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

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 November 2023 (23.11.2023)

WIPO | PCT

(10) International Publication Number
WO 2023/225495 A8

(51) International Patent Classification:
A61K 31/713 (2006.01) *A61P 25/28* (2006.01)
C12N 15/113 (2010.01)

(21) International Application Number:
PCT/US2023/067039

(22) International Filing Date:
16 May 2023 (16.05.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/342,552 16 May 2022 (16.05.2022) US

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(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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

(88) Date of publication of the international search report:
28 December 2023 (28.12.2023)

(48) Date of publication of this corrected version:
25 January 2024 (25.01.2024)

(15) Information about Correction:
see Notice of 25 January 2024 (25.01.2024)

(54) Title: COMPOSITIONS AND METHODS FOR TREATMENT OF MICROSATELLITE DNA EXPANSION DISORDERS

(57) Abstract: The present disclosure provides single- or double-stranded interfering RNA molecules (e.g.,siRNA) that target a MutS Homolog 3 (*MSH3*) gene. The interfering RNA molecules may contain specific patterns of nucleoside modifications and internucleoside linkage modifications, as pharmaceutical compositions including the same. The siRNA molecules may be branched siRNA molecules, such as di-branched, tri-branched, or tetra-branched siRNA molecules. The disclosed siRNA molecules may further feature a 5' phosphorus stabilizing moiety and/or a hydrophobic moiety. Additionally, the disclosure provides methods for delivering the siRNA molecule of the disclosure to the central nervous system of a subject, such as a subject identified as having Huntington's Disease.

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COMPOSITIONS AND METHODS FOR TREATMENT OF MICROSATELLITE DNA EXPANSION DISORDERS

Sequence Listing

The instant application contains a Sequence Listing which has been submitted electronically in XML format and is hereby incorporated by reference in its entirety. Said XML copy, created on May 15, 2023, is named “51436-034WO2_Sequence_Listing_5_15_23” and is 1,089,536 bytes in size.

Technical Field

This disclosure relates to small interfering RNA (siRNA) molecules, and compositions containing the same, that target RNA transcripts (e.g., mRNA) of a MutS Homolog 3 (*MSH3*) gene. The disclosure further describes methods for silencing of *MSH3* and the treatment of diseases that may benefit from the silencing of *MSH3* (e.g., diseases caused by pathological microsatellite DNA expansions, such as Huntington’s Disease and myotonic dystrophy type 1, among others) by delivering *MSH3*-targeting siRNA molecules to a target tissue of a subject in need.

Background

MSH3 (MutS Homolog 3) encodes a protein that is important in the DNA mismatch repair system that may play a role in the age of onset and rate of progression of diseases caused by pathological microsatellite DNA expansions, including Huntington’s Disease and myotonic dystrophy type 1. Recent studies show that individuals with a loss of function *MSH3* mutation have delayed onset of Huntington's disease compared to individuals with normal forms of the gene. Currently, there are no treatments that can alter the course of Huntington’s Disease. Accordingly, there is a need for therapeutics capable of selectively diminishing *MSH3* activity in a manner that provides effective treatment for Huntington’s Disease or other *MSH3*-related diseases or disorders.

Summary of the Invention

The present disclosure provides compositions and methods for reduction of MutS homolog 3 (*MSH3*) expression by way of small interfering RNA (siRNA)-mediated silencing of *MSH3* transcripts. The compositions and methods provide the benefit of exhibiting high selectivity toward *MSH3* over other genes.

The siRNA molecules of the disclosure can be used to silence the *MSH3* gene, thereby preventing the translation of the corresponding mRNA transcript and reducing MSH3 protein expression. This reduction of MSH3 levels thus prevents disease onset or progression, as lengthening of DNA microsatellite repeats to pathological lengths depends on MSH3 function. The siRNA molecules of the disclosure can be delivered directly to a subject in need of *MSH3* silencing by way of, for example, injection intrathecally, intracerebroventricularly, intrastriatally, intraparenchymally, intra-cisterna magna injection, such as by catheterization, intravenous injection, subcutaneous injection, or intramuscular injection.

