947
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4947
uuucaccaug uuggccaggc 20

<210> 4948
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4948
gcuacucggg aggcugaggc 20

<210> 4949
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4949
agcacuuugg gaggccgagg 20

<210> 4950
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4950
cccagcuacu ugggaggcug 20

<210> 4951
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4951
ugccuguaau cccagcacuu 20

<210> 4952
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4952
ccucagccuc ccaaagugcu 20

<210> 4953
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4953
ccucagccuc ccaaguagcu 20

<210> 4954
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4954
cccagcuacu caggaggcug 20

<210> 4955
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4955
cccagcuacu caggaggcug 20

<210> 4956
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4956
gccucagccu cccgaguagc 20

<210> 4957
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4957
ccucagccuc cugaguagcu 20

<210> 4958
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4958
ccucagccuc cugaguagcu 20

<210> 4959
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4959
cccagcuacu cgggaggcug 20

<210> 4960
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4960
uuguauuuuu aguagagacg 20

<210> 4961
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4961
ccucagccuc ccgaguagcu 20

<210> 4962
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4962
cccagcacuu ugggaggccg 20

<210> 4963
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4963
cccagcacuu ugggaggccg   20

<210> 4964
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4964
ccucggccuc ccaaagugcu   20

<210> 4965
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4965
ccucggccuc ccaaagugcu   20

<210> 4966
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4966
ccucggccuc ccaaagugcu   20

<210> 4967
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4967
cgccuguaau cccagcacuu   20

<210> 4968
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4968
cgccuguaau cccagcacuu   20

<210> 4969
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4969
cgccuguaau cccagcacuu 20

<210> 4970
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4970
uuuguauuuu uaguagagac 20

<210> 4971
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4971
uuuguauuuu uaguagagac 20

<210> 4972
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4972
uuuguauuuu uaguagagac 20

<210> 4973
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4973
uuuguauuuu uaguagagac 20

<210> 4974
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4974
uuuuguauuu uuaguagaga 20

<210> 4975
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4975
uuuuguauuu uuaguagaga 20

<210> 4976
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4976
gccuguaauc ccagcacuuu 20

<210> 4977
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4977
gccuguaauc ccagcacuuu 20

<210> 4978
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4978
gccuguaauc ccagcacuuu 20

<210> 4979
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4979
gccuguaauc ccagcacuuu 20

<210> 4980
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4980
ucccaaagug cugggauuac 20

<210> 4981
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4981
ucccaaagug cugggauuac 20

<210> 4982
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4982
ucccaaagug cugggauuac 20

<210> 4983
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4983
ucccaaagug cugggauuac 20

<210> 4984
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4984
ucccaaagug cugggauuac 20

<210> 4985
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4985
uguaauccca gcacuuuggg 20

<210> 4986
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4986
uguaauccca gcacuuuggg 20

<210> 4987
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4987
uguaauccca gcacuuuggg 20

<210> 4988
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4988
uguaauccca gcacuuuggg 20

<210> 4989
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4989
uguaauccca gcacuuuggg 20

<210> 4990
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4990
accugaguaa uaaaaauugu 20

<210> 4991
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4991
uccaacaauu uuuauuacuc 20

<210> 4992
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4992
caacaugcca auuaguucac 20

<210> 4993
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4993
uuaauaaccu gugaacuaau 20

<210> 4994
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4994
ucacagguua uuaauuuaaa 20

<210> 4995
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4995
uuuaaaaggu cacuguugug 20

<210> 4996
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4996
cuuugucacu gucuugcucc 20

<210> 4997
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4997
cugucuugcu ccuggcuucc 20

<210> 4998
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4998
ccuggcuucc ugguuucaug 20

<210> 4999
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4999
ccucaugaaa ccaggaagcc 20

<210> 5000
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5000
agaagguucc ucaugaaacc 20

<210> 5001
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5001
aauaucauuu gaacuuuaga 20

<210> 5002
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5002
auugaaacuc aacagaaaga 20

<210> 5003
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5003
aaacucaaca gaaagaagga 20

<210> 5004
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5004
aacucaacag aaagaaggaa 20

<210> 5005
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5005
uuguuuuuau agaaacucug 20

<210> 5006
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5006
uaaugagaag ucauguuucu 20

<210> 5007
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5007
ucauguuucu uggaaauuuu 20

<210> 5008
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5008
uguuucuugg aaauuuuagg 20

<210> 5009
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5009
uagaauuuaa uauuguaagc 20

<210> 5010
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5010
uguaagccgg acuauuacug 20

<210> 5011
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5011
guaagccgga cuauuacuga 20

<210> 5012
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5012
cuuaacccuc aguaauaguc 20

<210> 5013
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5013
cggacuauua cugaggguua 20

<210> 5014
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5014
gaagcuauua auagcucugc 20

<210> 5015
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5015
aagcuauuaa uagcucugcu 20

<210> 5016
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5016
ugcugggaca aguguaaaug 20

<210> 5017
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5017
guguaaauga ggacuguccc 20

<210> 5018
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5018
aggacugucc caggcaaauc 20

<210> 5019
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5019
ucccaggcaa aucaggacaa 20

<210> 5020
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5020
cccaggcaaa ucaggacaaa 20

<210> 5021
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5021
cccuuugucc ugauuugccu 20

<210> 5022
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5022
acccuuuguc cugauuugcc 20

<210> 5023
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5023
gggucacccu aguuuaaaua 20

<210> 5024
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5024
gcuaauccau auuuaaacua 20

<210> 5025
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5025
ugcuaaucca uauuuaaacu 20

<210> 5026
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5026
uuuaaauaug gauuagcaua 20

<210> 5027
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5027
uauuagacug caguggugcu 20

<210> 5028
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5028
agacuucuau uagacugcag 20

<210> 5029
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5029
uaggguuuau ugacuuucuu 20

<210> 5030
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5030
uggaauauau ugagucuuua 20

<210> 5031
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5031
auggaauaua uugagucuuu 20

<210> 5032
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5032
auuuagaagu uuaaaaguga 20

<210> 5033
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5033
cacuuuuaaa cuucuaaaug 20

<210> 5034
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5034
uaaacuucua aauguggccc 20

<210> 5035
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5035
cuucuaaaug uggcccuggc 20

<210> 5036
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5036
uaagcauauu augccugcca 20

<210> 5037
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5037
uuaagcauau uaugccugcc 20

<210> 5038
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5038
aggcauaaua ugcuuaaaua 20

<210> 5039
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5039
agagaguauu augucuaaga 20

<210> 5040
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5040
gggcacuaga gagguaagag 20

<210> 5041
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5041
ugaauugaug ggcacuagag 20

<210> 5042
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5042
aaaaggaauu cugaauugau 20

<210> 5043
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5043
uaaaaggaau ucugaauuga 20

<210> 5044
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5044
uugaaaguau aaacuuuaaa 20

<210> 5045
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5045
uacuuucaaa uauuaaaaau 20

<210> 5046
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5046
aaauauuaaa aauugguuga 20

<210> 5047
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5047
aauauuaaaa auugguugaa 20

<210> 5048
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5048
uuaaaaauug guugaagggu 20

<210> 5049
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5049
uaaaaauugg uugaaggguu 20

<210> 5050
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5050
aaaaauuggu ugaaggguug 20

<210> 5051
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5051
ugguugaagg guuggggaug 20

<210> 5052
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5052
ggguugggga uguggcucag 20

<210> 5053
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5053
gacucaugaa ggcugggcag 20

<210> 5054
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5054
ggacucauga aggcugggca 20

<210> 5055
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5055
gggacucaug aaggcugggc   20

<210> 5056
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5056
cucagggacu caugaaggcu   20

<210> 5057
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5057
acucagggac ucaugaaggc   20

<210> 5058
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5058
uuuaacucag ggacucauga   20

<210> 5059
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5059
gcuucuggga auuuaacuca   20

<210> 5060
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5060
ugcuucuggg aauuuaacuc   20

<210> 5061
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5061
guuugucuua uacugcuucu 20

<210> 5062
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5062
uguuugucuu auacugcuuc 20

<210> 5063
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5063
accuuacuuc auccauuuuc 20

<210> 5064
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5064
gccagaaaau ggaugaagua 20

<210> 5065
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5065
uguguagcua ugccagaaaa 20

<210> 5066
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5066
cauaccugca auccuaguuc 20

<210> 5067
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5067
uuguccagaa cuaggauugc 20

<210> 5068
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5068
gcuugaauuu guccagaacu 20

<210> 5069
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5069
aguucuggac aaauucaagc 20

<210> 5070
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5070
aaugccaacc ucagcuacuu 20

<210> 5071
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5071
caaaccuaag uagcugaggu 20

<210> 5072
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5072
caaccucagc uacuuagguu 20

<210> 5073
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5073
aaccucagcu acuuagguuu 20

<210> 5074
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5074
agcccaaacc uaaguagcug 20

<210> 5075
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5075
cugagacccu gucuuaacau 20

<210> 5076
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5076
ugagacccug ucuuaacauu 20

<210> 5077
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5077
gagacccugu cuuaacauug 20

<210> 5078
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5078
agacccuguc uuaacauugg   20

<210> 5079
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5079
ucucccccaa uguuaagaca   20

<210> 5080
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5080
cucucccca auguuaagac   20

<210> 5081
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5081
uuaacauugg gggagagccu   20

<210> 5082
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5082
auuggggggag agccuaggcu   20

<210> 5083
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5083
uguauagcuc agccuagccu   20

<210> 5084
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5084
cuauacagua agccucuguc 20

<210> 5085
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5085
uauacaguaa gccucugucu 20

<210> 5086
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5086
caguaagccu cugucuggga 20

<210> 5087
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5087
uaagccucug ucugggaagg 20

<210> 5088
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5088
aagccucugu cugggaagga 20

<210> 5089
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5089
uuucccuccu ucccagacag 20

<210> 5090
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5090
ugucugggaa ggagggaaaa 20

<210> 5091
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5091
ugggaaggag ggaaaaagga 20

<210> 5092
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5092
gaaaaaggaa ggaaagacau 20

<210> 5093
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5093
gacauugguu gaaugacuug 20

<210> 5094
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5094
acauugguug aaugacuugu 20

<210> 5095
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5095
acuguauguu uagaguguuc 20

<210> 5096
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5096
cuguauguuu agaguguuca 20

<210> 5097
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5097
guuuagagug uucagggaaa 20

<210> 5098
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5098
uagaguguuc agggaaaagg 20

<210> 5099
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5099
aggucauuug cagagcagag 20

<210> 5100
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5100
auucgucuua ucugaguggc 20

<210> 5101
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5101
guguauucgu cuuaucugag 20

<210> 5102
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5102
caugaauaua gaagaaacag 20

<210> 5103
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5103
aauaaaagac acaagacugc 20

<210> 5104
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5104
cuaauaauau uucuaguguc 20

<210> 5105
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5105
cuugagauuu uauuuucaca 20

<210> 5106
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5106
cuugugaaaa uaaaaucuca 20

<210> 5107
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5107
aauaaaaucu caaggucaua 20

<210> 5108
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5108
uacggcaaac acaaagaaac 20

<210> 5109
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5109
gucuucagac acuccagaag 20

<210> 5110
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5110
ucuucagaca cuccagaaga 20

<210> 5111
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5111
cgagaucuga ugcccucuuc 20

<210> 5112
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5112
gagggcauca gaucucguua 20

<210> 5113
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5113
gcaucagauc ucguuacgga 20

<210> 5114
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5114
gaugguugug agccaccaug 20

<210> 5115
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5115
gugagccacc augugguugc 20

<210> 5116
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5116
ugagccacca ugugguugcu 20

<210> 5117
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5117
aaaucccagc aaccacaugg 20

<210> 5118
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5118
uucaaauccc agcaaccaca 20

<210> 5119
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5119
ggauuugaac uucagaccuu 20

<210> 5120
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5120
cagaccuucg gaagagcagu 20

<210> 5121
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5121
agaccuucgg aagagcaguc 20

<210> 5122
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5122
gcacccgacu gcucuuccga 20

<210> 5123
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5123
ggcuggugag auggcucagu 20

<210> 5124
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5124
gggcugguga gauggcucag 20

<210> 5125
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5125
ugagccaucu caccagcccc 20

<210> 5126
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5126
aaaaccuggg gcuggugaga 20

<210> 5127
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5127
agaaaaaaaa aaccuggggc 20

<210> 5128
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5128
acuaagaaaa aaaaaaccug 20

<210> 5129
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5129
aacuaagaaa aaaaaaaccu 20

<210> 5130
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5130
caacuaagaa aaaaaaaacc 20

<210> 5131
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5131
uauuguuauu cuuuugagac 20

<210> 5132
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5132
aggaucccac acugaaacuc 20

<210> 5133
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5133
gcuagccuga guuucagugu 20

<210> 5134
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5134
ggcuagccug aguuucagug 20

<210> 5135
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5135
ggcuagccuu caauuuccua 20

<210> 5136
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5136
ucaaauccau aggaaauuga 20

<210> 5137
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5137
ugcuaugagg ucaaauccau 20

<210> 5138
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5138
gaaacuggcu gacugcuaug 20

<210> 5139
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5139
agcacucaga agguggaaac 20

<210> 5140
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5140
aaaucuuagc acucagaagg 20

<210> 5141
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5141
uugaaaucuu agcacucaga 20

<210> 5142
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5142
ggaauuggguggugcuc 20

<210> 5143
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5143
aucuuaggaa uuggugugg 20

<210> 5144
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5144
cauaucuuag gaauugggug 20

<210> 5145
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5145
aaaaacauau cuuaggaauu 20

<210> 5146
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5146
uaaaaacaua ucuuaggaau 20

<210> 5147
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5147
cuugcuuaaa aacauaucuu   20

<210> 5148
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5148
cuaagauaug uuuuuaagca   20

<210> 5149
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5149
auguuuuuaa gcaagguuau   20

<210> 5150
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5150
cacgucauug caaaggguua   20

<210> 5151
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5151
acccuuugca augacguguc   20

<210> 5152
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5152
uccugacacg ucauugcaaa   20

<210> 5153
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5153
uuccugacac gucauugcaa 20

<210> 5154
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5154
gacaacugga aaaaaaaaaa 20

<210> 5155
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5155
uuuuuuuuuu uccaguuguc 20

<210> 5156
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5156
uuuuuuccag uugucaggcc 20

<210> 5157
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5157
ccaguuguca ggccuggcaa 20

<210> 5158
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5158
ccauugccag gccugacaac 20

<210> 5159
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5159
caggccuggc aauggagccc 20

<210> 5160
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5160
aggccuggca auggagccca 20

<210> 5161
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5161
gggcccuggg cuccauugcc 20

<210> 5162
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5162
uuuagcaagc acagggcccu 20

<210> 5163
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5163
guuuagcaag cacagggccc 20

<210> 5164
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5164
gcccugugcu ugcuaaacga 20

<210> 5165
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5165
gccaucguuu agcaagcaca 20

<210> 5166
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5166
agccaucguu uagcaagcac 20

<210> 5167
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5167
gcuggguaua uauaacuuag 20

<210> 5168
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5168
agcuggguau auauaacuua 20

<210> 5169
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5169
aagcugggua uauauaacuu 20

<210> 5170
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5170
auauauaccc agcuuauccc 20

<210> 5171
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5171
gaaagauccu gggauaagcu 20

<210> 5172
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5172
agaaagaucc ugggauaagc 20

<210> 5173
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5173
gaaagucuga gaaagauccu 20

<210> 5174
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5174
agaaagucug agaaagaucc 20

<210> 5175
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5175
cuaucgaugu ugcuucucuu 20

<210> 5176
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5176
cuuuuuguga gaaaagagca 20

<210> 5177
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5177
ucuaagcaag aacccuuguc 20

<210> 5178
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5178
aucucucuga cuccagacaa 20

<210> 5179
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5179
uaucucucug acuccagaca 20

<210> 5180
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5180
gucagagaga uagcuuaguc 20

<210> 5181
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5181
uuuaaacaag aaaaguucug 20

<210> 5182
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5182
uuuuaaacaa gaaaaguucu 20

<210> 5183
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5183
uuuuuaaaca agaaaaguuc 20

<210> 5184
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5184
caaacaaaca aacaaaaacu 20

<210> 5185
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5185
caaaaacuag gcaugacagc 20

<210> 5186
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5186
acuaggcaug acagcuggag 20

<210> 5187
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5187
aggcaugaca gcuggagagg 20

<210> 5188
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5188
auuaacagca cuuguuaaag 20

<210> 5189
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5189
uguuaaagag gaccucagcu 20

<210> 5190
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5190
aggaccucag cuugguuccc 20

<210> 5191
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5191
ggaccucagc uugguuccca 20

<210> 5192
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5192
gagcccuggg aaccaagcug 20

<210> 5193
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5193
aacuggaguu auagagcccu   20

<210> 5194
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5194
gaacuggagu uauagagccc   20

<210> 5195
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5195
ggcucuauaa cuccaguucc   20

<210> 5196
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5196
gcucuauaac uccaguucca   20

<210> 5197
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5197
gcugucugag gcccuggaac   20

<210> 5198
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5198
caggaggcug ucugaggccc   20

<210> 5199
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5199
aggcuacagg aggcugucug 20

<210> 5200
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5200
augcaugaag aggcuacagg 20

<210> 5201
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5201
cugaugcaug aagaggcuac 20

<210> 5202
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5202
gccucuucau gcaucagaca 20

<210> 5203
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5203
accaugucug augcaugaag 20

<210> 5204
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5204
gacauggucc auaugcaugc 20

<210> 5205
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5205
guguuugacc ugcaugcaua 20

<210> 5206
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5206
aaaaauaaaa gucuaaaaaa 20

<210> 5207
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5207
caugcuauaa ucccagugcu 20

<210> 5208
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5208
augcuauaau cccagugcua 20

<210> 5209
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5209
cuauaauccc agugcuaggg 20

<210> 5210
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5210
acauuugccu cccuagcacu 20

<210> 5211
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5211
gacauuugcc ucccuagcac 20

<210> 5212
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5212
gugcuaggga ggcaaauguc 20

<210> 5213
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5213
ggcaaauguc uggaccuugu 20

<210> 5214
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5214
aaugucugga ccuugucggu 20

<210> 5215
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5215
gacugacugg ccgaccgaca 20

<210> 5216
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5216
ugacuggcug gcugacugac 20

<210> 5217
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5217
gcuaggcuag acugacuggc 20

<210> 5218
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5218
cuaugcuagg cuagacugac 20

<210> 5219
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5219
cuagccuagc auagccuacu 20

<210> 5220
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5220
cacaccuagu aggcuaugcu 20

<210> 5221
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5221
ugggcuggag cacaccuagu 20

<210> 5222
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5222
gacaaggucu cucauugggc 20

<210> 5223
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5223
uagagacaag gucucucauu 20

<210> 5224
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5224
uuagagacaa ggucucucau 20