In an aspect, the disclosure provides an siRNA molecule containing an antisense strand and sense strand having complementarity to the antisense strand. The antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

The antisense strand may be, for example, from 10 to 50 nucleotides in length (e.g., from 10 to 45 nucleotides in length, from 10 to 40 nucleotides in length, from 10 to 35 nucleotides in length, from 10 to 30 nucleotides in length, from 10 to 29 nucleotides in length, from 10 to 28 nucleotides in length, from 10 to 27 nucleotides in length, from 10 to 26 nucleotides in length, from 10 to 25 nucleotides in length, from 10 to 24 nucleotides in length, from 10 to 23 nucleotides in length, from 10 to 22 nucleotides in length, from 10 to 21 nucleotides in length, or from 10 to 20 nucleotides in length). In some embodiments, the antisense strand is 10 nucleotides in length, 11 nucleotides in length, 12 nucleotides in length, 13 nucleotides in length, 14 nucleotides in length, 15 nucleotides in length, 16 nucleotides in length, 17 nucleotides in length, 18 nucleotides in length, 19 nucleotides in length, 20 nucleotides in length, 21 nucleotides in length, 22 nucleotides in length, 23 nucleotides in length, 24 nucleotides in length, 25 nucleotides in length, 26 nucleotides in length, 27 nucleotides in length, 28 nucleotides in length, 29 nucleotides in length, 30 nucleotides in length, or more.

In some embodiments, the antisense strand has at least 70% complementarity to the region within the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region within the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region within *the MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region within the *MSH3* transcript has the nucleic acid sequence of any one of SEQ

ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region within the *MSH3* transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region within the *MSH3* transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has at least 75% complementarity to the region within the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. For example, the antisense strand may have at least 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% complementarity to the region within the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region within the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region within the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region within the *MSH3* transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region within the *MSH3* transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region within the *MSH3* transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has at least 10, at least 11, at least 12, at least 13, at least 14, at least 15, at least 16, at least 17, at least 18, at least 19, at least 20, at least 21, at least 22, at least 23, at least 24, at least 25, at least 26, at least 27, at least 28, at least 29, or 30 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has from 10 to 30 contiguous nucleotides (e.g., 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30 contiguous nucleotides) that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has from 12 to 30 contiguous nucleotides (e.g., 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30 contiguous nucleotides) that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has from 15 to 30 contiguous nucleotides (e.g., 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30 contiguous nucleotides) that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any

one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has from 18 to 30 contiguous nucleotides (e.g., 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30 contiguous nucleotides) that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has from 18 to 25 contiguous nucleotides (e.g., 18, 19, 20, 21, 22, 23, 24, or 25 contiguous nucleotides) that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID Nos: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has from 18 to 21 contiguous nucleotides (e.g., 18, 19, 20, or 21 contiguous nucleotides) that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has 21 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has 9 or fewer nucleotide mismatches relative to a region of 21 contiguous nucleobases of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408, optionally wherein the antisense strand contains 8 or fewer, 7 or fewer, 6 or fewer, 5 or fewer, 4 or fewer, 3 or fewer, 2 or fewer, or only 1 mismatch relative to the region of the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196,

197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196. In some embodiments, the region of the *MSH3* mRNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

In some embodiments, the antisense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 849, 858, 860, 918, 919, 921, 922, 924, 925, 929, 942, 945, 946, 974, 977, 982, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1033, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 858, 860, 942, 945, 946, 974, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-840, 856-900, 916, 934-955, 989-997, 1009-1021, 1036-1038, 1056-1058, 1065-1124, 1135-1146, 1152-1193, 1200-1202, and 1214-1224. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 918, 921, 922, 924, 925, 999, 1010, and 1012. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 999, 1010, and 1012.

In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 849, 858, 860, 918, 919, 921, 922, 924, 925, 929, 942, 945, 946, 974, 977, 982, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1033, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 858, 860, 942, 945, 946, 974,

993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-840, 856-900, 916, 934-955, 989-997, 1009-1021, 1036-1038, 1056-1058, 1065-1124, 1135-1146, 1152-1193, 1200-1202, and 1214-1224. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 918, 921, 922, 924, 925, 999, 1010, and 1012. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 999, 1010, and 1012.

In some embodiments, the antisense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224, optionally wherein the antisense strand has a nucleic acid sequence that is at least 96%, 97%, 98%, or 99% identical to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 849, 858, 860, 918, 919, 921, 922, 924, 925, 929, 942, 945, 946, 974, 977, 982, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1033, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 858, 860, 942, 945, 946, 974, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-840, 856-900, 916, 934-955, 989-997, 1009-1021, 1036-1038, 1056-1058, 1065-1124, 1135-1146, 1152-1193, 1200-1202, and 1214-1224. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 918, 921, 922, 924, 925, 999, 1010, and 1012. In some embodiments, the antisense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 999, 1010, and 1012.

In some embodiments, the antisense strand has the nucleic acid sequence of any one of SEQ ID NOs: 817-1224. In some embodiments, the antisense strand has the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 849, 858, 860, 918, 919, 921, 922, 924, 925, 929, 942, 945, 946, 974, 977, 982, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1033, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments the antisense strand has the nucleic acid sequence of any one of SEQ ID NOs: 821, 833-836, 858, 860, 942, 945, 946, 974, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the antisense strand has the nucleic acid sequence of any one of SEQ ID NOs: 817-

840, 856-900, 916, 934-955, 989-997, 1009-1021, 1036-1038, 1056-1058, 1065-1124, 1135-1146, 1152-1193, 1200-1202, and 1214-1224. In some embodiments, the antisense strand has the nucleic acid sequence of any one of SEQ ID NOs: 834-836, 918, 921, 922, 924, 925, 999, 1010, and 1012. In some embodiments, the antisense strand has the nucleic acid of any one of SEQ ID NOs: 834-836, 999, 1010, and 1012.

In some embodiments, the sense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 409-816. In some embodiments, the sense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 441, 450, 452, 510, 511, 513, 514, 516, 517, 521, 534, 537, 538, 566, 569, 574, 585, 591, 601, 602, 604, 605, 610, 617, 625, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 450, 452, 534, 537, 538, 566, 585, 591, 601, 602, 604, 605, 610, 617, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 409-432, 448-492, 508, 526-547, 581-589, 601-613, 628-630, 648-650, 657-716, 727-738, 744-785, 792-794, and 806-816. In some embodiments, the sense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 510, 513, 514, 516, 517, 521, 591, 602, and 604. In some embodiments, the sense strand has a nucleic acid sequence that is at least 85% identical (e.g., 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 591, 602, and 604.

In some embodiments, the sense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 409-816. In some embodiments, the sense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 441, 450, 452, 510, 511, 513, 514, 516, 517, 521, 534, 537, 538, 566, 569, 574, 585, 591, 601, 602, 604, 605, 610, 617, 625, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 450, 452, 534, 537, 538, 566, 585, 591, 601, 602, 604, 605, 610, 617, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of

any one of SEQ ID NOs: 409-432, 448-492, 508, 526-547, 581-589, 601-613, 628-630, 648-650, 657-716, 727-738, 744-785, 792-794, and 806-816. In some embodiments, the sense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 510, 513, 514, 516, 517, 521, 591, 602, and 604. In some embodiments, the sense strand has a nucleic acid sequence that is at least 90% identical (e.g., 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 591, 602, and 604.

In some embodiments, the sense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 409-816, optionally wherein the sense strand has a nucleic acid sequence that is at least 96%, 97%, 98%, or 99% identical to the nucleic acid sequence of any one of SEQ ID NOs: 409-816. In some embodiments, the sense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 441, 450, 452, 510, 511, 513, 514, 516, 517, 521, 534, 537, 538, 566, 569, 574, 585, 591, 601, 602, 604, 605, 610, 617, 625, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 450, 452, 534, 537, 538, 566, 585, 591, 601, 602, 604, 605, 610, 617, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 409-432, 448-492, 508, 526-547, 581-589, 601-613, 628-630, 648-650, 657-716, 727-738, 744-785, 792-794, and 806-816. In some embodiments, the sense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 510, 513, 514, 516, 517, 521, 591, 602, and 604. In some embodiments, the sense strand has a nucleic acid sequence that is at least 95% identical (e.g., 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 591, 602, and 604.