<210> 5225
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5225
agaccuuguc ucuaaaaaaa 20

<210> 5226
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5226
gaccuugucu cuaaaaaaaa 20

<210> 5227
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5227
uacccuuuuu uuuagagaca 20

<210> 5228
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5228
gguagaaaga aaagacaaaa 20

<210> 5229
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5229
gacaaaaugg augucuccug 20

<210> 5230
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5230
cuccugagga augauaccca 20

<210> 5231
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5231
auccgugggu aucauuccuc 20

<210> 5232
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5232
ggacaauugu ggguauccgu 20

<210> 5233
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5233
aggacaauug uggguauccg 20

<210> 5234
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5234
ggauacccac aauuguccuc 20

<210> 5235
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5235
ggagaccaga ggacaauugu 20

<210> 5236
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5236
cggagaccag aggacaauug 20

<210> 5237
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5237
guauugcaca cggagaccag 20

<210> 5238
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5238
acauggguuu guauugcaca 20

<210> 5239
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5239
uguugcaaau auucagacau 20

<210> 5240
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5240
cuguugcaaa uauucagaca 20

<210> 5241
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5241
caugucugaa uauuugcaac 20

<210> 5242
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5242
augucugaau auuugcaaca 20

<210> 5243
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5243
agcacagcuu uacuagauga 20

<210> 5244
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5244
aagcacagcu uuacuagaug 20

<210> 5245
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5245
caucuaguaa agcugugcuu 20

<210> 5246
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5246
gaaaaauaag acagauggga 20

<210> 5247
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5247
agaaaaauaa gacagauggg 20

<210> 5248
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5248
aguagaaaaa uaagacagau 20

<210> 5249
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5249
caguagaaaa auaagacaga 20

<210> 5250
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5250
caucugucuu auuuuucuac 20

<210> 5251
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5251
auuuuucuac uggugugcua 20

<210> 5252
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5252
gugcuaaggc accaugacca 20

<210> 5253
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5253
ucucuaaguu gccuugguca 20

<210> 5254
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5254
ucuucuucuc uaaguugccu 20

<210> 5255
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5255
gaagaagaaa caguuuauug 20

<210> 5256
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5256
aagaagaaac aguuuauuga 20

<210> 5257
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5257
uugaggguuu auaguuauag 20

<210> 5258
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5258
ugaggguuua uaguuauaga 20

<210> 5259
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5259
guuuauaguu auagagggua 20

<210> 5260
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5260
uaguuauaga ggguaaggca 20

<210> 5261
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5261
uagaggguaa ggcaaggacu 20

<210> 5262
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5262
uaaggcaagg acuugguagc 20

<210> 5263
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5263
gcaaggacuu gguagcaggc 20

<210> 5264
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5264
ggacuuggua gcaggcaggc 20

<210> 5265
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5265
uugguagcag gcaggcaggc 20

<210> 5266
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5266
agcaggcagg caggcaggca 20

<210> 5267
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5267
caggcaggca ggcaugguac 20

<210> 5268
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5268
caugguacug guguaguagc 20

<210> 5269
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5269
augguacugg uguaguagcu 20

<210> 5270
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5270
ggagcuugua ucuugagaca 20

<210> 5271
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5271
aaagcugaga gauagcuaag 20

<210> 5272
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5272
aagcugagag auagcuaagu 20

<210> 5273
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5273
gagagauagc uaaggggcc 20

<210> 5274
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5274
agguuucaaa agcucacacc 20

<210> 5275
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5275
uuucacuggg gacagcuuug 20

<210> 5276
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5276
uugauggagg cauuucacug 20

<210> 5277
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5277
guugauggag gcauuucacu 20

<210> 5278
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5278
uguugaugga ggcauuucac 20

<210> 5279
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5279
gugaaaugcc uccaucaaca 20

<210> 5280
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5280
aggugguggcc uuguugaugg 20

<210> 5281
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5281
guuaggugug gccuuguuga 20

<210> 5282
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5282
uguuugggaa ggguuaggug 20

<210> 5283
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5283
agaacuguuu gggaaggguu 20

<210> 5284
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5284
uugguagaac uguuugggaa 20

<210> 5285
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5285
guugguagaa cuguuuggga 20

<210> 5286
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5286
ucccaaacag uucuaccaac 20

<210> 5287
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5287
cccaaacagu ucuaccaacu 20

<210> 5288
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5288
cccaguuggu agaacuguuu 20

<210> 5289
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5289
ucccaguugg uagaacuguu 20

<210> 5290
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5290
augaaugcuu gguucccagu 20

<210> 5291
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5291
cugaggcuca uaugaaugcu 20

<210> 5292
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5292
caagcauuca uaugagccuc 20

<210> 5293
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5293
aagcauucau augagccuca 20

<210> 5294
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5294
agcauucaua ugagccucag 20

<210> 5295
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5295
ugaaugagac ugcucccccug 20

<210> 5296
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5296
guacucagua cacugcccca 20

<210> 5297
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5297
uacucaguac acugccccau 20

<210> 5298
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5298
uuagaggacu ucugcccaug 20

<210> 5299
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5299
uuuagaggac uucugcccau 20

<210> 5300
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5300
guuuagagga cuucugccca 20

<210> 5301
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5301
augggcagaa guccucuaaa 20

<210> 5302
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5302
acacauuagu aaccguuuag 20

<210> 5303
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5303
uaucccucac cauacuuaga 20

<210> 5304
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5304
uuuccuucua aguaugguga 20

<210> 5305
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5305
guuuccuucu aaguauggug 20

<210> 5306
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5306
ggcuuguuuc cuucuaagua 20

<210> 5307
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5307
ggaaacaagc caucccaaaa 20

<210> 5308
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5308
ucaugcuauc cauuuuggga 20

<210> 5309
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5309
ugagucaugc uauccauuuu 20

<210> 5310
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5310
cugagucaug cuauccauuu 20

<210> 5311
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5311
uugcucuggg ugaaguacac 20

<210> 5312
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5312
uacuucaccc agagcaaaug 20

<210> 5313
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5313
acccagagca aauguggaua 20

<210> 5314
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5314
accguaucca cauuugcucu 20

<210> 5315
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5315
caccguaucc acauuugcuc 20

<210> 5316
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5316
cagagcaaau guggauacgg 20

<210> 5317
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5317
agagcaaaug uggauacggu 20

<210> 5318
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5318
guggauacgg ugggaaacag 20

<210> 5319
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5319
gggaaacaga ggacagugau 20

<210> 5320
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5320
aggacaguga uaggacacaa 20

<210> 5321
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5321
gucucaguuu cuaguucaga 20

<210> 5322
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5322
agacauaaac caacacacau 20

<210> 5323
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5323
uguaucuuuc cuaugugugu 20

<210> 5324
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5324
auaggaaaga uacacuccac 20

<210> 5325
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5325
agauacacuc cacuggacag 20

<210> 5326
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5326
gauacacucc acuggacagu 20

<210> 5327
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5327
caugggcucc cacuguccag 20

<210> 5328
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5328
caguggggagc ccaugcacaa 20

<210> 5329
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5329
gcccaugcac aaagguucuu 20

<210> 5330
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5330
gccaaagaac cuuugugcau 20

<210> 5331
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5331
agccaaagaa ccuuugugca 20

<210> 5332
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5332
ugacagcagu uucuuauuau 20

<210> 5333
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5333
gacagcaguu ucuuauuauu 20

<210> 5334
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5334
gaugagcuuu guuucugccc 20

<210> 5335
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5335
augagcuuug uuucugcccu 20

<210> 5336
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5336
cccuggguga gaguuuauuu 20

<210> 5337
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5337
ccuaaauaaa cucucaccca 20

<210> 5338
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5338
uccuaaauaa acucucaccc 20

<210> 5339
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5339
cacacuaaga caaccacuga 20

<210> 5340
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5340
acuuuguucu aggccaucag 20

<210> 5341
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5341
cagugcucug acuuuguucu 20

<210> 5342
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5342
agucagagca cugugcguug 20

<210> 5343
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5343
cacugugcgu uguggaucuu 20

<210> 5344
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5344
gaugcuuuaa ucaucaugaa 20

<210> 5345
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5345
acuaacacau uuuaauagga 20

<210> 5346
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5346
auggacuaac acauuuuaau 20

<210> 5347
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5347
aaaauguguu aguccauuuu 20

<210> 5348
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5348
aaauguguua guccauuuuu 20

<210> 5349
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5349
aauguguuag uccauuuuug 20

<210> 5350
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5350
aguaaacaua accccaaaaa 20

<210> 5351
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5351
ggguuauguu uacuauacaa 20

<210> 5352
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5352
uuauguuuac uauacaaagg 20

<210> 5353
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5353
guuuacuaua caaaggugga 20

<210> 5354
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5354
uuuacuauac aaagguggaa 20

<210> 5355
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5355
uuacuauaca aagguggaag 20

<210> 5356
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5356
caaaggugga agggguuauc 20

<210> 5357
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5357
guuaucuggc cccaucuuac 20

<210> 5358
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5358
acacaguuac cuguaagaug 20

<210> 5359
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5359
gacacaguua ccuguaagau 20

<210> 5360
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5360
ggacacaguu accuguaaga 20

<210> 5361
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5361
agguaacugu gucccuuuug 20

<210> 5362
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5362
ugguuuuuau auccacaaaa 20

<210> 5363
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5363
augguuuuua uauccacaaa 20

<210> 5364
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5364
aauaaaauug caguaucuga 20

<210> 5365
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5365
uauuuuugau uaugugucug 20

<210> 5366
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5366
auuuuugauu augugucuga 20

<210> 5367
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5367
caguaugcac aucugcaugc 20

<210> 5368
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5368
caucugcaug caggugccug 20

<210> 5369
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5369
caggugccug uggaagccug 20

<210> 5370
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5370
augucuccac aggcuuccac 20

<210> 5371
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5371
aggugaucug augucuccac 20

<210> 5372
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5372
gacaucagau caccugaagc 20

<210> 5373
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5373
ucaccugaag cuggaguuuc 20

<210> 5374
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5374
cugccugaaa cuccagcuuc 20

<210> 5375
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5375
aguuuuaugc caccagacac 20

<210> 5376
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5376
uucucagcac cagugucugg 20

<210> 5377
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5377
cuauucucag caccaguguc   20

<210> 5378
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5378
auaaaauaua cugcuuuugc   20

<210> 5379
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5379
guugcuuuug gcuggagaga   20

<210> 5380
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5380
uuuuaaaggu ugcuuuuggc   20

<210> 5381
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5381
cagcuuuuaa agguugcuuu   20

<210> 5382
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5382
aaagcaaccu uuaaaagcug   20

<210> 5383
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5383
acauaaacca cagcuuuuaa 20

<210> 5384
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5384
cucuaagugg augaauuaaa 20

<210> 5385
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5385
cauuuaauuc auccacuuag 20

<210> 5386
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5386
auuuaauuca uccacuuaga 20

<210> 5387
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5387
auugaagugu acccucuaag 20

<210> 5388
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5388
aaaauaugcu uacagaucug 20

<210> 5389
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5389
aaauaugcuu acagaucugu 20

<210> 5390
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5390
ugcuaaaagg guucuaaaau 20

<210> 5391
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5391
uaauaucugu agugcuaaaa 20

<210> 5392
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5392
uuaauaucug uagugcuaaa 20

<210> 5393
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5393
gcuggggcu ggggagaaua 20

<210> 5394
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5394
agcuggggggc uggggagaau 20

<210> 5395
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5395
gggacuggag cuggggggcug 20

<210> 5396
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5396
agggacugga gcuggggggcu 20

<210> 5397
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5397
cagggacugg agcuggggggc 20

<210> 5398
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5398
cagcccccag cuccaguccc 20

<210> 5399
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5399
augccaggga cuggagcugg 20

<210> 5400
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5400
gaugccaggg acuggagcug 20

<210> 5401
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5401
ggaugccagg gacuggagcu 20

<210> 5402
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5402
uggaugccag ggacuggagc 20

<210> 5403
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5403
gauuugugga ugccagggac 20

<210> 5404
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5404
aaggggauuu guggaugcca 20

<210> 5405
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5405
gaaggggauu uguggaugcc 20

<210> 5406
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5406
gauggcagga aggggauuug 20

<210> 5407
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5407
aaucuauaga uggcaggaag 20

<210> 5408
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5408
gaaucuauag auggcaggaa 20

<210> 5409
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5409
ugaaucuaua gauggcagga 20

<210> 5410
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5410
gaggugaauc uauagauggc 20

<210> 5411
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5411
agaagaggug aaucuauaga 20

<210> 5412
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5412
uucaguguaa agucuagaag 20

<210> 5413
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5413
uucuagacuu uacacugaaa 20

<210> 5414
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5414
aaaugguauu acacaacaug 20

<210> 5415
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5415
uugcuugccg ugugucugug 20

<210> 5416
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5416
agaugaaccu cacagacaca 20

<210> 5417
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5417
ucaucugugu ugagcaugaa 20

<210> 5418
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5418
uaggcgacag gcauauucau 20

<210> 5419
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5419
uuaggcgaca ggcauauuca 20

<210> 5420
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5420
guguugcuau uuuaggcgac 20

<210> 5421
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5421
ugugaaagug uugcuauuuu 20

<210> 5422
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5422
ccuucuuucu ucuucccaag 20

<210> 5423
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5423
ccucuuggga agaagaaaga   20

<210> 5424
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5424
cuucuuucuu cuucccaaga   20

<210> 5425
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5425
gcugcaauaa ugucccucuu   20

<210> 5426
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5426
ggcugcaaua augucccucu   20

<210> 5427
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5427
agacacagga gaaaacuagc   20

<210> 5428
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5428
agaaacacga aaaaagacac   20

<210> 5429
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5429
cguguuucuc aaguagauga 20

<210> 5430
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5430
guguuucuca aguagaugaa 20

<210> 5431
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5431
ucucaaguag augaagggac 20

<210> 5432
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5432
uuaggaaacu gacaaagcag 20

<210> 5433
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5433
uuuaggaaac ugacaaagca 20

<210> 5434
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5434
auuuaggaaa cugacaaagc 20

<210> 5435
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5435
aauacaguau ucacucauuu 20

<210> 5436
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5436
aaaugaguga auacuguauu 20

<210> 5437
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5437
uauuuugguc uuucugauug 20

<210> 5438
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5438
uuauuuuggu cuuucugauu 20

<210> 5439
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5439
auuauuuugg ucuuucugau 20

<210> 5440
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5440
gagauuauuu uaaauuauuu 20

<210> 5441
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5441
aucucgucuc uauaucacua 20

<210> 5442
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5442
cuaagguauc cuuuuccacu 20

<210> 5443
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5443
uaagguaucc uuuuccacuu 20

<210> 5444
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5444
cugcauggcc caaguggaaa 20

<210> 5445
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5445
auuucucugc auggcccaag 20

<210> 5446
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5446
ggcaugcuua uuucucugca 20

<210> 5447
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5447
ggguggggug gggucaauca 20

<210> 5448
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5448
cuggggguug ggguggggug 20

<210> 5449
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5449
acuggggguu gggguggggu 20

<210> 5450
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5450
cacugggggu ugggguuggg 20

<210> 5451
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5451
caccccaccc caacccccag 20

<210> 5452
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5452
caccacuggg gguuggggug 20

<210> 5453
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5453
ucaccacugg ggguuggggu 20

<210> 5454
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5454
gucaccacug gggguuuggg 20

<210> 5455
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5455
cuugucacca cuggggguug 20

<210> 5456
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5456
cccaaccccc aguggugaca 20

<210> 5457
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5457
ccuugucacc acuggggguu 20

<210> 5458
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5458
uccuugucac cacugggggu 20

<210> 5459
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5459
gagguccuug ucaccacugg 20

<210> 5460
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5460
ggagguccuu gucaccacug 20

<210> 5461
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5461
gggagguccu ugucaccacu 20

<210> 5462
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5462
ggggaggucc uugucaccac 20

<210> 5463
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5463
ggugacaagg accuccccag 20

<210> 5464
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5464
aaaugguuga gccgcugggg 20

<210> 5465
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5465
uucaaauggu ugagccgcug 20

<210> 5466
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5466
auucaaaugg uugagccgcu 20

<210> 5467
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5467
uauucaaaug guugagccgc 20

<210> 5468
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5468
gcucaaccau uugaauaaaa 20

<210> 5469
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5469
aaguguccuu uuuauucaaa 20

<210> 5470
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5470
aucuuagauu ugugcaaaau 20

<210> 5471
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5471
caucuuagau uugugcaaaa 20

<210> 5472
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5472
acaaaucuaa gaugagcaag 20

<210> 5473
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5473
gucaccugua aacaugugcc 20

<210> 5474
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5474
ugcuccaggc acauguuuac 20

<210> 5475
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5475
guaaacaugu gccuggagca 20

<210> 5476
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5476
cucaggucgu uccgugcucc 20

<210> 5477
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5477
gagcacggaa cgaccugagu 20

<210> 5478
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5478
cgaccugagu aggcagaaaa 20

<210> 5479
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5479
ccugaguagg cagaaaaagg 20

<210> 5480
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5480
ccaccuuuuu cugccuacuc 20

<210> 5481
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5481
auuuaugauu uuucuuuuaa 20

<210> 5482
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5482
agugagaaag gugggggaaa 20

<210> 5483
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5483
uuggaaagug agaaaggugg 20

<210> 5484
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5484
guuggaaagu gagaaaggug 20

<210> 5485
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5485
uguuggaaag ugagaaaggu 20

<210> 5486
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5486
uuguuggaaa gugagaaagg 20

<210> 5487
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5487
auauuguugg aaagugagaa 20

<210> 5488
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5488
uuuccaacaa uauuauauuc 20

<210> 5489
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5489
acaccagaau auaauauugu 20

<210> 5490
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5490
cuuuuauucc ccaguuguuu 20

<210> 5491
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5491
uuuaaucacc aaaacaacug 20

<210> 5492
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5492
auuuaaucac caaaacaacu 20

<210> 5493
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5493
gauuuaauca ccaaaacaac 20

<210> 5494
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5494
uuuuggugau uaaaucauuu 20

<210> 5495
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5495
uuuggugauu aaaucauuuu 20

<210> 5496
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5496
uuggugauua aaucauuuug 20

<210> 5497
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5497
uggugauuaa aucauuuugg 20

<210> 5498
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5498
acucucauuc acugcucccu 20

<210> 5499
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5499
aaaaaaaaca cugucaccaa 20

<210> 5500
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5500
gaaaaaaaac acugucacca 20

<210> 5501
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5501
gcagagacag agggaacagc 20

<210> 5502
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5502
ugaaaaugag cagagacaga 20

<210> 5503
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5503
augaaaauga gcagagacag 20

<210> 5504
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5504
cugucucugc ucauuuucau 20

<210> 5505
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5505
ugcucauuuu cauaggaauc 20