In some embodiments, the siRNA molecule has a sense strand having the nucleic acid sequence of any one of SEQ ID NOs: 409-816. In some embodiments, the sense strand has a nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 441, 450, 452, 510, 511, 513, 514, 516, 517, 521, 534, 537, 538, 566, 569, 574, 585, 591, 601, 602, 604, 605, 610, 617, 625, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the sense strand has a nucleic acid sequence of any one of SEQ ID NOs: 413, 425-428, 450, 452, 534, 537, 538, 566, 585, 591, 601, 602, 604, 605, 610, 617, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the siRNA molecule has a sense strand having the nucleic acid sequence of any one of SEQ ID NOs: 409-432, 448-492, 508, 526-547, 581-589, 601-613, 628-630, 648-650, 657-716, 727-738, 744-785, 792-794, and 806-816. In some embodiments, the sense strand has the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 510, 513, 514, 516, 517, 521, 591, 602, and 604. In

some embodiments, the sense strand has the nucleic acid sequence of any one of SEQ ID NOs: 426-428, 591, 602, and 604.

In some embodiments, the antisense strand has a structure represented by Formula I, wherein Formula I is, in the 5'-to-3' direction:

$$A\text{-}B\text{-}(A')_j\text{-}C\text{-}P^2\text{-}D\text{-}P^1\text{-}(C'\text{-}P^1)_k\text{-}C'$$

Formula I;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
B is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2$;
each C is a 2'-O-methyl (2'-O-Me) ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-fluoro (2'-F) ribonucleoside;
each D is a 2'-F ribonucleoside;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and
k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, the antisense strand has a structure represented by Formula A1, wherein Formula A1 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-B-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-B-S-A

Formula A1;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the antisense strand has a structure represented by Formula II, wherein Formula II is, in the 5'-to-3' direction:

$$A\text{-}B\text{-}(A')_j\text{-}C\text{-}P^2\text{-}D\text{-}P^1\text{-}(C\text{-}P^1)_k\text{-}C'$$

Formula II;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
B is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2$;
each C is a 2'-O-methyl (2'-O-Me) ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-fluoro (2'-F) ribonucleoside;
each D is a 2'-F ribonucleoside;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;

j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and
k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, antisense strand has a structure represented by Formula A2, wherein Formula A2 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-B-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-A-S-A

Formula A2;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula III, wherein Formula III is, in the 5'-to-3' direction:

$E\text{-}(A')_m\text{-}F$

Formula III;

wherein E is represented by the formula $(C\text{-}P^1)_2$;
F is represented by the formula $(C\text{-}P^2)_3\text{-}D\text{-}P^1\text{-}C\text{-}P^1\text{-}C$, $(C\text{-}P^2)_3\text{-}D\text{-}P^2\text{-}C\text{-}P^2\text{-}C$, $(C\text{-}P^2)_3\text{-}D\text{-}P^1\text{-}C\text{-}P^1\text{-}D$, or $(C\text{-}P^2)_3\text{-}D\text{-}P^2\text{-}C\text{-}P^2\text{-}D$;
A', C, D, P^1, and P^2 are as defined in Formula II; and
m is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, the sense strand has a structure represented by Formula S1, wherein Formula S1 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-S-A-S-A

Formula S1;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula S2, wherein Formula S2 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-O-A-O-A

Formula S2;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula S3, wherein Formula S3 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-S-A-S-B

Formula S3;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula S4, wherein Formula S4 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-O-A-O-B

Formula S4;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the antisense strand has a structure represented by Formula IV, wherein Formula IV is, in the 5'-to-3' direction:

$$A\text{-}(A')_j\text{-}C\text{-}P^2\text{-}B\text{-}(C\text{-}P^1)_k\text{-}C'$$

Formula IV;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
B is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1\text{-}D\text{-}P^1$;
each C is a 2'-O-Me ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-F ribonucleoside;
each D is a 2'-F ribonucleoside;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and
k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, the antisense strand has a structure represented by Formula A3, wherein Formula A3 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-B-S-A-S-A-S-A

Formula A3;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula V, wherein Formula V is, in the 5'-to-3' direction:

$E\text{-}(A')_m\text{-}C\text{-}P^2\text{-}F$

Formula V;

wherein E is represented by the formula $(C\text{-}P^1)_2$;

F is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1\text{-}C$, $D\text{-}P^2\text{-}C\text{-}P^2\text{-}C$, $D\text{-}P^1\text{-}C\text{-}P^1\text{-}D$, or $D\text{-}P^2\text{-}C\text{-}P^2\text{-}D$;

A', C, D, P^1 and P^2 are as defined in Formula IV; and

m is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, the sense strand has a structure represented by Formula S5, wherein Formula S5 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A

Formula S5;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula S6, wherein Formula S6 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A

Formula S6;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula S7, wherein Formula S7 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-B

Formula S7;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula S8, wherein Formula S8 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B

Formula S8;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the antisense strand has a structure represented by Formula VI, wherein Formula VI is, in the 5'-to-3' direction:

$$A\text{-}B_j\text{-}E\text{-}B_k\text{-}E\text{-}F\text{-}G_l\text{-}D\text{-}P^1\text{-}C'$$

Formula VI;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each B is represented by the formula $C\text{-}P^2$;
each C is a 2'-O-Me ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-F ribonucleoside;
each D is a 2'-F ribonucleoside;
each E is represented by the formula $D\text{-}P^2\text{-}C\text{-}P^2$;
F is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1$;
each G is represented by the formula $C\text{-}P^1$;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7);
k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and
l is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, the antisense strand has a structure represented by Formula A4, wherein Formula A4 is, in the 5'-to-3' direction:

A-S-B-S-A-O-A-O-A-O-B-O-A-O-A-O-A-O-A-O-A-O-A-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-B-S-A

Formula A4;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments, the sense strand has a structure represented by Formula VII, wherein Formula VII is, in the 5'-to-3' direction:

$$H\text{-}B_m\text{-}I_n\text{-}A'\text{-}B_o\text{-}H\text{-}C$$

Formula VII;

wherein A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
each H is represented by the formula $(C\text{-}P^1)_2$;
each I is represented by the formula $(D\text{-}P^2)$;
B, C, D, P^1 and P^2 are as defined in Formula VI;
m is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7);
n is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and
o is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7).

In some embodiments, the sense strand has a structure represented by Formula S9, wherein Formula S9 is, in the 5'-to-3' direction:

A-S-A-S-A-O-A-O-A-O-B-O-B-O-B-O-A-O-B-O-A-O-A-O-A-O-A-S-A-S-A

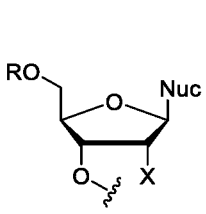
Formula S9;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

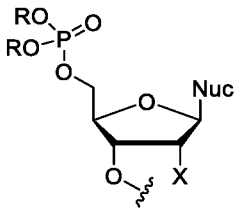
In some embodiments, the antisense strand also has a 5' phosphorus stabilizing moiety at the 5' end of the antisense strand.

In some embodiments, the sense strand also has a 5' phosphorus stabilizing moiety at the 5' end of the sense strand.

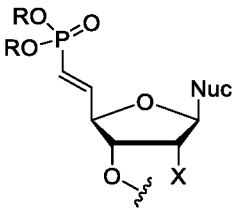
In some embodiments, each 5' phosphorus stabilizing moiety is, independently, represented by any one of Formulas IX, XX, XI, XII, XIII, XIV, XV, or XVI:



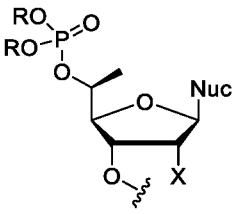
Formula IX



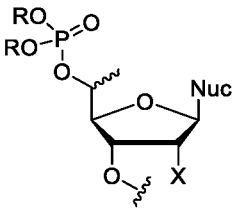
Formula X



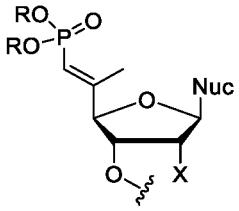
Formula XI



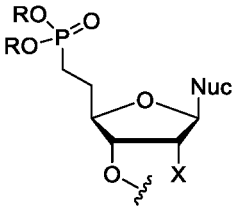
Formula XII



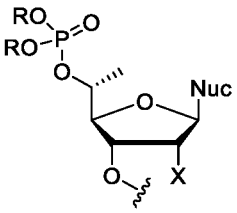
Formula XIII



Formula XIV



Formula XV



Formula XVI

wherein Nuc represents a nucleobase selected from the group consisting of adenine, uracil, guanine, thymine, and cytosine, and R represents an optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, phenyl, benzyl, hydroxy, or hydrogen.

In some embodiments, the nucleobase is an adenine, uracil, guanine, thymine, or cytosine.

In some embodiments, the 5' phosphorus stabilizing moiety is (E)-vinylphosphonate represented by Formula XI.

In some embodiments, the siRNA molecule also has a hydrophobic moiety at the 5' or the 3' end of the siRNA molecule.

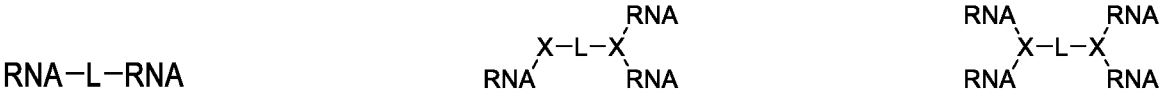
In some embodiments, the hydrophobic moiety is selected from a group consisting of cholesterol, vitamin D, or tocopherol.

In some embodiments, the length of the sense strand is between 12 and 30 nucleotides (e.g., 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30 nucleotides).

In some embodiments, the siRNA molecule is a branched siRNA molecule.

In some embodiments, the branched siRNA molecule is di-branched, tri-branched, or tetra-branched.

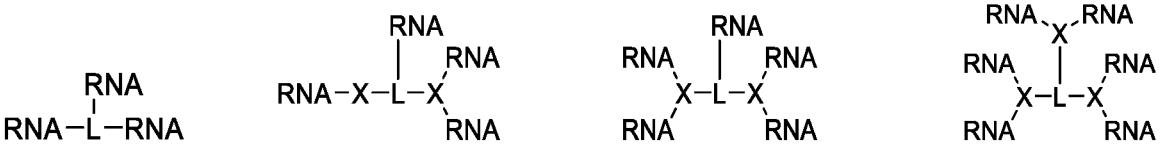
In some embodiments, the siRNA molecule is di-branched, optionally wherein the di-branched siRNA molecule is represented by any one of Formulas XVII, XVIII, or XIX:



Formula XVII; **Formula XVIII;** **Formula XIX**;

wherein each RNA is, independently, an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

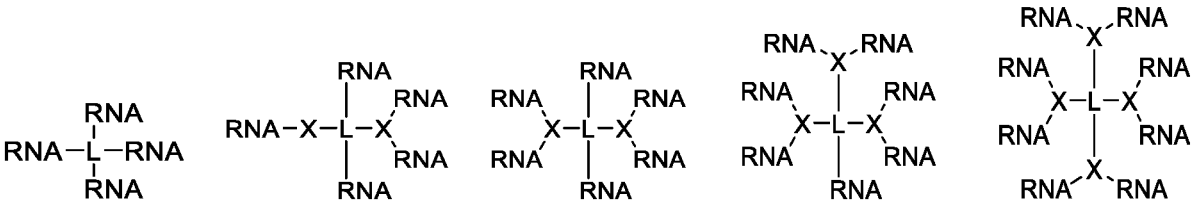
In some embodiments, the siRNA molecule is tri-branched, optionally wherein the tri-branched siRNA molecule is represented by any one of Formulas XX, XXI, XXII, or XXIII:



Formula XX; **Formula XXI;** **Formula XXII;** **Formula XXIII;**

wherein each RNA is, independently, an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

In some embodiments, the siRNA molecule is tetra-branched, optionally wherein the tetra-branched siRNA molecule is represented by any one of Formulas XXIV, XXV, XXVI, XXVII, or XXVIII:



Formula XXIV; **Formula XXV;** **Formula XXVI;** **Formula XXVII;** **Formula XXVIII;**

wherein each RNA is, independently, an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

In some embodiments, the linker is selected from a group consisting of one or more contiguous subunits of an ethylene glycol, alkyl, carbohydrate, block copolymer, peptide, RNA, and DNA.