<210> 5506
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5506
aucuggcacc uuagaauccc 20

<210> 5507
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5507
gcaggcagcc ugggauucua 20

<210> 5508
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5508
cauuugacug caggcagccu 20

<210> 5509
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5509
gcauuugacu gcaggcagcc 20

<210> 5510
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5510
ccugcaguca aaugcuugcu 20

<210> 5511
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5511
ccuagcaagc auuugacugc 20

<210> 5512
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5512
cugcagucaa augcuugcua 20

<210> 5513
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5513
cagucaaaug cuugcuaggg 20

<210> 5514
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5514
agucaaaugc uugcuaggga 20

<210> 5515
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5515
gucaaaugcu ugcuagggag   20

<210> 5516
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5516
uugcuaggga ggggagccag   20

<210> 5517
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5517
ugcuagggag gggagccagu   20

<210> 5518
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5518
uagggagggg agccaguggg   20

<210> 5519
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5519
agggagggga gccagugggu   20

<210> 5520
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5520
gggaggggag ccagugggug   20

<210> 5521
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5521
ggaggggagc cagugggugg 20

<210> 5522
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5522
uugcagguuc ccccacccac 20

<210> 5523
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5523
auuuggaguu gauuucuugc 20

<210> 5524
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5524
aaaucaacuc caaauuuaau 20

<210> 5525
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5525
gagcuuaguc cuauuaaauu 20

<210> 5526
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5526
cugcuaauca ggcauggugu 20

<210> 5527
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5527
accaugccug auuagcagcu 20

<210> 5528
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5528
accuagcugc uaaucaggca 20

<210> 5529
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5529
augagaccua gcugcuaauc 20

<210> 5530
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5530
ggucucaucc uuaccccucc 20

<210> 5531
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5531
uccuuacccc uccaggaaua 20

<210> 5532
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5532
uccuuauucc uggaggggua 20

<210> 5533
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5533
uaccccucca ggaauaagga 20

<210> 5534
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5534
aaccuuccuu auuccuggag 20

<210> 5535
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5535
caaccuuccu uauuccugga 20

<210> 5536
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5536
gcaaccuucc uuauuccugg 20

<210> 5537
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5537
ucugcaaccu uccuuauucc 20

<210> 5538
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5538
agguugcaga agucccugaa 20

<210> 5539
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5539
ggcucagcaa auaccuuuca 20

<210> 5540
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5540
aggcucagca aauaccuuuc 20

<210> 5541
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5541
gcugagccuc uugugaaccg 20

<210> 5542
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5542
cugagccucu ugugaaccgu 20

<210> 5543
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5543
gccucuugug aaccgugggu 20

<210> 5544
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5544
gccaacccac gguucacaag 20

<210> 5545
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5545
aguucaggug agccaaccca 20

<210> 5546
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5546
aagaauaucu acuaaaguuc 20

<210> 5547
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5547
auauucuuua gcgacauauu 20

<210> 5548
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5548
uauucuuuag cgacauauuu 20

<210> 5549
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5549
uuagcgacau auuugggcuu 20

<210> 5550
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5550
uguggagaga uaaaagagag 20

<210> 5551
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5551
uuaucucucc acaaaagucu 20

<210> 5552
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5552
ucaguuugcc aagacuuuug 20

<210> 5553
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5553
ugauguuuau gcaaccagua 20

<210> 5554
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5554
uaugcaacca guaaggccuc 20

<210> 5555
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5555
augcaaccag uaaggccucu 20

<210> 5556
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5556
ugcaaccagu aaggccucug 20

<210> 5557
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5557
cucagcccca gaggccuuac 20

<210> 5558
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5558
caguaaggcc ucuggggcug 20

<210> 5559
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5559
aguaaggccu cuggggcuga 20

<210> 5560
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5560
guaaggccuc uggggcugag 20

<210> 5561
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5561
uaaggccucu ggggcugagg 20

<210> 5562
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5562
ggccucuggg gcugaggggg 20

<210> 5563
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5563
gccucugggg cugaggggu 20

<210> 5564
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5564
ucccaccccc ucagccccag 20

<210> 5565
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5565
cugagggggu gggaagccag 20

<210> 5566
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5566
ugaggggug ggaagccagu 20

<210> 5567
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5567
ggggguggga agccaguggg 20

<210> 5568
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5568
ggugggaagc cagugggugg 20

<210> 5569
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5569
uugcagguuc cgccacccac 20

<210> 5570
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5570
auuuggggcg gauuucuugc 20

<210> 5571
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5571
agaaauccgc cccaaauuua 20

<210> 5572
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5572
augcuuccuu aaauuugggg 20

<210> 5573
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5573
ccccaaauuu aaggaagcau 20

<210> 5574
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5574
ccuaugcuuc cuuaaauuug 20

<210> 5575
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5575
uccuaugcuu ccuuaaauuu 20

<210> 5576
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5576
uuccuaugcu uccuuaaauu 20

<210> 5577
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5577
ccuacccuau gucugccuug 20

<210> 5578
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5578
ccacaaggca gacauagggu 20

<210> 5579
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5579
cuagccacaa ggcagacaua 20

<210> 5580
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5580
ccuaugucug ccuuguggcu 20

<210> 5581
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5581
ccuagccaca aggcagacau 20

<210> 5582
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5582
gaacuaagga ccuagccaca 20

<210> 5583
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5583
uccuuaguuc auugucucuu 20

<210> 5584
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5584
accuaagaga caaugaacua   20

<210> 5585
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5585
uucuacucuc aagagaaucu   20

<210> 5586
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5586
cuucuacucu caagagaauc   20

<210> 5587
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5587
cagauucucu ugagaguaga   20

<210> 5588
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5588
auucucuuga gaguagaagg   20

<210> 5589
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5589
ucucggauuu guuaaucagg   20

<210> 5590
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5590
uccugauuaa caaauccgag 20

<210> 5591
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5591
accucucgga uuuguuaauc 20

<210> 5592
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5592
uucaugagau uagcaccucu 20

<210> 5593
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5593
gcuaaucuca ugaauucucc 20

<210> 5594
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5594
ucaugaauuc ucccggacua 20

<210> 5595
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5595
gcuauauaua accauagucc 20

<210> 5596
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5596
agcuauauau aaccauaguc 20

<210> 5597
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5597
ucagugaucu cauguagcuu 20

<210> 5598
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5598
ugaucucaug uagcuuaggc 20

<210> 5599
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5599
cucauguagc uuaggcuggc 20

<210> 5600
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5600
uugagcucac uaugaagcaa 20

<210> 5601
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5601
aaggaugacc cugaacuucu 20

<210> 5602
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5602
caggaaaacc aagaaguuca 20

<210> 5603
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5603
gcaggaaaac caagaaguuc 20

<210> 5604
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5604
agcacuugga agaugaaagc 20

<210> 5605
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5605
auucuuguaa ucgcagcacu 20

<210> 5606
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5606
gcugccaugu cuaguucaug 20

<210> 5607
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5607
agcaccacau gaacuagaca   20

<210> 5608
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5608
ugucuaguuc auguggugcu   20

<210> 5609
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5609
gucuaguuca uguggugcua   20

<210> 5610
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5610
ggugcuaggg aucaacccug   20

<210> 5611
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5611
uuaacaugca caaagccuca   20

<210> 5612
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5612
cuuaacaugc acaaagccuc   20

<210> 5613
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5613
auucuuuuga gucaggguca 20

<210> 5614
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5614
uauucuuuug agucaggguc 20

<210> 5615
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5615
ugacccugac ucaaaagaau 20

<210> 5616
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5616
gacccugacu caaaagaaua 20

<210> 5617
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5617
acccugacuc aaaagaauag 20

<210> 5618
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5618
cccugacuca aaagaauagg 20

<210> 5619
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5619
cccccuauuc uuuugaguca 20

<210> 5620
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5620
ccugacucaa aagaauaggg 20

<210> 5621
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5621
ccccccuauu cuuuugaguc 20

<210> 5622
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5622
cugacucaaa agaauagggg 20

<210> 5623
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5623
acucaaaaga auaggggggg 20

<210> 5624
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5624
aaaagaauag ggggggagga 20

<210> 5625
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5625
gaauaggggg ggaggaagga 20

<210> 5626
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5626
agggggggag gaaggaagga 20

<210> 5627
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5627
ggggaggaag gaaggaagga 20

<210> 5628
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5628
aggaaggaag gaaggaagga 20

<210> 5629
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5629
aggaaggaag gaaggaagga 20

<210> 5630
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5630
ggaaggaagg aaggaaggaa 20

<210> 5631
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5631
aggaaggaag gaaggaaggg 20

<210> 5632
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5632
ggaaggaagg aaggaaggga 20

<210> 5633
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5633
aggaaggaag gaagggaggg 20

<210> 5634
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5634
ggaaggaagg aagggaggga 20

<210> 5635
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5635
aggaaggaag ggagggaggg 20

<210> 5636
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5636
ggaaggaagg gagggaggga 20

<210> 5637
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5637
aggaagggag ggagggaggg 20

<210> 5638
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5638
ggaagggagg gagggaggga 20

<210> 5639
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5639
agggagggag ggagggaggg 20

<210> 5640
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5640
gggagggagg gagggaggga 20

<210> 5641
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5641
agggagggag ggagggaggg 20

<210> 5642
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5642
gggagggagg gagggaggga 20

<210> 5643
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5643
agggagggag ggagggaggg 20

<210> 5644
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5644
gggagggagg gagggaggga 20

<210> 5645
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5645
agggagggag ggagggaggg 20

<210> 5646
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5646
gggagggagg gagggaggga 20

<210> 5647
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5647
agggagggag ggagggaggg 20

<210> 5648
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5648
gggagggagg gagggaggga 20

<210> 5649
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5649
agggagggag ggagggaggg 20

<210> 5650
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5650
agggagggag ggagggagga 20

<210> 5651
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5651
gauguugaga acaaaagcca 20

<210> 5652
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5652
gaacaaaagc caaggccaac 20

<210> 5653
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5653
gccaaggcca acaggugagu 20

<210> 5654
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5654
ccaaggccaa caggugaguu 20

<210> 5655
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5655
cccaacucac cuguuggccu 20

<210> 5656
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5656
ccaacaggug aguugggauu 20

<210> 5657
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5657
ccuaauccca acucaccugu 20

<210> 5658
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5658
aaaaguccuu uucauagcaa 20

<210> 5659
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5659
aaaguccuuu ucauagcaaa 20

<210> 5660
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5660
aaguccuuuu cauagcaaag 20

<210> 5661
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5661
acaucccuu ugcuaugaaa 20

<210> 5662
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5662
uuuucauagc aaaggggaug 20

<210> 5663
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5663
guggaagaag agaaguugac 20

<210> 5664
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5664
agagaaguug acagguaagu 20

<210> 5665
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5665
gagaaguuga cagguaagua 20

<210> 5666
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5666
agaaaaaaga aaaaaaucug 20

<210> 5667
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5667
aagaaaaaaa ucuguggacc 20

<210> 5668
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5668
agaaaaaaau cuguggacca 20

<210> 5669
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5669
aaaaucugug gaccagggca 20

<210> 5670
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5670
cugcguuucu ugccaugccc 20

<210> 5671
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5671
gagcaaaugu ucauaaagag 20

<210> 5672
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5672
caaauguuca uaaagagagg 20

<210> 5673
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5673
aaauguucau aaagagaggu 20

<210> 5674
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5674
guucauaaag agaggugggc 20

<210> 5675
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5675
cauaaagaga ggugggcagg 20

<210> 5676
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5676
ggugggcagg aggcagacca   20

<210> 5677
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5677
ucugaugagu cuugagacca   20

<210> 5678
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5678
caagacucau cagagagaua   20

<210> 5679
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5679
agagauaagg caauauccug   20

<210> 5680
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5680
uccugaggag cacccaucug   20

<210> 5681
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5681
ccugaggagc acccaucuga   20

<210> 5682
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5682
cccucagaug ggugcuccuc 20

<210> 5683
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5683
cugaggagca cccaucugag 20

<210> 5684
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5684
uugcucaacg ccccucagau 20

<210> 5685
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5685
cuugcucaac gccccucaga 20

<210> 5686
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5686
ucugaggggc guugagcaag 20

<210> 5687
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5687
cugaggggcg uugagcaagu 20

<210> 5688
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5688
cauuucucug cauucacaga 20

<210> 5689
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5689
uucucugcau ucacagaugg 20

<210> 5690
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5690
ugcaacuauc uuuagcagug 20

<210> 5691
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5691
ucuuuagcag ugaggcaugc 20

<210> 5692
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5692
cuuuagcagu gaggcaugcu 20

<210> 5693
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5693
augcugggua gugcuaagag 20

<210> 5694
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5694
ugcuggguag ugcuaagagc 20

<210> 5695
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5695
uggguagugc uaagagcggg 20

<210> 5696
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5696
ggguagugcu aagagcgggc 20

<210> 5697
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5697
gguagugcua agagcgggcg 20

<210> 5698
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5698
cuaagagcgg gcggggucug 20

<210> 5699
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5699
agcgggcggg gucuguggaa 20

<210> 5700
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5700
gcggggucug uggaauggag 20

<210> 5701
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5701
aaugacgugg uaauaaggag 20

<210> 5702
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5702
aguaaaauga cgugguaaua 20

<210> 5703
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5703
uaaucaaaag uaaaaugacg 20

<210> 5704
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5704
cuauguaucu ugccucuuga 20

<210> 5705
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5705
guacuugugu gaccgucaag 20

<210> 5706
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5706
aguacuucca guugaagagu 20

<210> 5707
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5707
uguaaugccu acucuucaac 20

<210> 5708
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5708
guugaagagu aggcauuaca 20

<210> 5709
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5709
ucugcuucca ugaauauucu 20

<210> 5710
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5710
cugcuuccau gaauauucua 20

<210> 5711
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5711
aaugugcccu agaauauuca 20

<210> 5712
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5712
cuagggcaca uuuuuauucc 20

<210> 5713
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5713
ugcuuucaua uauuuuuucc 20

<210> 5714
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5714
aaagcauuuc uaauuaugaa 20

<210> 5715
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5715
uuucuaauua ugaauggaau 20

<210> 5716
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5716
cuaauuauga auggaauugg 20

<210> 5717
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5717
ugaauggaau uggugguuua 20

<210> 5718
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5718
gaauggaauu ggugguuuau 20

<210> 5719
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5719
aauggaauug gugguuuaug 20

<210> 5720
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5720
ggaacacaua ugcucagccu 20

<210> 5721
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5721
gguuuuggua auuuauucca 20

<210> 5722
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5722
auaaauuacc aaaaccaaag   20

<210> 5723
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5723
gagucuagcc ucuuugguuu   20

<210> 5724
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5724
agaagggagu cuagccucuu   20

<210> 5725
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5725
gcuucuguug aucgguagaa   20

<210> 5726
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5726
ugcuucuguu gaucgguaga   20

<210> 5727
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5727
ucuuauaugc uucuguugau   20

<210> 5728
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5728
caacagaagc auauaagagu 20

<210> 5729
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5729
uucucuacuc uaccaacuug 20

<210> 5730
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5730
cuacucuacc aacuuguggu 20

<210> 5731
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5731
uacucuacca acuugugguu 20

<210> 5732
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5732
aacaggaccc aaccacaagu 20

<210> 5733
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5733
guccuguuua gaauaauaag 20

<210> 5734
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5734
ugccucuuau uauucuaaac 20

<210> 5735
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5735
gcaucuacau guagagcucu 20

<210> 5736
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5736
ucuaggaagc cauucaaugc 20

<210> 5737
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5737
gguuuagauc cugcauugaa 20

<210> 5738
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5738
ucaaugcagg aucuaaaccu 20

<210> 5739
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5739
cacagacauu gcuaaagcca 20

<210> 5740
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5740
uggcuuuagc aaugucugug 20

<210> 5741
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5741
agcaaugucu gugcgguacu 20

<210> 5742
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5742
caaagaaaac caagauuuau 20

<210> 5743
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5743
aaaaccaaga uuuaucggaa 20

<210> 5744
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5744
accaagauuu aucggaaugg 20

<210> 5745
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5745
uccaccauuc cgauaaaucu   20

<210> 5746
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5746
gguggacacu gaaaguagac   20

<210> 5747
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5747
acacugaaag uagacaggaa   20

<210> 5748
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5748
ccuagugugc agugugcaga   20

<210> 5749
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5749
ccaucugcac acugcacacu   20

<210> 5750
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5750
gugugcagug ugcagaugga   20

<210> 5751
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5751
ugugcagugu gcagauggaa 20

<210> 5752
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5752
ugcagaugga agggcagugc 20

<210> 5753
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5753
gcagauggaa gggcagugcu 20

<210> 5754
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5754
cagauggaag ggcagugcug 20

<210> 5755
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5755
uggggagaau ccauugcauu 20

<210> 5756
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5756
cuucuucuuu ccaaaugcaa 20

<210> 5757
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5757
uuagcaaaag aaaucgcaga 20

<210> 5758
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5758
auuagcaaaa gaaaucgcag 20

<210> 5759
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5759
gcgauuucuu uugcuaaugc 20

<210> 5760
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5760
aagcaaguac uacagugaaa 20

<210> 5761
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5761
uucacuguag uacuugcuug 20

<210> 5762
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5762
acuguaguac uugcuugugg 20

<210> 5763
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5763
ugugggugguu ugaaugaaaa 20

<210> 5764
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5764
ugaaugaaaa uggucccccac 20

<210> 5765
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5765
guuuucaaaa auagccugug 20

<210> 5766
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5766
aguuuucaaa aauagccugu 20

<210> 5767
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5767
aaguuuucaa aaauagccug 20

<210> 5768
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5768
uugaaaacuu gauccccagu 20

<210> 5769
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5769
ccccaguugg ugaaacuguu 20

<210> 5770
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5770
ccaaacaguu ucaccaacug 20

<210> 5771
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5771
uccaaacagu uucaccaacu 20

<210> 5772
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5772
uuccaaacag uuucaccaac 20

<210> 5773
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5773
guuggugaaa cuguuuggaa 20

<210> 5774
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5774
gaaacuguuu ggaaaggauu 20

<210> 5775
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5775
uuggaaagga uuaggaagug 20

<210> 5776
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5776
auuaggaagu guggccuugc 20

<210> 5777
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5777
aaguguggcc uugcuggaug 20

<210> 5778
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5778
uugacagacc ucauccagca 20

<210> 5779
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5779
ugcuggauga ggucugucaa 20

<210> 5780
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5780
uggaugaggu cugucaaugg 20

<210> 5781
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5781
ugaggucugu caauggcgga 20

<210> 5782
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5782
gagacagaga gaggcacacu 20

<210> 5783
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5783
ggagacagag agaggcacac 20

<210> 5784
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5784
aauaaguagg agacagagag 20