In some embodiments, the one or more contiguous subunits is 2 to 20 contiguous subunits (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, or 20 contiguous subunits).

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript that is within the open reading frame of the *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript that is within the 3'-untranslated region.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 1 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-4.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 2 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 5-20. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 5-15.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 3 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 16-47. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 21-47.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 4 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 48-84.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 5 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 85-103. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 85-100.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 6 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 101-120. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 104-120.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 7 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 121-133.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 8 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 134-139.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 9 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 140-162. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 140-154.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 10 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 155-187. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 163-182.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 11 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 183-200. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 188-192.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 12 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 193-205.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 13 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 206-

223. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 206-222.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 14 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 223-242. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 224-242.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 15 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 243-262. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 243-255.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 16 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 256-276. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 263-268

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 17 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 269-296. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 277-289.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 18 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 290-302. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 297-302.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 19 of an *MSH3* mRNA transcript. In

some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 303-304.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 20 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 303-324. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 305-318.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 21 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 319-339. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 325-336.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 22 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 337-344. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 340-344.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 23 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 345-358.

In some embodiments of any of the siRNA molecules described herein, the antisense strand has complementarity sufficient to hybridize to a region within exon 24 of an *MSH3* mRNA transcript. In some embodiments, the antisense strand has complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 359-408.

In a further aspect, the disclosure provides a pharmaceutical composition containing an siRNA molecule of any of the preceding aspects or embodiments of the disclosure, and a pharmaceutically acceptable excipient, carrier, or diluent.

In a further aspect, the disclosure provides a method of delivering an siRNA molecule to a subject diagnosed as having a microsatellite repeat expansion disorder by administering a therapeutically effective amount of the siRNA molecule or a pharmaceutical composition of any of the

preceding aspects or embodiments of the disclosure to the subject. In some embodiments, the microsatellite repeat expansion disease is Huntington's Disease. In some embodiments, the microsatellite repeat expansion disease is a spinocerebellar ataxia. In some embodiments, the microsatellite repeat expansion disease is a Fragile X syndrome. In some embodiments, the microsatellite repeat expansion disease is a myotonic dystrophy.

In a further aspect, the disclosure provides a method of treating a microsatellite repeat expansion disorder in a subject in need thereof by administering a therapeutically effective amount of an siRNA molecule or a pharmaceutical composition of any of the preceding aspects or embodiments of the disclosure to the subject. In some embodiments, the microsatellite repeat expansion disease is Huntington's disease.

In another aspect, the disclosure provides a method of reducing MSH3 expression in a subject in need thereof by administering a therapeutically effective amount of an siRNA or pharmaceutical composition of any of the preceding aspects or embodiments of the disclosure.

In some embodiments, the siRNA molecule or the pharmaceutical composition is administered to the subject by way of intracerebroventricular, intrastriatal, intraparenchymal or intrathecal injection. In some embodiments, the siRNA molecule or the pharmaceutical composition is administered to the subject by way of intravenous, intramuscular, or subcutaneous injection.

In some embodiments, the subject is a human.

In another aspect, the disclosure provides a kit containing an siRNA molecule or pharmaceutical composition of any of the preceding aspects or embodiments of the disclosure, and a package insert that instructs a user of the kit to perform the method of any of the preceding aspects or embodiments of the disclosure.

Brief Description of the Figures

FIG. 1 is a graph showing reduction in MSH3 protein in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. Protein was quantified in the motor cortex, 28 days following di-siRNA treatment at 1 nmol or 5 nmol dose levels.