<210> 5785
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5785
ucauuuuuca aucaauaagu 20

<210> 5786
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5786
aauucuggau ggcagagcaa 20

<210> 5787
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5787
ugggugauua gaauucugga 20

<210> 5788
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5788
guuuugggug auuagaauuc 20

<210> 5789
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5789
uaauuaggcu auaugguuuu 20

<210> 5790
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5790
uuaauuaggc uauaugguuu 20

<210> 5791
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5791
caguauuuaa uuaggcuaua   20

<210> 5792
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5792
uauaaaaaca guauuuaauu   20

<210> 5793
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5793
acuguuuuua uaaguuaccu   20

<210> 5794
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5794
uuuauaaguu accuugguca   20

<210> 5795
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5795
uaccuugguc augguacuuu   20

<210> 5796
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5796
auccuaaagu accaugacca   20

<210> 5797
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5797
uaguuaagaa acuaagacau 20

<210> 5798
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5798
cuuaaccaaa acaccacaga 20

<210> 5799
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5799
uuaaccaaaa caccacagac 20

<210> 5800
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5800
caagcccguc ugugguguuu 20

<210> 5801
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5801
gucauaugca agcccgucug 20

<210> 5802
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5802
gcauaugaca acaguucuag 20

<210> 5803
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5803
cccugaucaa augcccuagc 20

<210> 5804
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5804
ccugcuaggg cauuugauca 20

<210> 5805
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5805
accugcuagg gcauuugauc 20

<210> 5806
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5806
aucagacaca gaaccugcua 20

<210> 5807
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5807
caucagacac agaaccugcu 20

<210> 5808
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5808
agcagguucu gugucugaug 20

<210> 5809
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5809
gcagguucug ugucugauga 20

<210> 5810
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5810
cugugucuga ugagggcugc 20

<210> 5811
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5811
ugaugagggc ugcugguuca 20

<210> 5812
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5812
gaugagggcu gcugguucau 20

<210> 5813
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5813
gagggcugcu gguucauggg 20

<210> 5814
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5814
cuuuuucuca guguccuuac 20

<210> 5815
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5815
uuucucagug uccuuacagg 20

<210> 5816
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5816
ucaguguccu uacaggugga 20

<210> 5817
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5817
cuggauaccu uccaccugua 20

<210> 5818
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5818
uggaagguau ccagcuuucu 20

<210> 5819
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5819
aauauaaggu ccaagaaagc 20

<210> 5820
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5820
ggaaugcgug cuuuaauaua 20

<210> 5821
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5821
aagcuaucua cucacaucaa 20

<210> 5822
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5822
gaggugcuua aaucacuuug 20

<210> 5823
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5823
ggaggugcuu aaaucacuuu 20

<210> 5824
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5824
uggaggugcu uaaaucacuu 20

<210> 5825
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5825
ccuccaaaac ccuccgucuc 20

<210> 5826
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5826
ccggagacgg aggguuuugg 20

<210> 5827
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5827
cauccggaga cggaggguuu 20

<210> 5828
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5828
ggggagcauc cggagacgga 20

<210> 5829
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5829
gggggagcau ccggagacgg 20

<210> 5830
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5830
aaugggggag cauccggaga 20

<210> 5831
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5831
gucuccggau gcucccccau 20

<210> 5832
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5832
uucaccaaug ggggagcauc 20

<210> 5833
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5833
ugaaaucugu ucaccaaugg 20

<210> 5834
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5834
uugaaaucug uucaccaaug 20

<210> 5835
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5835
guugaaaucu guucaccaau 20

<210> 5836
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5836
uguugaaauc uguucaccaa 20

<210> 5837
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5837
uuucaacaua gcaauugagc 20

<210> 5838
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5838
caacauagca auugagcagg 20

<210> 5839
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5839
uagcaauuga gcaggaggaa 20

<210> 5840
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5840
cuggcuguga ucaaauaauu 20

<210> 5841
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5841
uuugaucaca gccaguacuu 20

<210> 5842
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5842
uuggguguuc accaaaguac 20

<210> 5843
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5843
gugaacaccc aaacccagca 20

<210> 5844
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5844
uucagcucca ugcuggguuu 20

<210> 5845
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5845
auucagcucc augcuggguu 20

<210> 5846
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5846
cagauauuca gcuccaugcu 20

<210> 5847
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5847
acagauauuc agcuccaugc 20

<210> 5848
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5848
cuguaaucuc aguauccagc 20

<210> 5849
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5849
uaaucucagu auccagcagg 20

<210> 5850
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5850
aguauccagc agguggauau 20

<210> 5851
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5851
guauccagca gguggauauu 20

<210> 5852
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5852
uauccagcag guggauauug 20

<210> 5853
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5853
auuccccaau auccaccugc 20

<210> 5854
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5854
auuggggaau uaagacuuca 20

<210> 5855
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5855
uaagacuuca aggccagacu 20

<210> 5856
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5856
acuuacuaug uagccaaguc 20

<210> 5857
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5857
uaguaaguuu gaugccaucc 20

<210> 5858
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5858
aguaaguuug augccauccu 20

<210> 5859
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5859
ggaucucaua uagcccagga 20

<210> 5860
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5860
aacaggaucu cauauagccc 20

<210> 5861
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5861
uauuuggggg uuuuggaaac 20

<210> 5862
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5862
uuguuucuau uuggggguuu 20

<210> 5863
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5863
uuuuuauugu uucuauuugg 20

<210> 5864
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5864
uuuuuuauug uuucuauuug 20

<210> 5865
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5865
uuuuuuuauu guuucuauuu 20

<210> 5866
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5866
auuuuuuuau uguuucuauu 20

<210> 5867
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5867
aaauagaaac aauaaaaaaa 20

<210> 5868
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5868
uaggguagca gugaacauga 20

<210> 5869
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5869
auguucacug cuacccuaga 20

<210> 5870
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5870
caagcaaaac ugaccuucua 20

<210> 5871
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5871
acaagcaaaa cugaccuucu 20

<210> 5872
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5872
uuguaacaga ugacuaacag 20

<210> 5873
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5873
agaugacuaa cagaggaaca 20

<210> 5874
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5874
cuaacagagg aacaaggucc 20

<210> 5875
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5875
agcauacugg uagcucuucc 20

<210> 5876
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5876
cagcauacug guagcucuuc 20

<210> 5877
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5877
cggaagagcu accaguaugc 20

<210> 5878
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5878
uucauuggca gccagcauac 20

<210> 5879
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5879
uaagacuuca gcagcuucau 20

<210> 5880
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5880
gcugaagucu uaguagauuu 20

<210> 5881
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5881
cuuaguagau uuaggagcua 20

<210> 5882
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5882
cuggggcugu gauggaaguc 20

<210> 5883
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5883
uggugggugcu ggggcuguga 20

<210> 5884
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5884
ucacagcccc agcaccacca 20

<210> 5885
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5885
cacagcccca gcaccaccau 20

<210> 5886
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5886
cagugcccau gguggugcug 20

<210> 5887
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5887
gcagugccca ugguggugcu 20

<210> 5888
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5888
ggcagugccc augguggugc 20

<210> 5889
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5889
cugcugggca gugcccaugg 20

<210> 5890
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5890
agacugcugg gcagugccca 20

<210> 5891
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5891
cuaaaagaag auagacugcu 20

<210> 5892
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5892
ccagcagucu aucuucuuuu 20

<210> 5893
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5893
ccuaaaagaa gauagacugc 20

<210> 5894
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5894
cuaucuucuu uuaggucuuc 20

<210> 5895
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5895
uuuaggucuu cagguguccc 20

<210> 5896
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5896
uuaggucuuc agguguccu 20

<210> 5897
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5897
gugucccugg guagagaaca 20

<210> 5898
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5898
gaagccuugu ucucuaccca 20

<210> 5899
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5899
agaagccuug uucucuaccc 20

<210> 5900
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5900
aacaaggcuu cugcuugcau 20

<210> 5901
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5901
acaaggcuuc ugcuugcaua 20

<210> 5902
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5902
gugagacugu cacuguacug 20

<210> 5903
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5903
ugugagacug ucacuguacu 20

<210> 5904
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5904
uugugagacu gucacuguac 20

<210> 5905
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5905
ucacaaugag ugcagcaaug 20

<210> 5906
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5906
gcagcaaugu ggccacagaa 20

<210> 5907
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5907
cagcaaugug gccacagaac 20

<210> 5908
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5908
agcaaugugg ccacagaacg 20

<210> 5909
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5909
acacacauuu ccccguucug 20

<210> 5910
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5910
ucaagcugaa agcuuuucac 20

<210> 5911
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5911
ucucuugcua aaugacaaag 20

<210> 5912
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5912
cuaaaugaca aagugguuag 20

<210> 5913
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5913
aaugacaaag ugguuagagg 20

<210> 5914
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5914
augacaaagu gguuagagga 20

<210> 5915
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5915
guguagacaa ugaaagcugu 20

<210> 5916
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5916
agcuuucauu gucuacacuc 20

<210> 5917
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5917
ucuuuugaga auuuuacagu 20

<210> 5918
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5918
cuagucaaca cagaaauaaa 20

<210> 5919
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5919
uuuguuuugu ugaaaagaag 20

<210> 5920
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5920
uuguuuuguu gaaaagaagu 20

<210> 5921
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5921
uguuuuguug aaaagaagug 20

<210> 5922
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5922
guuuuguuga aaagaagugg 20

<210> 5923
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5923
uugaaaagaa gugggggguu 20

<210> 5924
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5924
ugggggguuu gguacugaug 20

<210> 5925
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5925
gggggguuug guacugauga 20

<210> 5926
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5926
gggguuuugg uacugaugag 20

<210> 5927
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5927
uauguuacuu auucauucuc 20

<210> 5928
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5928
cuuauucauu cucagguuca 20

<210> 5929
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5929
uuaaucuauc auuugucaua 20

<210> 5930
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5930
uaauaaaagc augcaaaugc 20

<210> 5931
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5931
ugcaaaugcu ggagcucugc 20

<210> 5932
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5932
aaaugcugga gcucugcugg 20

<210> 5933
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5933
ggcggaguac cugauaugca 20

<210> 5934
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5934
gaucuucauc cuugcauauc 20

<210> 5935
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5935
gcuuuuuuau uugauuucug 20

<210> 5936
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5936
agcuuuuuua uuugauuucu 20

<210> 5937
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5937
cagcuuuuuu auuugauuuc 20

<210> 5938
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5938
cagaaaucaa auaaaaaagc 20

<210> 5939
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5939
agaaaucaaa uaaaaaagcu 20

<210> 5940
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5940
uaaaaaagcu gggcauagug 20

<210> 5941
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5941
agcugggcau agugaggaag 20

<210> 5942
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5942
gcauagugag gaagaggaga 20

<210> 5943
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5943
cauagugagg aagaggagau 20

<210> 5944
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5944
agugaggaag aggagauggg 20

<210> 5945
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5945
aggagauggg aggauuccug 20

<210> 5946
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5946
gaugggagga uuccuguggc 20

<210> 5947
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5947
ggaggauucc uguggcuggc 20

<210> 5948
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5948
uuagcugucc agccagccac 20

<210> 5949
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5949
uggaaauaga ugaauaggcu 20

<210> 5950
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5950
uagccuauuc aucuauuucc 20

<210> 5951
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5951
uggccuggaa auagaugaau 20

<210> 5952
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5952
caucuauuuc caggccacua   20

<210> 5953
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5953
aucuauuucc aggccacuaa   20

<210> 5954
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5954
auuuccaggc cacuaaggga   20

<210> 5955
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5955
gguaccaucc cuuaguggcc   20

<210> 5956
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5956
uuuaagguac caucccuuag   20

<210> 5957
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5957
auuauuauug uuauuuuuua   20

<210> 5958
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5958
acaauaauaa uaaauaaaaa 20

<210> 5959
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5959
uaauaaauaa aaaagguagc 20

<210> 5960
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5960
aaaaagguag cugguuccug 20

<210> 5961
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5961
ugguuccuga ggagcaucua 20

<210> 5962
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5962
gauauccuua gaugcuccuc 20

<210> 5963
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5963
guaugugcac guggaguuaa 20

<210> 5964
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5964
guauacagug uaugugcacg 20

<210> 5965
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5965
ugcacauaca cuguauacac 20

<210> 5966
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5966
uuuuuuuggu aaaacuugau 20

<210> 5967
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5967
uuuuuuuuuu uuuuuuuuuu 20

<210> 5968
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5968
aagaacacuu uauucacugu 20

<210> 5969
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5969
aacacuuuau ucacuguugg 20

<210> 5970
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5970
acacuuuauu cacuguuggu 20

<210> 5971
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5971
cuguuggugg guauguaaac 20

<210> 5972
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5972
cucugugcug auuuucauag 20

<210> 5973
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5973
cacuaugaaa aucagcacag 20

<210> 5974
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5974
uuguuuuguu ggagugggaa 20

<210> 5975
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5975
uuuguuuugu uggaguggga   20

<210> 5976
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5976
uuguuuuguu uuguuggagu   20

<210> 5977
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5977
uuuguuuugu uuuguuggag   20

<210> 5978
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5978
uuuguuuugu uuuguuuugu   20

<210> 5979
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5979
guucuaguuc uaguucuaga   20

<210> 5980
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5980
aguucuaguu cuaguucuag   20

<210> 5981
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5981
cuagaacuac ugcacgaucc 20

<210> 5982
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5982
gauccagguu uaccacuccu 20

<210> 5983
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5983
auaccuagga gugguaaacc 20

<210> 5984
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5984
uuugaguaaa uaccuaggag 20

<210> 5985
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5985
acuccuaggu auuuacucaa 20

<210> 5986
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5986
aguccuuuga guaaauaccu 20

<210> 5987
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5987
uauacgucaa ccugugacag 20

<210> 5988
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5988
guauaugaug ccucugucac 20

<210> 5989
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5989
cagaggcauc auauacaagc 20

<210> 5990
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5990
agaggcauca uauacaagca 20

<210> 5991
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5991
caucauauac aagcagggag 20

<210> 5992
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5992
cauauacaag cagggagugg 20

<210> 5993
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5993
ugaggggugg gauuaaaggc 20

<210> 5994
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5994
ugccuuuaau cccaccccuc 20

<210> 5995
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5995
cuccugaggg gugggauuaa 20

<210> 5996
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5996
cuuuaauccc accccucagg 20

<210> 5997
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5997
gacucugccu ccugaggggu 20

<210> 5998
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5998
ugacucugcc uccugagggg   20

<210> 5999
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5999
accccucagg aggcagaguc   20

<210> 6000
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6000
accugacucu gccuccugag   20

<210> 6001
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6001
uaccugacuc ugccuccuga   20

<210> 6002
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6002
cuaccugacu cugccuccug   20

<210> 6003
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6003
gguagaucuc ugugaguucg   20

<210> 6004
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6004
cugugaguuc gaggccaguu 20

<210> 6005
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6005
acucacuaug uagaccaaac 20

<210> 6006
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6006
cauauggcua uauggucuua 20

<210> 6007
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6007
cauaagacca uauagccaua 20

<210> 6008
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6008
aagaccauau agccauaugg 20

<210> 6009
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6009
agaccauaua gccauaugga 20

<210> 6010
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6010
gaccauauag ccauauggag 20

<210> 6011
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6011
accauauagc cauauggagg 20

<210> 6012
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6012
ccauauagcc auauggaggg 20

<210> 6013
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6013
ccccccucca uauggcuaua 20

<210> 6014
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6014
cucacaaucc ccccuccaua 20

<210> 6015
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6015
gagagaauua uuaaaugaau 20

<210> 6016
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6016
uauacacugu cuucuuucau 20

<210> 6017
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6017
cauaggaaaa augaacagaa 20

<210> 6018
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6018
auaggaaaaa ugaacagaaa 20

<210> 6019
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6019
aacagaaagg gagagaucuu 20

<210> 6020
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6020
acagaaaggg agagaucuuu 20

<210> 6021
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6021
gaaagggaga gaucuuuggg 20

<210> 6022
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6022
aaagggagag aucuuugggu 20

<210> 6023
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6023
aagggagaga ucuuugggug 20

<210> 6024
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6024
auacaugaca ugaaagcaga 20

<210> 6025
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6025
uacaugacau gaaagcagaa 20

<210> 6026
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6026
acaugacaug aaagcagaag 20

<210> 6027
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6027
agcagaaggg gauuaguuau 20

<210> 6028
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6028
gaaggggauu aguuauugga 20

<210> 6029
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6029
gggauuaguu auuggaaggc 20

<210> 6030
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6030
ggauuaguua uuggaaggca 20

<210> 6031
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6031
uuaguuauug gaaggcaggg 20

<210> 6032
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6032
uaguuauugg aaggcaggga 20

<210> 6033
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6033
uggaaggcag ggagggaccc 20

<210> 6034
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6034
aaggcaggga gggacccagg 20

<210> 6035
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6035
ggagggaccc aggaggauga 20

<210> 6036
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6036
gagggaccca ggaggaugaa 20

<210> 6037
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6037
ucucuucccu ucauccuccu 20

<210> 6038
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6038
uucucuuccc uucauccucc 20

<210> 6039
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6039
gaugaaggga agagaaugca 20

<210> 6040
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6040
augaagggaa gagaaugcaa 20

<210> 6041
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6041
gggaagagaa ugcaagggaa 20

<210> 6042
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6042
aaugcaaggg aaaggaguaa 20

<210> 6043
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6043
gcaagggaaa ggaguaaagg 20

<210> 6044
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6044
agggaaagga guaaaggagg 20

<210> 6045
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6045
gaaaggagua aaggaggagg 20

<210> 6046
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6046
aguaaaggag gaggagguag 20

<210> 6047
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6047
uauuaauucc agcacuugug 20

<210> 6048
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6048
uaauuccagc acuugugagg 20

<210> 6049
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6049
aauuccagca cuugugagga 20

<210> 6050
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6050
auuccagcac uugugaggag 20

<210> 6051
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6051
ugucccucc ucacaagugc 20

<210> 6052
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6052
gacagagcuc ugugaguuca 20

<210> 6053
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6053
uggaacugac uaugcagagg 20

<210> 6054
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6054
cuggaacuga cuaugcagag 20

<210> 6055
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6055
cccucugcau agucaguucc 20

<210> 6056
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6056
ccuggaacug acuaugcaga 20

<210> 6057
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6057
uccuggaacu gacuaugcag 20

<210> 6058
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6058
gucaguucca ggauagccaa 20

<210> 6059
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6059
uauguagcca uuggcuaucc 20

<210> 6060
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6060
gggucucauu auguagccau 20

<210> 6061
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6061
augagacccu gugucagaga 20

<210> 6062
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6062
agacccugug ucagagaagg 20

<210> 6063
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6063
cggccaccuu cucugacaca 20

<210> 6064
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6064
ccugugucag agaagguggc 20

<210> 6065
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6065
ccggccaccu ucucugacac 20

<210> 6066
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6066
gucagagaag guggccggcg 20

<210> 6067
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6067
ucagagaagg uggccggcga 20

<210> 6068
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6068
uaagcaucaa uaucccucgc 20

<210> 6069
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6069
uaacucauuc agcugugugg 20

<210> 6070
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6070
guuuaacuca uucagcugug 20

<210> 6071
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6071
agugcaaaag uagcaggaac 20

<210> 6072
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6072
auugaaagug caaaaguagc 20

<210> 6073
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6073
augcucccag auuacuuaca 20

<210> 6074
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6074
aaauuccaug uaaguaaucu 20

<210> 6075
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6075
uaaauuccau guaaguaauc 20

<210> 6076
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6076
auggaauuua uauuuuauug 20

<210> 6077
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6077
gagguuuguc uaugauguac 20

<210> 6078
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6078
uugguugaaa auuuuucuug 20

<210> 6079
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6079
aaauuuucaa ccaauagucc 20

<210> 6080
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6080
guuauuuuug ccuggacuau 20

<210> 6081
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6081
aaaaagaggu uauuuuugcc 20

<210> 6082
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6082
agaaagaaag aaagaaaaag 20

<210> 6083
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6083
ucuuuuuuuu uuuuuuuuuu 20

<210> 6084
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6084
uuuuuuuggu uuuuugaaac 20

<210> 6085
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6085
uuuuuugguu uuuugaaaca 20

<210> 6086
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6086
aggguuucuc uguauagccc 20

<210> 6087
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6087
cuguauagcc cuggcugucc 20

<210> 6088
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6088
agugaguucc aggacagcca 20

<210> 6089
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6089
aagugaguuc caggacagcc 20

<210> 6090
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6090
ugguguacaa agugaguucc 20

<210> 6091
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6091
uggaacucac uuuguacacc 20

<210> 6092
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6092
acucacuuug uacaccaggc 20

<210> 6093
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6093
uucugaguuc gaggccagcc 20

<210> 6094
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6094
cagguggauu ucugaguucg 20

<210> 6095
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6095
acucgggagg cagaggcagg 20

<210> 6096
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6096
agcacucggg aggcagaggc 20

<210> 6097
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6097
gccucugccu cccgagugcu 20

<210> 6098
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6098
uccgagcacu cgggaggcag 20

<210> 6099
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6099
cuuuaauccg agcacucggg 20

<210> 6100
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6100
cucccgagug cucggauuaa 20

<210> 6101
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6101
cgccuuuaau ccgagcacuc 20

<210> 6102
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6102
acgccuuuaa uccgagcacu 20

<210> 6103
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6103
uauuuuuugc gggacggugg 20

<210> 6104
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6104
gguuauuuuu ugcgggacgg 20

<210> 6105
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6105
acagguuauu uuuugcggga 20

<210> 6106
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6106
aaaaacaggu uauuuuuugc 20

<210> 6107
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6107
caaaaacagg uuauuuuuug 20

<210> 6108
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6108
auaauuaaaa caacaaaaac 20

<210> 6109
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6109
uuuuuaagau uuuaugugua 20

<210> 6110
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6110
uuuuaagauu uuauguguau 20

<210> 6111
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6111
cuguguacca cuuguaugcu 20

<210> 6112
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6112
uugggcacca agcauacaag 20

<210> 6113
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6113
uguaugcuug gugcccaaga 20

<210> 6114
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6114
ugaucuguuc uguccuucuu 20

<210> 6115
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6115
augaucuguu cuguccuucu 20

<210> 6116
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6116
agaaggacag aacagaucau 20

<210> 6117
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6117
gaaggacaga acagaucaua 20

<210> 6118
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6118
gaacagauca uaggguuucc 20

<210> 6119
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6119
aacagaucau aggguuuccu 20

<210> 6120
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6120
uuuccuggga uaagaguuau 20

<210> 6121
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6121
acuccuauaa cucuuauccc 20

<210> 6122
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6122
gaugacugua agccaccaag 20

<210> 6123
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6123
guaagccacc aaguggacgc 20

<210> 6124
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6124
uaagccacca aguggacgcu 20

<210> 6125
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6125
aauucccagc guccacuugg 20

<210> 6126
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6126
uucaauuccc agcguccacu 20

<210> 6127
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6127
ggacgcuggg aauugaaccu 20

<210> 6128
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6128
ggaauugaac cuugguuagc 20

<210> 6129
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6129
gacacucuuc cagcuaacca 20

<210> 6130
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6130
gggacuggaa uuaaaaauac 20

<210> 6131
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6131
cauagacaaa caacggggac 20

<210> 6132
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6132
aucuucauag acaaacaacg 20

<210> 6133
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6133
aaucuucaua gacaaacaac 20

<210> 6134
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6134
aaaucuucau agacaaacaa 20

<210> 6135
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6135
uugucuauga agauuuugcu 20

<210> 6136
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6136
uuuugcuugg uaguccaguc   20

<210> 6137
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6137
ccagucuggc uuuaagaaac   20

<210> 6138
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6138
ccuguuucuu aaagccagac   20

<210> 6139
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6139
cagucuggcu uuaagaaaca   20

<210> 6140
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6140
aacagggucu caugcauccc   20

<210> 6141
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6141
auggaagucu gagcaagcca   20

<210> 6142
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6142
cauggaaguc ugagcaagcc 20

<210> 6143
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6143
cucagacuuc caugcagcug 20

<210> 6144
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6144
gacuuccaug cagcugagga 20

<210> 6145
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6145
uaaagccauc cucagcugca 20

<210> 6146
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6146
ucuacgagga aaaggcagga 20

<210> 6147
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6147
cucuacgagg aaaaggcagg 20

<210> 6148
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6148
gcacucuacg aggaaaaggc 20

<210> 6149
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6149
cucagcacuc uacgaggaaa 20

<210> 6150
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6150
uguaaucuca gcacucuacg 20

<210> 6151
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6151
gagaagucug cugguggcac 20

<210> 6152
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6152
uguuaggaga agucugcugg 20

<210> 6153
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6153
ucuuguuagg agaagucugc 20

<210> 6154
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6154
gacuucuccu aacaagaaug 20

<210> 6155
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6155
uccuaacaag aauguggcac 20

<210> 6156
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6156
ccuaacaaga auguggcaca 20

<210> 6157
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6157
cccugugcca cauucuuguu 20

<210> 6158
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6158
aacaagaaug uggcacaggg 20

<210> 6159
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6159
auguggcaca gggaggcaac 20

<210> 6160
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6160
uguggcacag ggaggcaacu 20

<210> 6161
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6161
gaggcaacug ggaaucaaac 20

<210> 6162
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6162
caacugggaa ucaaacagga 20

<210> 6163
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6163
cugggaauca aacaggaagg 20

<210> 6164
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6164
aaacaggaag gaggaguaaa 20

<210> 6165
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6165
aggaaggagg aguaaaagga 20

<210> 6166
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6166
ggaaggagga guaaaaggaa 20

<210> 6167
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6167
gaaggaggag uaaaaggaag 20

<210> 6168
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6168
ggaggaguaa aaggaagggg 20

<210> 6169
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6169
gaguaaaagg aaggggagga 20

<210> 6170
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6170
aaaggaaggg gaggaaggag 20

<210> 6171
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6171
gggaggaagg agaggagaag 20

<210> 6172
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6172
ggaaggagag gagaaguggc 20

<210> 6173
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6173
aggagaggag aaguggcagg 20

<210> 6174
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6174
guggcaggag gagaagaaaa 20

<210> 6175
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6175
gcaggaggag aagaaaaagg 20

<210> 6176
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6176
ggaggagaag aaaaaggagg 20

<210> 6177
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6177
agaaaaagga ggcggagaaa 20

<210> 6178
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6178
aaaaggaggc ggagaaaagg 20

<210> 6179
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6179
aggcggagaa aaggugguag 20

<210> 6180
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6180
cggagaaaag gugguagugg 20

<210> 6181
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6181
agaaaaggug guaguggugg 20

<210> 6182
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6182
ggugguagug guggaggaag 20

<210> 6183
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6183
gguaguggug gaggaagagg 20

<210> 6184
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6184
agugguggag gaagaggagg 20

<210> 6185
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6185
gguggaggaa gaggaggagg 20

<210> 6186
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6186
ggaggaagag gaggaggagg 20

<210> 6187
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6187
ggaagaggag gaggaggagg 20

<210> 6188
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6188
agaggaggag gaggaggagg 20

<210> 6189
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6189
ggaggaggag gaggaggagg 20

<210> 6190
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6190
ggaggaggag gaggaggagg 20

<210> 6191
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6191
gaggaggagg aggaggagga 20

<210> 6192
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6192
aggaggagga ggaggaggag 20

<210> 6193
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6193
ggaggaggag gaggaggagg 20

<210> 6194
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6194
gagggggacu uaaucaguaa 20

<210> 6195
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6195
acuuaaucag uaaaggaaaa 20

<210> 6196
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6196
aaaaggcuga gcucaguccu 20

<210> 6197
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6197
cucaguccuu ggaaccuaca 20

<210> 6198
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6198
guccuuggaa ccuacauggu 20

<210> 6199
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6199
cuccuaccau guagguucca 20

<210> 6200
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6200
cucauucucu ccuaccaugu 20

<210> 6201
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6201
guuuccucug auccccacac 20

<210> 6202
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6202
ugcuccagug uggggaucag 20

<210> 6203
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6203
ugaucccac acuggagcaa 20

<210> 6204
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6204
ggcaccauug cuccagugug 20

<210> 6205
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6205
uggcaccauu gcuccagugu   20

<210> 6206
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6206
auggcaccau ugcuccagug   20

<210> 6207
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6207
gaagugggag agugauguga   20

<210> 6208
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6208
ugugaggagu ugggugaagu   20

<210> 6209
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6209
uugugaggag uugggugaag   20

<210> 6210
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6210
uuuuauuuuu gugaggaguu   20

<210> 6211
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6211
uuuuuauuuu ugugaggagu 20

<210> 6212
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6212
uuuuguuuuu uauuuuugug 20

<210> 6213
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6213
uuaaaaaaga aagcuguagc 20

<210> 6214
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6214
uaaaaaagaa agcuguagcc 20

<210> 6215
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6215
aagaaagcug uagccgggcg 20

<210> 6216
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6216
aaagcuguag ccgggcgugg 20

<210> 6217
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6217
aaagugugug ccaccacgcc 20

<210> 6218
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6218
guggcacaca cuuuuaaucc 20

<210> 6219
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6219
acacuuuuaa ucccggcacu 20

<210> 6220
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6220
cacuuuuaau cccggcacuu 20

<210> 6221
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6221
uuuuaauccc ggcacuuggg 20

<210> 6222
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6222
ucccggcacu ugggaggcag 20

<210> 6223
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6223
gccucugccu cccaagugcc 20

<210> 6224
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6224
ugccucugcc ucccaagugc 20

<210> 6225
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6225
acuugggagg cagaggcaag 20

<210> 6226
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6226
caagcggauu ucugaguucg 20

<210> 6227
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6227
uucugaguuc gaggccagcu 20

<210> 6228
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6228
acucacuuug uagaccaagc   20

<210> 6229
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6229
uggucuacaa agugaguucc   20

<210> 6230
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6230
aagugaguuc caggacagcc   20

<210> 6231
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6231
agugaguucc aggacagcca   20

<210> 6232
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6232
cuguguagcc cuggcugucc   20

<210> 6233
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6233
aggguuucuc uguguagccc   20

<210> 6234
<211> 20

<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6234
ucuuuugguu uuucaagaca 20

<210> 6235
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6235
uucuuuuggu uuuucaagac 20

<210> 6236
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6236
acagcuuucu uuuuuucuuu 20

<210> 6237
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6237
uauauuaaua uagcaaagca 20

<210> 6238
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6238
auauauuaau auagcaaagc 20

<210> 6239
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6239
uguuuuuucu uauagaauua 20

<210> 6240
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6240
uucuggaggg aggaaaagga 20

<210> 6241
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6241
cucauucugg agggaggaaa 20

<210> 6242
<211> 1379
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6242

Met Asp Lys Lys Tyr Ser Ile Gly Leu Asp Ile Gly Thr Asn Ser Val
1   5   10   15

Gly Trp Ala Val Ile Thr Asp Glu Tyr Lys Val Pro Ser Lys Lys Phe
            20   25   30

Lys Val Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile
        35   40   45

Gly Ala Leu Leu Phe Asp Ser Gly Glu Thr Ala Glu Ala Thr Arg Leu
    50   55   60

Lys Arg Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys
65   70   75   80

Tyr Leu Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser
                85   90   95

Phe Phe His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys
            100   105   110

His Glu Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr
        115   120   125

His Glu Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp
    130   135   140

```
Ser Thr Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His
145                 150                 155                 160

Met Ile Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro
                165                 170                 175

Asp Asn Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr
            180                 185                 190

Asn Gln Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala
        195                 200                 205

Lys Ala Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn
    210                 215                 220

Leu Ile Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn
225                 230                 235                 240

Leu Ile Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe
                245                 250                 255

Asp Leu Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp
            260                 265                 270

Asp Asp Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp
        275                 280                 285

Leu Phe Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp
    290                 295                 300

Ile Leu Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser
305                 310                 315                 320

Met Ile Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys
                325                 330                 335

Ala Leu Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe
            340                 345                 350

Asp Gln Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser
        355                 360                 365

Gln Glu Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp
    370                 375                 380

Gly Thr Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg
385                 390                 395                 400

Lys Gln Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu
                405                 410                 415
```

```
Gly Glu Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe
            420                 425                 430

Leu Lys Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile
        435                 440                 445

Pro Tyr Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp
    450                 455                 460

Met Thr Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu
465                 470                 475                 480

Val Val Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr
                485                 490                 495

Asn Phe Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser
            500                 505                 510

Leu Leu Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys
        515                 520                 525

Tyr Val Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln
    530                 535                 540

Lys Lys Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr
545                 550                 555                 560

Val Lys Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp
                565                 570                 575

Ser Val Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly
            580                 585                 590

Thr Tyr His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp
        595                 600                 605

Asn Glu Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr
    610                 615                 620

Leu Phe Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala
625                 630                 635                 640

His Leu Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr
                645                 650                 655

Thr Gly Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp
            660                 665                 670

Lys Gln Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe
        675                 680                 685
```

```
Ala Asn Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe
    690                 695                 700

Lys Glu Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu
705                 710                 715                 720

His Glu His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly
                725                 730                 735

Ile Leu Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly
            740                 745                 750

Arg His Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln
        755                 760                 765

Thr Thr Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile
    770                 775                 780

Glu Glu Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro
785                 790                 795                 800

Val Glu Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu
                805                 810                 815

Gln Asn Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg
            820                 825                 830

Leu Ser Asp Tyr Asp Val Asp His Ile Val Pro Gln Ser Phe Leu Lys
        835                 840                 845

Asp Asp Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg
    850                 855                 860

Gly Lys Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys
865                 870                 875                 880

Asn Tyr Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys
                885                 890                 895

Phe Asp Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp
            900                 905                 910

Lys Ala Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr
        915                 920                 925

Lys His Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp
    930                 935                 940

Glu Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
945                 950                 955                 960

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg
```

```
               965                 970                 975

Glu Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn Ala Val
            980                 985                 990

Val Gly Thr Ala Leu Ile Lys Lys  Tyr Pro Lys Leu Glu  Ser Glu Phe
        995                 1000                1005

Val Tyr  Gly Asp Tyr Lys Val  Tyr Asp Val Arg Lys  Met Ile Ala
    1010                1015                1020

Lys Ser  Glu Gln Glu Ile Gly  Lys Ala Thr Ala Lys  Tyr Phe Phe
    1025                1030                1035

Tyr Ser  Asn Ile Met Asn Phe  Phe Lys Thr Glu Ile  Thr Leu Ala
    1040                1045                1050

Asn Gly  Glu Ile Arg Lys Arg  Pro Leu Ile Glu Thr  Asn Gly Glu
    1055                1060                1065

Thr Gly  Glu Ile Val Trp Asp  Lys Gly Arg Asp Phe  Ala Thr Val
    1070                1075                1080

Arg Lys  Val Leu Ser Met Pro  Gln Val Asn Ile Val  Lys Lys Thr
    1085                1090                1095

Glu Val  Gln Thr Gly Gly Phe  Ser Lys Glu Ser Ile  Leu Pro Lys
    1100                1105                1110

Arg Asn  Ser Asp Lys Leu Ile  Ala Arg Lys Lys Asp  Trp Asp Pro
    1115                1120                1125

Lys Lys  Tyr Gly Gly Phe Asp  Ser Pro Thr Val Ala  Tyr Ser Val
    1130                1135                1140

Leu Val  Val Ala Lys Val Glu  Lys Gly Lys Ser Lys  Lys Leu Lys
    1145                1150                1155

Ser Val  Lys Glu Leu Leu Gly  Ile Thr Ile Met Glu  Arg Ser Ser
    1160                1165                1170

Phe Glu  Lys Asn Pro Ile Asp  Phe Leu Glu Ala Lys  Gly Tyr Lys
    1175                1180                1185

Glu Val  Lys Lys Asp Leu Ile  Ile Lys Leu Pro Lys  Tyr Ser Leu
    1190                1195                1200

Phe Glu  Leu Glu Asn Gly Arg  Lys Arg Met Leu Ala  Ser Ala Gly
    1205                1210                1215

Glu Leu  Gln Lys Gly Asn Glu  Leu Ala Leu Pro Ser  Lys Tyr Val
    1220                1225                1230
```

```
Asn Phe  Leu Tyr Leu Ala Ser  His Tyr Glu Lys Leu  Lys Gly Ser
    1235                1240                1245

Pro Glu  Asp Asn Glu Gln Lys  Gln Leu Phe Val Glu  Gln His Lys
    1250                1255                1260

His Tyr  Leu Asp Glu Ile Ile  Glu Gln Ile Ser Glu  Phe Ser Lys
    1265                1270                1275

Arg Val  Ile Leu Ala Asp Ala  Asn Leu Asp Lys Val  Leu Ser Ala
    1280                1285                1290

Tyr Asn  Lys His Arg Asp Lys  Pro Ile Arg Glu Gln  Ala Glu Asn
    1295                1300                1305

Ile Ile  His Leu Phe Thr Leu  Thr Asn Leu Gly Ala  Pro Ala Ala
    1310                1315                1320

Phe Lys  Tyr Phe Asp Thr Thr  Ile Asp Arg Lys Arg  Tyr Thr Ser
    1325                1330                1335

Thr Lys  Glu Val Leu Asp Ala  Thr Leu Ile His Gln  Ser Ile Thr
    1340                1345                1350

Gly Leu  Tyr Glu Thr Arg Ile  Asp Leu Ser Gln Leu  Gly Gly Asp
    1355                1360                1365

Gly Gly  Gly Ser Pro Lys Lys  Lys Arg Lys Val
    1370                1375
```

<210> 6243
<211> 4514
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6243

```
gggucccgca gucggcgucc agcggcucug cuuguucgug ugugugucgu ugcaggccuu       60

auucggaucc auggauaaga aguacucaau cgggcuggau aucggaacua auuccguggg      120

uugggcagug aucacggaug aauacaaagu gccguccaag aaguucaagg uccuggggaa      180

caccgauaga cacagcauca agaaaaaucu caucggagcc cugcuguuug acuccggcga      240

aaccgcagaa gcgacccggc ucaaacguac cgcgaggcga cgcuacaccc ggcggaagaa      300

ucgcaucugc uaucugcaag agaucuuuuc gaacgaaaug gcaaaggucg acgacagcuu      360

cuuccaccgc cuggaagaau cuuuccuggu ggaggaggac aagaagcaug aacggcaucc      420

uaucuuugga aacaucgucg acgaaguggc guaccacgaa aaguacccga ccaucuacca      480

ucugcggaag aaguugguug acucaacuga caaggccgac cucagauuga ucuacuuggc      540
```

ccucgcccau augaucaaau uccgcggaca cuuccugauc gaaggcgauc ugaacccuga 600

uaacuccgac guggauaagc uuuucauuca acuggugcag accuacaacc aacuguucga 660

agaaaaccca aucaaugcua gcggcgucga ugccaaggcc auccuguccg cccggcuguc 720

gaagucgcgg cgccucgaaa accugaucgc acagcugccg ggagagaaaa agaacggacu 780

uuucggcaac uugaucgcuc ucucacuggg acucacuccc aauuucaagu ccaauuuuga 840

ccuggccgag gacgcgaagc ugcaacucuc aaaggacacc uacgacgacg acuuggacaa 900

uuugcuggca caaauuggcg aucaguacgc ggaucuguuc cuugccgcua agaaccuuuc 960

ggacgcaauc uugcuguccg auauccugcg cgugaacacc gaaauaacca aagcgccgcu 1020

uagcgccucg augauuaagc gguacgacga gcaucaccag gaucucacgc ugcucaaagc 1080

gcucgugaga cagcaacugc cugaaaagua caaggagauc uucuucgacc aguccaagaa 1140

uggguacgca ggguacaucg auggaggcgc uagccaggaa gaguucuaua aguucaucaa 1200

gccaauccug gaaaagaugg acggaaccga agaacugcug gucaagcuga acagggagga 1260

ucugcuccgg aaacagagaa ccuuugacaa cggauccauu ccccaccaga uccaucuggg 1320

ugagcugcac gccaucuugc ggcgccagga ggacuuuuac ccauuccuca aggacaaccg 1380

ggaaaagauc gagaaaauuc ugacguuccg caucccguau uacgugggcc cacuggcgcg 1440

cggcaauucg cgcuucgcgu ggaugacuag aaaaucagag gaaaccauca cuccuuggaa 1500

uuucgaggaa guuguggaua agggagcuuc ggcacaaagc uucaucgaac gaaugaccaa 1560

cuucgacaag aaucucccaa acgagaaggu gcuuccuaag cacagccucc uuuacgaaua 1620

cuucacuguc uacaacgaac ugacuaaagu gaaauacguu acugaaggaa ugaggaagcc 1680

ggccuuucug uccggagaac agaagaaagc aauugucgau cugcuguuca agaccaaccg 1740

caaggugacc gucaagcagc uuaaagagga cuacuucaag aagaucgagu guuucgacuc 1800

aguggaaauc agcggggugg aggacagauu caacgcuucg cugggaaccu aucaugaucu 1860

ccugaagauc aucaaggaca aggacuuccu ugacaacgag gagaacgagg acauccugga 1920

agauaucguc cugaccuuga cccuuuucga ggaucgcgag augaucgagg agaggcuuaa 1980

gaccuacgcu caucucuucg acgauaaggu caugaaacaa cucaagcgcc gccgguacac 2040

ugguuggggc cgccucuccc gcaagcugau caacgguauu cgcgauaaac agagcgguaa 2100

aacuauccug gauuuccuca aaucggaugg cuucgcuaau cguaacuuca ugcaauugau 2160

ccacgacgac agccugaccu uuaaggagga cauccaaaaa gcacaagugu ccggacaggg 2220

agacucacuc caugaacaca ucgcgaaucu ggccgguucg ccggcgauua agaagggaau 2280

ucugcaaacu gugaaggugg ucgacgagcu ggugaagguc augggacggc acaaaccgga 2340

gaauaucgug auugaaaugg cccgagaaaa ccagacuacc cagaagggcc agaaaaacuc 2400

ccgcgaaagg augaagcgga ucgaagaagg aaucaaggag cugggcagcc agauccugaa 2460

agagcacccg guggaaaaca cgcagcugca gaacgagaag cucuaccugu acuauuugca 2520

aaauggacgg gacauguacg uggaccaaga gcuggacauc aaucgguugu cugauuacga 2580

cguggaccac aucguuccac aguccuuucu gaaggaugac ucgaucgaua acaagguguu 2640

gacucgcagc gacaagaaca gagggaaguc agauaaugug ccaucggagg aggucgugaa 2700

gaagaugaag aauuacuggc ggcagcuccu gaaugcgaag cugauuaccc agagaaaguu 2760

ugacaaucuc acuaaagccg agcgcggcgg acucucagag cuggauaagg cuggauucau 2820

caaacggcag cuggucgaga cucggcagau uaccaagcac guggcgcaga ucuuggacuc 2880

ccgcaugaac acuaaauacg acgagaacga uaagcucauc cgggaaguga aggugauuac 2940

ccugaaaagc aaacuugugu cggacuuucg gaaggacuuu caguuuuaca aagugagaga 3000

aaucaacaac uaccaucacg cgcaugacgc auaccucaac gcuguggucg guaccgcccu 3060

gaucaaaaag uacccuaaac uugaaucgga guuuguguac ggagacuaca aggucuacga 3120

cgugaggaag augauagcca aguccgaaca ggaaaucggg aaagcaacug cgaaauacuu 3180

cuuuuacuca aacaucauga acuuuuucaa gacugaaauu acgcuggcca auggagaaau 3240

caggaagagg ccacugaucg aaacuaacgg agaaacgggc gaaaucgugu gggacaaggg 3300

cagggacuuc gcaacuguuc gcaaagugcu cucuaugccg caagucaaua uugugaagaa 3360

aaccgaagug caaaccggcg gauuuucaaa ggaaucgauc cucccaaaga gaaauagcga 3420

caagcucauu gcacgcaaga aagacuggga cccgaagaag uacggaggau ucgauucgcc 3480

gacugucgca uacuccgucc ucgugguggc caagguggag aagggaaaga gcaaaaagcu 3540

caaauccguc aaagagcugc uggggauuac caucauggaa cgauccucgu ucgagaagaa 3600

cccgauugau uuccucgagg cgaaggguua caaggaggug aagaaggauc ugaucaucaa 3660

acucccccaag uacucacugu ucgaacugga aaauggucgg aagcgcaugc uggcuucggc 3720

cggagaacuc caaaaaggaa augagcuggc cuugccuagc aaguacguca acuuccucua 3780

ucuugcuucg cacuacgaaa aacucaaagg gucaccggaa gauaacgaac agaagcagcu 3840

uuucguggag cagcacaagc auuaucugga ugaaaucauc gaacaaaucu ccgaguuuuc 3900

aaagcgcgug auccucgccg acgccaaccu cgacaaaguc cugucggccu acaauaagca 3960

uagagauaag ccgaucagag aacaggccga gaacauuauc cacuuguuca cccugacuaa 4020

ccugggagcc ccagccgccu ucaaguacuu cgauacuacu aucgaucgca aaagauacac 4080

guccaccaag gaaguucugg acgcgacccu gauccaccaa agcaucacug gacucuacga 4140

aacuaggauc gaucugucgc agcugggugg cgauggcggu ggaucuccga aaaagaagag 4200

aaagguguaa ugagcuagcc aucacauuua aaagcaucuc agccuaccau gagaauaaga 4260

gaaagaaaau gaagaucaau agcuuauuca ucucuuuuuc uuuuucguug guguaaagcc 4320

aacacccugu cuaaaaaaca uaaauuucuu uaaucauuuu gccucuuuuc ucugugcuuc 4380

aauuaauaaa aaauggaaag aaccucgaga aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4440

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4500

aaaaaaaaau cuag 4514

<210> 6244
<211> 4245
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6244
atggccccca agaagaagcg gaaggtgggc atccacggcg tgcccgccgc cgacaagaag 60

tacagcatcg gcctggacat cggcaccaac agcgtgggct gggccgtgat caccgacgag 120

tacaaggtgc ccagcaagaa gttcaaggtg ctgggcaaca ccgaccggca cagcatcaag 180

aagaacctga tcggcgccct gctgttcgac agcggcgaga ccgccgaggc cacccggctg 240

aagcggaccg cccggcggcg gtacacccgg cggaagaacc ggatctgcta cctgcaggag 300

atcttcagca acgagatggc caaggtggac gacagcttct tccaccggct ggaggagagc 360

ttcctggtgg aggaggacaa gaagcacgag cggcacccca tcttcggcaa catcgtggac 420

gaggtggcct accacgagaa gtaccccacc atctaccacc tgcggaagaa gctggtggac 480

agcaccgaca aggccgacct gcggctgatc tacctggccc tggcccacat gatcaagttc 540

cggggccact tcctgatcga gggcgacctg aaccccgaca acagcgacgt ggacaagctg 600

ttcatccagc tggtgcagac ctacaaccag ctgttcgagg agaaccccat caacgccagc 660

ggcgtggacg ccaaggccat cctgagcgcc cggctgagca agagccggcg gctggagaac 720

ctgatcgccc agctgcccgg cgagaagaag aacggcctgt tcggcaacct gatcgccctg 780

agcctgggcc tgaccccaa cttcaagagc aacttcgacc tggccgagga cgccaagctg 840

cagctgagca aggacaccta cgacgacgac ctggacaacc tgctggccca gatcggcgac 900

cagtacgccg acctgttcct ggccgccaag aacctgagcg acgccatcct gctgagcgac 960

atcctgcggg tgaacaccga gatcaccaag gccccctga gcgccagcat gatcaagcgg 1020

tacgacgagc accaccagga cctgaccctg ctgaaggccc tggtgcggca gcagctgccc 1080

gagaagtaca aggagatctt cttcgaccag agcaagaacg gctacgccgg ctacatcgac 1140

ggcggcgcca gccaggagga gttctacaag ttcatcaagc ccatcctgga gaagatggac 1200

ggcaccgagg agctgctggt gaagctgaac cgggaggacc tgctgcggaa gcagcggacc 1260

ttcgacaacg gcagcatccc ccaccagatc cacctgggcg agctgcacgc catcctgcgg 1320

cggcaggagg acttctaccc cttcctgaag gacaaccggg agaagatcga gaagatcctg 1380

accttccgga tcccctacta cgtgggcccc ctggcccggg gcaacagccg gttcgcctgg 1440

atgacccgga agagcgagga gaccatcacc ccctggaact tcgaggaggt ggtggacaag 1500

ggcgccagcg cccagagctt catcgagcgg atgaccaact tcgacaagaa cctgcccaac 1560

gagaaggtgc tgcccaagca cagcctgctg tacgagtact tcaccgtgta caacgagctg 1620

accaaggtga agtacgtgac cgagggcatg cggaagcccg ccttcctgag cggcgagcag 1680

aagaaggcca tcgtggacct gctgttcaag accaaccgga aggtgaccgt gaagcagctg 1740

aaggaggact acttcaagaa gatcgagtgc ttcgacagcg tggagatcag cggcgtggag 1800

gaccggttca acgccagcct gggcacctac cacgacctgc tgaagatcat caaggacaag 1860

gacttcctgg acaacgagga gaacgaggac atcctggagg acatcgtgct gaccctgacc 1920

ctgttcgagg accgggagat gatcgaggag cggctgaaga cctacgccca cctgttcgac 1980

gacaaggtga tgaagcagct gaagcggcgg cggtacaccg gctggggccg gctgagccgg 2040

aagctgatca acggcatccg ggacaagcag agcggcaaga ccatcctgga cttcctgaag 2100

agcgacggct tcgccaaccg gaacttcatg cagctgatcc acgacgacag cctgaccttc 2160

aaggaggaca tccagaaggc ccaggtgagc ggccagggcg acagcctgca cgagcacatc 2220

gccaacctgg ccggcagccc cgccatcaag aagggcatcc tgcagaccgt gaaggtggtg 2280

gacgagctgg tgaaggtgat gggccggcac aagcccgaga acatcgtgat cgagatggcc 2340

cgggagaacc agaccaccca gaagggccag aagaacagcc gggagcggat gaagcggatc 2400

gaggagggca tcaaggagct gggcagccag atcctgaagg agcaccccgt ggagaacacc 2460

cagctgcaga acgagaagct gtacctgtac tacctgcaga acggccggga catgtacgtg 2520

gaccaggagc tggacatcaa ccggctgagc gactacgacg tggaccacat cgtgccccag 2580

agcttcctga aggacgacag catcgacaac aaggtgctga cccggagcga caagaaccgg 2640

ggcaagagcg acaacgtgcc cagcgaggag gtggtgaaga agatgaagaa ctactggcgg 2700

cagctgctga acgccaagct gatcacccag cggaagttcg acaacctgac caaggccgag 2760

cggggcggcc tgagcgagct ggacaaggcc ggcttcatca agcggcagct ggtggagacc 2820

cggcagatca ccaagcacgt ggcccagatc ctggacagcc ggatgaacac caagtacgac 2880

gagaacgaca agctgatccg ggaggtgaag gtgatcaccc tgaagagcaa gctggtgagc 2940

gacttccgga aggacttcca gttctacaag gtgcgggaga tcaacaacta ccaccacgcc 3000

cacgacgcct acctgaacgc cgtggtgggc accgccctga tcaagaagta ccccaagctg 3060

gagagcgagt tcgtgtacgg cgactacaag gtgtacgacg tgcggaagat gatcgccaag 3120

agcgagcagg agatcggcaa ggccaccgcc aagtacttct tctacagcaa catcatgaac 3180

ttcttcaaga ccgagatcac cctggccaac ggcgagatcc ggaagcggcc cctgatcgag 3240

accaacggcg agaccggcga gatcgtgtgg gacaagggcc gggacttcgc caccgtgcgg 3300

aaggtgctga gcatgcccca ggtgaacatc gtgaagaaga ccgaggtgca gaccggcggc 3360

ttcagcaagg agagcatcct gcccaagcgg aacagcgaca agctgatcgc ccggaagaag 3420

gactgggacc ccaagaagta cggcggcttc gacagcccca ccgtggccta cagcgtgctg 3480

gtggtggcca aggtggagaa gggcaagagc aagaagctga agagcgtgaa ggagctgctg 3540

ggcatcacca tcatggagcg gagcagcttc gagaagaacc ccatcgactt cctggaggcc 3600

aagggctaca aggaggtgaa gaaggacctg atcatcaagc tgcccaagta cagcctgttc 3660

gagctggaga acggccggaa gcggatgctg gccagcgccg gcgagctgca gaagggcaac 3720

gagctggccc tgcccagcaa gtacgtgaac ttcctgtacc tggccagcca ctacgagaag 3780

ctgaagggca gccccgagga caacgagcag aagcagctgt tcgtggagca gcacaagcac 3840

tacctggacg agatcatcga gcagatcagc gagttcagca agcgggtgat cctggccgac 3900

gccaacctgg acaaggtgct gagcgcctac aacaagcacc gggacaagcc catccgggag 3960

caggccgaga acatcatcca cctgttcacc ctgaccaacc tgggcgcccc cgccgccttc 4020

aagtacttcg acaccaccat cgaccggaag cggtacacca gcaccaagga ggtgctggac 4080

gccaccctga tccaccagag catcaccggc ctgtacgaga cccggatcga cctgagccag 4140

ctgggcggcg acagcggcgg caagcggccc gccgccacca agaaggccgg ccaggccaag 4200

aagaagaagg gcagctaccc ctacgacgtg cccgactacg cctga 4245

<210> 6245
<211> 4245
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6245
auggccccca agaagaagcg gaaggugggc auccacggcg ugcccgccgc cgacaagaag 60

uacagcaucg gccuggacau cggcaccaac agcgugggcu gggccgugau caccgacgag 120

uacaaggugc ccagcaagaa guucaaggug cugggcaaca ccgaccggca cagcaucaag 180

aagaaccuga ucggcgcccu gcuguucgac agcggcgaga ccgccgaggc cacccggcug 240

aagcggaccg cccggcggcg guacacccgg cggaagaacc ggaucugcua ccugcaggag 300

aucuucagca acgagauggc caagguggac gacagcuucu uccaccggcu ggaggagagc 360

uuccuggugg aggaggacaa gaagcacgag cggcacccca ucuucggcaa caucguggac 420

gagguggccu accacgagaa guaccccacc aucuaccacc ugcggaagaa gcugguggac 480

agcaccgaca aggccgaccu gcggcugauc uaccuggccc uggcccacau gaucaaguuc 540

cggggccacu uccugaucga gggcgaccug aaccccgaca acagcgacgu ggacaagcug 600

uucauccagc uggugcagac cuacaaccag cuguucgagg agaaccccau caacgccagc 660

ggcguggacg ccaaggccau ccugagcgcc cggcugagca agagccggcg gcuggagaac 720

cugaucgccc agcugcccgg cgagaagaag aacggccugu ucggcaaccu gaucgcccug 780

agccugggcc ugacccccaa cuucaagagc aacuucgacc uggccgagga cgccaagcug 840

cagcugagca aggacaccua cgacgacgac cuggacaacc ugcuggccca gaucggcgac 900

caguacgccg accuguuccu ggccgccaag aaccugagcg acgccauccu gcugagcgac 960

auccugcggg ugaacaccga gaucaccaag gccccccuga gcgccagcau gaucaagcgg 1020

uacgacgagc accaccagga ccugacccug cugaaggccc uggugcggca gcagcugccc 1080

gagaaguaca aggagaucuu cuucgaccag agcaagaacg gcuacgccgg cuacaucgac 1140

ggcggcgcca gccaggagga guucuacaag uucaucaagc ccauccugga gaagauggac 1200

ggcaccgagg agcugcuggu gaagcugaac cgggaggacc ugcugcggaa gcagcggacc 1260

uucgacaacg gcagcauccc ccaccagauc caccugggcg agcugcacgc cauccugcgg 1320

cggcaggagg acuucuaccc cuuccugaag gacaaccggg agaagaucga gaagauccug 1380

accuuccgga uccccuacua cgugggcccc cuggcccggg gcaacagccg guucgccugg 1440

augacccgga agagcgagga gaccaucacc cccuggaacu ucgaggaggu gguggacaag 1500

ggcgccagcg cccagagcuu caucgagcgg augaccaacu ucgacaagaa ccugcccaac 1560

gagaaggugc ugcccaagca cagccugcug uacgaguacu ucaccgugua caacgagcug 1620

accaagguga aguacgugac cgagggcaug cggaagcccg ccuuccugag cggcgagcag 1680

aagaaggcca ucguggaccu gcuguucaag accaaccgga aggugaccgu gaagcagcug 1740

aaggaggacu acuucaagaa gaucgagugc uucgacagcg uggagaucag cggcguggag 1800

gaccgguuca acgccagccu gggcaccuac cacgaccugc ugaagaucau caaggacaag 1860

gacuuccugg acaacgagga gaacgaggac auccuggagg acaucgugcu gacccugacc 1920

cuguucgagg accgggagau gaucgaggag cggcugaaga ccuacgccca ccuguucgac 1980

gacaagguga ugaagcagcu gaagcggcgg cgguacaccg gcuggggccg gcugagccgg 2040

aagcugauca acggcauccg ggacaagcag agcggcaaga ccauccugga cuuccugaag 2100

agcgacggcu ucgccaaccg gaacuucaug cagcugaucc acgacgacag ccugaccuuc 2160

aaggaggaca uccagaaggc ccaggugagc ggccagggcg acagccugca cgagcacauc 2220

gccaaccugg ccggcagccc cgccaucaag aagggcaucc ugcagaccgu gaagguggug 2280

gacgagcugg ugaaggugau gggccggcac aagcccgaga acaucgugau cgagauggcc 2340

cgggagaacc agaccaccca gaagggccag aagaacagcc gggagcggau gaagcggauc 2400

gaggagggca ucaaggagcu gggcagccag auccugaagg agcaccccgu ggagaacacc 2460

cagcugcaga acgagaagcu guaccuguac uaccugcaga acggccggga cauguacgug 2520

gaccaggagc uggacaucaa ccggcugagc gacuacgacg uggaccacau cgugccccag 2580

agcuuccuga aggacgacag caucgacaac aaggugcuga cccggagcga caagaaccgg 2640

ggcaagagcg acaacgugcc cagcgaggag guggugaaga agaugaagaa cuacuggcgg 2700

cagcugcuga acgccaagcu gaucacccag cggaaguucg acaaccugac caaggccgag 2760

cggggcggcc ugagcgagcu ggacaaggcc ggcuucauca agcggcagcu gguggagacc 2820

cggcagauca ccaagcacgu ggcccagauc cuggacagcc ggaugaacac caaguacgac 2880

gagaacgaca agcugauccg ggaggugaag gugaucaccc ugaagagcaa gcuggugagc 2940

gacuuccgga aggacuucca guucuacaag gugcgggaga ucaacaacua ccaccacgcc 3000

cacgacgccu accugaacgc cguggugggc accgcccuga ucaagaagua ccccaagcug 3060

gagagcgagu ucguguacgg cgacuacaag guguacgacg ugcggaagau gaucgccaag 3120

agcgagcagg agaucggcaa ggccaccgcc aaguacuucu ucuacagcaa caucaugaac 3180

uucuucaaga ccgagaucac ccuggccaac ggcgagaucc ggaagcggcc ccugaucgag 3240

accaacggcg agaccggcga gaucgugugg gacaagggcc gggacuucgc caccgugcgg 3300

aaggugcuga gcaugcccca ggugaacauc gugaagaaga ccgaggugca gaccggcggc 3360

uucagcaagg agagcauccu gcccaagcgg aacagcgaca agcugaucgc ccggaagaag 3420

gacugggacc ccaagaagua cggcggcuuc gacagcccca ccguggccua cagcgugcug 3480

gugguggcca agguggagaa gggcaagagc aagaagcuga agagcgugaa ggagcugcug 3540

ggcaucacca ucauggagcg gagcagcuuc gagaagaacc ccaucgacuu ccuggaggcc 3600

aagggcuaca aggaggugaa gaaggaccug aucaucaagc ugcccaagua cagccuguuc 3660

gagcuggaga acggccggaa gcggaugcug gccagcgccg gcgagcugca gaagggcaac 3720

gagcuggccc ugcccagcaa guacgugaac uuccuguacc uggccagcca cuacgagaag 3780

cugaagggca gccccgagga caacgagcag aagcagcugu ucguggagca gcacaagcac 3840

uaccuggacg agaucaucga gcagaucagc gaguucagca agcgggugau ccuggccgac 3900

gccaaccugg acaaggugcu gagcgccuac aacaagcacc gggacaagcc cauccgggag 3960

caggccgaga acaucaucca ccuguucacc cugaccaacc ugggcgcccc cgccgccuuc 4020

aaguacuucg acaccaccau cgaccggaag cgguacacca gcaccaagga ggugcuggac 4080

gccacccuga uccaccagag caucaccggc cuguacgaga cccggaucga ccugagccag 4140

cugggcggcg acagcggcgg caagcggccc gccgccacca agaaggccgg ccaggccaag 4200

aagaagaagg gcagcuaccc cuacgacgug cccgacuacg ccuga 4245

<210> 6246
<211> 1414
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6246

Met Ala Pro Lys Lys Lys Arg Lys Val Gly Ile His Gly Val Pro Ala
1 5 10 15

Ala Asp Lys Lys Tyr Ser Ile Gly Leu Asp Ile Gly Thr Asn Ser Val
20 25 30

Gly Trp Ala Val Ile Thr Asp Glu Tyr Lys Val Pro Ser Lys Lys Phe
35 40 45

Lys Val Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile
50 55 60

Gly Ala Leu Leu Phe Asp Ser Gly Glu Thr Ala Glu Ala Thr Arg Leu
65 70 75 80

Lys Arg Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys
85 90 95

Tyr Leu Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser
100 105 110

Phe Phe His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys
115 120 125

His Glu Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr
130 135 140

```
His Glu Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp
145                 150                 155                 160

Ser Thr Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His
                165                 170                 175

Met Ile Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro
            180                 185                 190

Asp Asn Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr
        195                 200                 205

Asn Gln Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala
    210                 215                 220

Lys Ala Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn
225                 230                 235                 240

Leu Ile Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn
                245                 250                 255

Leu Ile Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe
            260                 265                 270

Asp Leu Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp
        275                 280                 285

Asp Asp Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp
    290                 295                 300

Leu Phe Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp
305                 310                 315                 320

Ile Leu Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser
                325                 330                 335

Met Ile Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys
            340                 345                 350

Ala Leu Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe
        355                 360                 365

Asp Gln Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser
    370                 375                 380

Gln Glu Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp
385                 390                 395                 400

Gly Thr Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg
                405                 410                 415
```

```
Lys Gln Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu
            420                 425                 430

Gly Glu Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe
        435                 440                 445

Leu Lys Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile
    450                 455                 460

Pro Tyr Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp
465                 470                 475                 480

Met Thr Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu
                485                 490                 495

Val Val Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr
            500                 505                 510

Asn Phe Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser
        515                 520                 525

Leu Leu Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys
    530                 535                 540

Tyr Val Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln
545                 550                 555                 560

Lys Lys Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr
                565                 570                 575

Val Lys Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp
            580                 585                 590

Ser Val Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly
        595                 600                 605

Thr Tyr His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp
    610                 615                 620

Asn Glu Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr
625                 630                 635                 640

Leu Phe Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala
                645                 650                 655

His Leu Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr
            660                 665                 670

Thr Gly Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp
        675                 680                 685
```

```
Lys Gln Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe
    690                 695                 700

Ala Asn Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe
705                 710                 715                 720

Lys Glu Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu
                725                 730                 735

His Glu His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly
            740                 745                 750

Ile Leu Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly
        755                 760                 765

Arg His Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln
    770                 775                 780

Thr Thr Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile
785                 790                 795                 800

Glu Glu Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro
                805                 810                 815

Val Glu Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu
            820                 825                 830

Gln Asn Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg
        835                 840                 845

Leu Ser Asp Tyr Asp Val Asp His Ile Val Pro Gln Ser Phe Leu Lys
    850                 855                 860

Asp Asp Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg
865                 870                 875                 880

Gly Lys Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys
                885                 890                 895

Asn Tyr Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys
            900                 905                 910

Phe Asp Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp
        915                 920                 925

Lys Ala Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr
    930                 935                 940

Lys His Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp
945                 950                 955                 960

Glu Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
```

```
               965                 970                 975

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg
            980                 985                 990

Glu Ile Asn Asn Tyr His His Ala  His Asp Ala Tyr Leu  Asn Ala Val
        995                 1000                1005

Val Gly  Thr Ala Leu Ile Lys  Lys Tyr Pro Lys Leu  Glu Ser Glu
    1010                1015                1020

Phe Val  Tyr Gly Asp Tyr Lys  Val Tyr Asp Val Arg  Lys Met Ile
    1025                1030                1035

Ala Lys  Ser Glu Gln Glu Ile  Gly Lys Ala Thr Ala  Lys Tyr Phe
    1040                1045                1050

Phe Tyr  Ser Asn Ile Met Asn  Phe Phe Lys Thr Glu  Ile Thr Leu
    1055                1060                1065

Ala Asn  Gly Glu Ile Arg Lys  Arg Pro Leu Ile Glu  Thr Asn Gly
    1070                1075                1080

Glu Thr  Gly Glu Ile Val Trp  Asp Lys Gly Arg Asp  Phe Ala Thr
    1085                1090                1095

Val Arg  Lys Val Leu Ser Met  Pro Gln Val Asn Ile  Val Lys Lys
    1100                1105                1110

Thr Glu  Val Gln Thr Gly Gly  Phe Ser Lys Glu Ser  Ile Leu Pro
    1115                1120                1125

Lys Arg  Asn Ser Asp Lys Leu  Ile Ala Arg Lys Lys  Asp Trp Asp
    1130                1135                1140

Pro Lys  Lys Tyr Gly Gly Phe  Asp Ser Pro Thr Val  Ala Tyr Ser
    1145                1150                1155

Val Leu  Val Val Ala Lys Val  Glu Lys Gly Lys Ser  Lys Lys Leu
    1160                1165                1170

Lys Ser  Val Lys Glu Leu Leu  Gly Ile Thr Ile Met  Glu Arg Ser
    1175                1180                1185

Ser Phe  Glu Lys Asn Pro Ile  Asp Phe Leu Glu Ala  Lys Gly Tyr
    1190                1195                1200

Lys Glu  Val Lys Lys Asp Leu  Ile Ile Lys Leu Pro  Lys Tyr Ser
    1205                1210                1215

Leu Phe  Glu Leu Glu Asn Gly  Arg Lys Arg Met Leu  Ala Ser Ala
    1220                1225                1230
```

```
Gly Glu  Leu Gln Lys Gly Asn  Glu Leu Ala Leu Pro  Ser Lys Tyr
    1235                1240                1245

Val Asn  Phe Leu Tyr Leu Ala  Ser His Tyr Glu Lys  Leu Lys Gly
    1250                1255                1260

Ser Pro  Glu Asp Asn Glu Gln  Lys Gln Leu Phe Val  Glu Gln His
    1265                1270                1275

Lys His  Tyr Leu Asp Glu Ile  Ile Glu Gln Ile Ser  Glu Phe Ser
    1280                1285                1290

Lys Arg  Val Ile Leu Ala Asp  Ala Asn Leu Asp Lys  Val Leu Ser
    1295                1300                1305

Ala Tyr  Asn Lys His Arg Asp  Lys Pro Ile Arg Glu  Gln Ala Glu
    1310                1315                1320

Asn Ile  Ile His Leu Phe Thr  Leu Thr Asn Leu Gly  Ala Pro Ala
    1325                1330                1335

Ala Phe  Lys Tyr Phe Asp Thr  Thr Ile Asp Arg Lys  Arg Tyr Thr
    1340                1345                1350

Ser Thr  Lys Glu Val Leu Asp  Ala Thr Leu Ile His  Gln Ser Ile
    1355                1360                1365

Thr Gly  Leu Tyr Glu Thr Arg  Ile Asp Leu Ser Gln  Leu Gly Gly
    1370                1375                1380

Asp Ser  Gly Gly Lys Arg Pro  Ala Ala Thr Lys Lys  Ala Gly Gln
    1385                1390                1395

Ala Lys  Lys Lys Lys Gly Ser  Tyr Pro Tyr Asp Val  Pro Asp Tyr
    1400                1405                1410

Ala
```

<210> 6247
<211> 4925
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6247

```
ctagaactac tgcacgatcc aggatatcaa tagttaagaa actaagacat tggttcactt       60

gctcaactta accaaaacac cacagacggg cttgcatatg acaacagttc tagaggatca      120

aatgtccctg atcaaatgcc ctagcaggtt ctgtgtctga tgagggctgc tggttcatgg      180
```

gtggtgcttt ttctcagtgt ccttacaggt ggaaggtatc cagctttctt ggaccttata 240

ttaaagcacg cattccattg atgtgagtag atagcttagt cagagcccca aagtgattta 300

agcacctcca aaaccctccg tctccggatg ctccccccatt ggtgaacaga tttcaacata 360

gcaattgagc aggaggaaag gaagccaaat tatttgatca cagccagtac tttggtgaac 420

acccaaaccc agcatggagc tgaatatctg taatctcagt atccagcagg tggatattgg 480

ggaattaaga cttcaaggcc agacttggct acatagtaag tttgatgcca tcctgggcta 540

tatgagatcc tgtttccaaa acccccaaat agaaacaata aaaaaatggc agtccttcat 600

gttcactgct accctagaag gtcagttttg cttgtaacag atgactaaca gaggaacaag 660

gtcccggaag agctaccagt atgctggctg ccaatgaagc tgctgaagtc ttagtagatt 720

taggagctat ggtcctgact tccatcacag ccccagcacc accatgggca ctgcccagca 780

gtctatcttc ttttaggtct tcaggtgtcc ctgggtagag aacaaggctt ctgcttgcat 840

agggctgatg ccccagtaca gtgacagtct cacaatgagt gcagcaatgt ggccacagaa 900

cggggaaatg tgtgttcttt aactagtagc ttttataatc atgataaaaa gataagtgtc 960

tactctcaag ctgaaagctt ttcacaggca tctgattctc ttgctaaatg acaaagtggt 1020

tagaggaggg acctacagct ttcattgtct acactcaggt ttcttttgag aattttacag 1080

taggtatgta ttgttttcta gtcaacacag aaataaaagg atttgttttg ttgaaaagaa 1140

gtgggggttt tggtactgat gaggggaaat tgatttatgt tacttattca ttctcaggtt 1200

catggctgag actccttatg acaaatgata gattaataaa agcatgcaaa tgctggagct 1260

ctgctggcgg agtacctgat atgcaaggat gaagatctct gttcaatccc cagaaatcaa 1320

ataaaaaagc tgggcatagt gaggaagagg agatgggagg attcctgtgg ctggctggac 1380

agctaaccta gcctattcat ctatttccag gccactaagg gatggtacct taaaaaataa 1440

caataataat aaaaaataac aataataata aataaaaaag gtagctggtt cctgaggagc 1500

atctaaggat atcctttaac tccacgtgca catacactgt atacacagga acacatacaa 1560

gcatgcagat ttacctatca agttttacca aaaaaaaaaa aaaaaaaaaa aaagaacact 1620

ttattcactg ttggtgggta tgtaaactgg catatgtagc cactatgaaa atcagcacag 1680

aggttccctt cccactccaa caaaacaaaa caaaacaaaa caaaacaaaa caaaacaaaa 1740

caaaacaaaa ccctctagaa ctagaactag aactactgca cgactataat gatgatcttg 1800

ttctttctgt ttaattttac tgtccctagc ttcttagcat ctgcggatgt ttttcctggc 1860

agatatttac tcaccatgac ttcttccaga aggggtgttg gtagctttca tgtgactatt 1920

tctatttcac ttttccatgt aacgagtgat gctgttggat ttctctttca ttaattagat 1980

tttttctgtc tcatcctttt gctttagcca cattgggatt atcgtctacc gaggatgaag 2040

gcgaggaccc ctggtaccaa aaagcatgca agtgcgattg ccaaggagga cccaatgctc 2100

tgtggtctgc aggtgccacc tccttggact gtataccaga atgcccatat cacaagcctc 2160

tgggtttcga gtcaggggag gtcacaccgg accagatcac ctgctctaac ccggagcagt 2220

atgtgggctg gtattcttcg tggactgcaa acaaggcccg gctcaacagt caaggctttg 2280

ggtgtgcctg gctctccaag ttccaggaca gtagccagtg gttacagata gatctgaagg 2340

agatcaaagt gatttcaggg atcctcaccc aggggcgctg tgacatcgat gagtggatga 2400

ccaagtacag cgtgcagtac aggaccgatg agcgcctgaa ctggatttac tacaaggacc 2460

agactggaaa caaccgggtc ttctatggca actcggaccg cacctccacg gttcagaacc 2520

tgctgcggcc ccccatcatc tcccgcttca tccgcctcat cccgctgggc tggcacgtcc 2580

gcattgccat ccggatggag ctgctggagt gcgtcagcaa gtgtgcctga cagacatgat 2640

aagatacatt gatgagtttg gacaaaccac aactagaatg cagtgaaaaa aatgctttat 2700

ttgtgaaatt tgtgatgcta ttgctttatt tgtaaccatt ataagctgca ataaacaagt 2760

taacaacaac aattgcattc attttatgtt tcaggttcag ggggaggtgt gggaggtttt 2820

ttaaagcaag taaaacctct acaaatgtgg tagagggcct atttcccatg attccttcat 2880

atttgcatat acgatacaag gctgttagag agataattgg aattaatttg actgtaaaca 2940

caaagatatt agtacaaaat acgtgacgta gaaagtaata atttcttggg tagtttgcag 3000

ttttaaaatt atgttttaaa atggactatc atatgcttac cgtaacttga aagtatttcg 3060

atttcttggc tttatatatc ttgtggaaag gacgaaacac cgctagaact actgcacgat 3120

ccagggtttt agagctagaa atagcaagtt aaaataaggc tagtccgtta tcaacttgaa 3180

aaagtggcac cgagtcggtg ctttttttt ccaggtttac cactcctagg tatttactca 3240

aaggactcta tacgtcaacc tgtgacagag gcatcatata caagcaggga gtggtggcac 3300

ctgcctttaa tcccacccct caggaggcag agtcaggtag atctctgtga gttcgaggcc 3360

agtttggtct acatagtgag ttctagtaca gccataagac catatagcca tatggagggg 3420

ggattgtgag catagagtat gaatgttctt gagagaatta ttaaatgaat tggaattatt 3480

atacactgtc ttctttcata ggaaaaatga acagaaaggg agagatcttt gggtggggct 3540

aacagcatac atgacatgaa agcagaaggg gattagttat tggaaggcag ggagggaccc 3600

aggaggatga agggaagaga atgcaaggga aaggagtaaa ggaggaggag gtagaggtac 3660

acactattaa ttccagcact tgtgaggagg ggacagagct ctgtgagttc aaggtcagcc 3720

ccctctgcat agtcagttcc aggatagcca atggctacat aatgagaccc tgtgtcagag 3780

aaggtggccg gcgagggata ttgatgctta cagtttactt tagccaccac acagctgaat 3840

gagttaaacc tgttcctgct acttttgcac tttcaatgct cccagattac ttacatggaa 3900

tttatatttt attgtggttt aatagctcct gtacatcata gacaaacctc aagaaaaatt 3960

ttcaaccaat agtccaggca aaaataacct ctttttcttt ctttctttct ttctttttt 4020

ttttttttt ttggtttttt gaaacagggt ttctctgtat agccctggct gtcctggaac 4080

tcactttgta caccaggctg gcctcgaact cagaaatcca cctgcctctg cctcccgagt 4140

gctcggatta aaggcgtgca ccaccaccgt cccgcaaaaa ataacctgtt tttgttgttt 4200

taattatttt taagatttta tgtgtatggg tgtctgtctg tatgtatgtc tgtgtaccac 4260

ttgtatgctt ggtgcccaag aaggacagaa cagatcatag ggtttcctgg gataagagtt 4320

ataggagtta tagatgactg taagccacca agtggacgct gggaattgaa ccttggttag 4380

ctggaagagt gtccagtatt tttaattcca gtccccgttg tttgtctatg aagattttgc 4440

ttggtagtcc agtctggctt taagaaacag ggtctcatgc atccctggct tgctcagact 4500

tccatgcagc tgaggatggc tttagagtaa caaccctcct gccttttcct cgtagagtgc 4560

tgagattaca gtcctgtgcc accagcagac ttctcctaac aagaatgtgg cacagggagg 4620

caactgggaa tcaaacagga aggaggagta aaaggaaggg gaggaaggag aggagaagtg 4680

gcaggaggag aagaaaaagg aggcggagaa aaggtggtag tggtggagga agaggaggag 4740

gaggaggagg aggaggaggg ggacttaatc agtaaaggaa aaaggctgag ctcagtcctt 4800

ggaacctaca tggtaggaga gaatgagact tctgcaaagt ttcctctgat ccccacactg 4860

gagcaatggt gccatcacat cactctccca cttcacccaa ctcctggatc gtgcagtagt 4920

tctag 4925

<210> 6248
<211> 5034
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6248
ctagaactac tgcacgatcc aggaggcatc tgattctctt gctaaatgac aaagtggtta 60

gaggagggac ctacagcttt cattgtctac actcaggttt cttttgagaa ttttacagta 120

ggtatgtatt gttttctagt caacacagaa ataaaaggat ttgttttgtt gaaaagaagt 180

gggggttttg gtactgatga ggggaaattg atttatgtta cttattcatt ctcaggttca 240

tggctgagac tccttatgac aaatgataga ttaataaaag catgcaaatg ctggagctct 300

gctggcggag tacctgatat gcaaggatga agatctctgt tcaatcccca gaaatcaaat 360

aaaaaagctg ggcatagtga ggaagaggag atgggaggat tcctgtggct ggctggacag 420

ctaacctagc ctattcatct atttccaggc cactaaggga tggtacctta aaaaataaca 480

ataataataa aaaataacaa taataataaa taaaaaaggt agctggttcc tgaggagcat 540

ctaaggatat cctttaactc cacgtgcaca tacactgtat acacaggaac acatacaagc 600

atgcagattt acctatcaag ttttaccaaa aaaaaaaaaa aaaaaaaaaa agaacacttt 660

attcactgtt ggtgggtatg taaactggca tatgtagcca ctatgaaaat cagcacagag 720

gttcccttcc cactccaaca aaacaaaaca aaacaaaaca aaacaaaaca aaacaaaaca 780

aaacaaaacc ctctagaact agaactagaa ctactgcacg actataatga tgatcttgtt 840

ctttctgttt aattttactg tccctagctt cttagcatct gcggatgttt ttcctggcag 900

atatttactc accatgactt cttccagaag gggtgttggt agctttcatg tgactatttc 960

tatttcactt ttccatgtaa cgagtgatgc tgttggattt ctctttcatt aattagattt 1020

tttctgtctc atccttttgc tttagccaca ttgggattat cgtctaccga ggatgaaggc 1080

gaggacccct ggtaccaaaa agcatgcaag tgcgattgcc aaggaggacc caatgctctg 1140

tggtctgcag gtgccacctc cttggactgt ataccagaat gcccatatca caagcctctg 1200

ggtttcgagt caggggaggt cacaccggac cagatcacct gctctaaccc ggagcagtat 1260

gtgggctggt attcttcgtg gactgcaaac aaggcccggc tcaacagtca aggctttggg 1320

tgtgcctggc tctccaagtt ccaggacagt agccagtggt tacagataga tctgaaggag 1380

atcaaagtga tttcagggat cctcacccag gggcgctgtg acatcgatga gtggatgacc 1440

aagtacagcg tgcagtacag gaccgatgag cgcctgaact ggatttacta caaggaccag 1500

actggaaaca accgggtctt ctatggcaac tcggaccgca cctccacggt tcagaacctg 1560

ctgcggcccc ccatcatctc ccgcttcatc cgcctcatcc cgctgggctg gcacgtccgc 1620

attgccatcc ggatggagct gctggagtgc gtcagcaagt gtgcctgatg cctgcctcag 1680

ctcggcgcct gccagggggt gactggcaca gagcgggccg taggggaccc cctcacacac 1740

caccgagatg gacagggcta tatttcgcaa agcaattgta actgcagtgc tgggtagata 1800

attttttttt ttttaagata tagctttctg atttcaatga aataaaaatg aacttattcc 1860

ccactcaggg ccagagaaag tcagaacaaa gaaaatgtcc ccgaaacgaa ttttcttaca 1920

aaagcctaag tagcaggggt aattttctgc tcatttttttg tctcagtgat actgtgaaag 1980

gtgcagtctc aggggaacac aaagcagccc tgataatttg aaaattcatt tgctttacca 2040

cattcaagac agaaacatac agtttcctaa agcctggctt tgaatgcaga agggagcagc 2100

tcctcctagt taagtttcca ctaaatcatc gccaaagagg acttcagagc cctggggagg 2160

cagctgaggg tctcaagggt gactgggtgg cagggatgag tgcggtgggt gagaatcccg 2220

gtgccctgag aggctatacg tgacaaatga ccaaaagccc aaggtagggg agtttcctct 2280

gctcacagtt cttaccttca aggcggatct gggcttccac cctcatgaac acagggattg 2340

gggagggacc agagcgccca atacacacag ctccattatg caatccattc cagcaaattc 2400

cccgtgtctg tggtcaccat ttaggtgatc atacaggaca ggctgcacat ctcagtatat 2460

gtagggaccc caaatgacca caacacagta caattgccct ttacctaggg ctaccatttc 2520

ctagcaaacc aaacatagtt cgagaacagc tggcccagga gctaccactg gctactcaga 2580

ggaggctcat tagctggcta catgcttcgc aggaagtggg aaggactcac atcataaaaa 2640

ggaccatgta gctttttccc tgaaagcttc tcaccctcca ccctctgcct tgcaatacgc 2700

aaactgcgcc tgctcctgaa aagctctctg ggaaggaatg ggcctggctt tccgttcctg 2760

gaggcggcgc cttagattgg gaggcctcat tggccactta gagcgcagcc tgagtttcca 2820

ggccccttcc tgggagaggc tgttaacacg ggggaggggc aggagaggga tatggagagc 2880

aggtggtgga atcagaggac gaggctgctc taaagactgt tctggcccca gacacagggt 2940

agtctttgct agcagctcat ttccgagtta cttttcattt tcaaatgcca aggcaagtga 3000

ctagactcgc gctaatacag tgctggacaa cacattcacc ttttctgtga acaggcagcc 3060

ttctaaaagc cccaaacatc cttcttgatg ctttgggggc tcaattattt tatatccaac 3120

ccagcatctt tctagtccct atgctgtatg cttgaacttc ggaaaatgct tttccccgcc 3180

caatcttctc tcaaatataa acacatcaca cagggtgttg ggggtggggg gggggggtgg 3240

ggggacttat ccctggcctt aggacacagg acaaatctat tttggataga aatgcctgaa 3300

cagagaccct tatttggaaa ggtgaattaa ctttggtcac gacatggact gtcagacaaa 3360

atggcagtat cctaagagtt aaggcacatc aaacacagga gtcgagagag tgcagttcag 3420

ggaaaaagga gaggaggaaa cagtgaggca gggagaaagg ctttccaaat aagagttcat 3480

gttggaaact tttgtcacgg ctttattgag attaagttca catacaattt gtatccattt 3540

aaagtataca atttgatgac ttttggtata ttcagagttg tgcaaccatt atcactagat 3600

caattttaga aagtttatca ccccaaagag aaatcctgca cccatcagcc aacactcccc 3660

aacccatcgg ccaccccaag ccctctgcaa ccacgaatcg actgtctctg tagattggcc 3720

ttctggacgt tctacataaa tgaaatcata tagtatgtgg tagagggcct atttcccatg 3780

attccttcat atttgcatat acgatacaag gctgttagag agataattgg aattaatttg 3840

actgtaaaca caaagatatt agtacaaaat acgtgacgta gaaagtaata atttcttggg 3900

tagtttgcag ttttaaaatt atgttttaaa atggactatc atatgcttac cgtaacttga 3960

aagtatttcg atttcttggc tttatatatc ttgtggaaag gacgaaacac cgctagaact 4020

actgcacgat ccagggtttt agagctagaa atagcaagtt aaaataaggc tagtccgtta 4080

tcaacttgaa aaagtggcac cgagtcggtg ctttttttttt ccaggtttac cactcctagg 4140

tatttactca aaggactcta tacgtcaacc tgtgacagag gcatcatata caagcaggga 4200

gtggtggcac ctgcctttaa tcccacccct caggaggcag agtcaggtag atctctgtga 4260

gttcgaggcc agtttggtct acatagtgag ttctagtaca gccataagac catatagcca 4320

tatggagggg ggattgtgag catagagtat gaatgttctt gagagaatta ttaaatgaat 4380

tggaattatt atacactgtc ttctttcata ggaaaaatga acagaaaggg agagatcttt 4440

gggtggggct aacagcatac atgacatgaa agcagaaggg gattagttat tggaaggcag 4500

ggagggaccc aggaggatga agggaagaga atgcaaggga aaggagtaaa ggaggaggag 4560

gtagaggtac acactattaa ttccagcact tgtgaggagg ggacagagct ctgtgagttc 4620

aaggtcagcc ccctctgcat agtcagttcc aggatagcca atggctacat aatgagaccc 4680

tgtgtcagag aaggtggccg gcgagggata ttgatgctta cagtttactt tagccaccac 4740

acagctgaat gagttaaacc tgttcctgct acttttgcac tttcaatgct cccagattac 4800

ttacatggaa tttatatttt attgtggttt aatagctcct gtacatcata gacaaacctc 4860

aagaaaaatt ttcaaccaat agtccaggca aaaataacct ctttttcttt ctttctttct 4920

ttctttttttt ttttttttttt ttggtttttt gaaacagggt ttctctgtat agccctggct 4980

gtcctggaac tcactttgta caccaggctg gcctggatcg tgcagtagtt ctag 5034

<210> 6249
<211> 4296
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 6249

ctagaactac tgcacgatcc aggaagagga gatgggagga ttcctgtggc tggctggaca 60

gctaacctag cctattcatc tatttccagg ccactaaggg atggtacctt aaaaaataac 120

aataataata aaaaataaca ataataataa ataaaaaagg tagctggttc ctgaggagca 180

tctaaggata tcctttaact ccacgtgcac atacactgta tacacaggaa cacatacaag 240

catgcagatt tacctatcaa gttttaccaa aaaaaaaaaa aaaaaaaaaa aagaacactt 300

tattcactgt tggtgggtat gtaaactggc atatgtagcc actatgaaaa tcagcacaga 360

ggttcccttc ccactccaac aaaacaaaac aaaacaaaac aaaacaaaac aaaacaaaac 420

aaaacaaaac cctctagaac tagaactaga actactgcac gactataatg atgatcttgt 480

tctttctgtt taatttttact gtccctagct tcttagcatc tgcggatgtt tttcctggca 540

gatatttact caccatgact tcttccagaa ggggtgttgg tagctttcat gtgactattt 600

ctatttcact tttccatgta acgagtgatg ctgttggatt tctctttcat taattagatt 660

ttttctgtct catccttttg ctttagccac attgggatta tcgtctaccg aggatgaagg 720

cgaggacccc tggtaccaaa aagcatgcaa gtgcgattgc caaggaggac ccaatgctct 780

gtggtctgca ggtgccacct ccttggactg tataccagaa tgcccatatc acaagcctct 840

gggtttcgag tcaggggagg tcacaccgga ccagatcacc tgctctaacc cggagcagta 900

tgtgggctgg tattcttcgt ggactgcaaa caaggcccgg ctcaacagtc aaggctttgg 960

gtgtgcctgg ctctccaagt tccaggacag tagccagtgg ttacagatag atctgaagga 1020

gatcaaagtg atttcaggga tcctcaccca ggggcgctgt gacatcgatg agtggatgac 1080

caagtacagc gtgcagtaca ggaccgatga gcgcctgaac tggatttact acaaggacca 1140

gactggaaac aaccgggtct tctatggcaa ctcggaccgc acctccacgg ttcagaacct 1200

gctgcggccc cccatcatct cccgcttcat ccgcctcatc ccgctgggct ggcacgtccg 1260

cattgccatc cggatggagc tgctggagtg cgtcagcaag tgtgcctgat gcctgcctca 1320

gctcggcgcc tgccaggggg tgactggcac agagcgggcc gtaggggacc ccctcacaca 1380

ccaccgagat ggacagggct atatttcgca aagcaattgt aactgcagtg ctgggtagat 1440

aatttttttt tttttaagat atagctttct gatttcaatg aaataaaaat gaacttattc 1500

cccactcagg gccagagaaa gtcagaacaa agaaaatgtc cccgaaacga attttcttac 1560

aaaagcctaa gtagcagggg taattttctg ctcatttttt gtctcagtga tactgtgaaa 1620

ggtgcagtct caggggaaca caaagcagcc ctgataattt gaaaattcat ttgctttacc 1680

acattcaaga cagaaacata cagtttccta aagcctggct ttgaatgcag aagggagcag 1740

ctcctcctag ttaagtttcc actaaatcat cgccaaagag gacttcagag ccctggggag 1800

gcagctgagg gtctcaaggg tgactgggtg gcagggatga gtgcggtggg tgagaatccc 1860

ggtgccctga gaggctatac gtgacaaatg accaaaagcc caaggtaggg gagtttcctc 1920

tgctcacagt tcttaccttc aaggcggatc tgggcttcca ccctcatgaa cacagggatt 1980

ggggagggac cagagcgccc aatacacaca gctccattat gcaatccatt ccagcaaatt 2040

ccccgtgtct gtggtcacca tttaggtgat catacaggac aggctgcaca tctcagtata 2100

tgtagggacc ccaaatgacc acaacacagt acaattgccc tttacctagg gctaccattt 2160

cctagcaaac caaacatagt tcgagaacag ctggcccagg agctaccact ggctactcag 2220

aggaggctca ttagctggct acatgcttcg caggaagtgg gaaggactca catcataaaa 2280

aggaccatgt agctttttcc ctgaaagctt ctcaccctcc accctctgcc ttgcaatacg 2340

caaactgcgc ctgctcctga aaagctctct gggaaggaat gggcctggct ttccgttcct 2400

ggaggcggcg ccttagattg ggaggcctca ttggccactt agagcgcagc ctgagtttcc 2460

aggccccttc ctgggagagg ctgttaacac gggggagggg caggagaggg atatggagag 2520

caggtggtgg aatcagagga cgaggctgct ctaaagactg ttctggcccc agacacaggg 2580

tagtctttgc tagcagctca tttccgagtt acttttcatt ttcaaatgcc aaggcaagtg 2640

actagactcg cgctaataca gtgctggaca acacattcac cttttctgtg aacaggcagc 2700

cttctaaaag ccccaaacat ccttcttgat gctttggggg ctcaattatt ttatatccaa 2760

cccagcatct ttctagtccc tatgctgtat gcttgaactt cggaaaatgc ttttccccgc 2820

ccaatcttct ctcaaatata aacacatcac acagggtgtt gggggtgggg ggggggggtg 2880

gggggactta tccctggcct taggacacag gacaaatcta ttttggatag aaatgcctga 2940

acagagaccc ttatttggaa aggtgaatta actttggtca cgacatggac tgtcagacaa 3000

aatggcagta tcctaagagt taaggcacat caaacacagg agtcgagaga gtgcagttca 3060

gggaaaaagg agaggaggaa acagtgaggc agggagaaag gctttccaaa taagagttca 3120

tgttggaaac ttttgtcacg gctttattga gattaagttc acatacaatt tgtatccatt 3180

taaagtatac aatttgatga cttttggtat attcagagtt gtgcaaccat tatcactaga 3240

tcaattttag aaagtttatc accccaaaga gaaatcctgc acccatcagc caacactccc 3300

caacccatcg gccaccccaa gccctctgca accacgaatc gactgtctct gtagattggc 3360

cttctggacg ttctacataa atgaaatcat atagtatgtg gtagagggcc tatttcccat 3420

gattccttca tatttgcata tacgatacaa ggctgttaga gagataattg gaattaattt 3480

gactgtaaac acaaagatat tagtacaaaa tacgtgacgt agaaagtaat aatttcttgg 3540

gtagtttgca gttttaaaat tatgttttaa aatggactat catatgctta ccgtaacttg 3600

aaagtatttc gatttcttgg ctttatatat cttgtggaaa ggacgaaaca ccgctagaac 3660

tactgcacga tccagggttt tagagctaga aatagcaagt taaaataagg ctagtccgtt 3720

atcaacttga aaaagtggca ccgagtcggt gctttttttt ttccaggttt accactccta 3780

ggtatttact caaaggactc tatacgtcaa cctgtgacag aggcatcata tacaagcagg 3840

gagtggtggc acctgccttt aatcccaccc ctcaggaggc agagtcaggt agatctctgt 3900

gagttcgagg ccagtttggt ctacatagtg agttctagta cagccataag accatatagc 3960

catatggagg ggggattgtg agcatagagt atgaatgttc ttgagagaat tattaaatga 4020

attggaatta ttatacactg tcttctttca taggaaaaat gaacagaaag ggagagatct 4080

ttgggtgggg ctaacagcat acatgacatg aaagcagaag gggattagtt attggaaggc 4140

agggagggac ccaggaggat gaagggaaga gaatgcaagg gaaaggagta aaggaggagg 4200

aggtagaggt acacactatt aattccagca cttgtgagga ggggacagag ctctgtgagt 4260

tcaaggtcag ccccctggat cgtgcagtag ttctag 4296