FIG. 2 is a graph showing reduction in MSH3 protein in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. Protein was quantified in the striatum, 28 days following di-siRNA treatment at 1 nmol or 5 nmol dose levels.

FIG. 3 is a graph showing reduction in MSH3 protein in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. Protein was quantified in the hippocampus, 28 days following di-siRNA treatment at 1 nmol or 5 nmol dose levels.

FIG. 4 is a graph showing reduction in *MSH3* mRNA in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. mRNA was quantified in the motor cortex, 28 days following di-siRNA treatment at 1 nmol or 5 nmol dose levels.

FIG. 5 is a graph showing reduction in *MSH3* mRNA in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. mRNA was quantified in the striatum, 28 days following di-siRNA treatment at 1 nmol or 5 nmol dose levels.

FIG. 6 is a graph showing reduction in *MSH3* mRNA in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. mRNA was quantified in the hippocampus, 28 days following di-siRNA treatment at 1 nmol or 5 nmol dose levels.

FIG. 7 is a graph showing reduction in MSH3 protein in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. Protein was quantified in the motor cortex, striatum, and hippocampus, 28 days following di-siRNA treatment at a 5 nmol dose level.

FIG. 8 is a graph showing reduction in *MSH3* mRNA in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. mRNA was quantified in the motor cortex, striatum, and hippocampus, 28 days following di-siRNA treatment at a 5 nmol dose level.

FIG. 9 is a graph showing reduction in MSH3 protein in FVB mice that were administered siRNA molecules of the disclosure. The siRNA identifiers are shown in Table 6, below. Protein was quantified in the motor cortex, striatum, and hippocampus, 28 days following di-siRNA treatment at 0.5 nmol, 1 nmol, 2.5 nmol, 5 nmol, and 20 nmol dose levels.

Definitions

Unless otherwise defined herein, scientific, and technical terms used herein have the meanings that are commonly understood by those of ordinary skill in the art. In the event of any latent ambiguity, definitions provided herein take precedent over any dictionary or extrinsic definition. Unless otherwise required by context, singular terms shall include pluralities and plural terms shall include the singular. The use of "or" means "and/or" unless stated otherwise. The use of the term "including," as well as other forms, such as "includes" and "included," is not limiting.

As used herein, the term "nucleic acids" refers to RNA or DNA molecules consisting of a chain of ribonucleotides or deoxyribonucleotides, respectively.

As used herein, the term "therapeutic nucleic acid" refers to a nucleic acid molecule (e.g., ribonucleic acid) that has partial or complete complementarity to, and interacts with, a disease-associated target mRNA and mediates silencing of expression of the mRNA.

As used herein, the term "carrier nucleic acid" refers to a nucleic acid molecule (e.g., ribonucleic acid) that has sequence complementarity with, and hybridizes with, a therapeutic nucleic acid. As used herein, the term "3' end" refers to the end of the nucleic acid that contains an unmodified hydroxyl group at the 3' carbon of the ribose ring.

As used herein, the term "nucleoside" refers to a molecule made up of a heterocyclic base and its sugar.

As used herein, the term "nucleotide" refers to a nucleoside having a phosphate group, or a variant thereof, on its 3' or 5' sugar hydroxyl group. Examples of phosphate group variants include, but are not limited to, saturated alkyl phosphonates, unsaturated alkenyl phosphonates, phosphorothioates, and phosphoramidites.

In the context of this disclosure, the term "oligonucleotide" refers to an oligomer or polymer of ribonucleic acid (RNA) or deoxyribonucleic acid (DNA) or mimetics thereof. This term includes

oligonucleotides composed of naturally-occurring nucleobases, sugars and covalent internucleoside (backbone) linkages as well as oligonucleotides having non-naturally-occurring (e.g., modified) portions that function similarly. Such modified or substituted oligonucleotides are often preferred over native forms because of desirable properties such as, for example, enhanced cellular uptake, enhanced affinity for nucleic acid target and increased stability in the presence of nucleases.

As used herein, the term "siRNA" refers to small interfering RNA duplexes that induce the RNA interference (RNAi) pathway. siRNA molecules may vary in length (generally, between 10 and 30 base pairs) and may contain varying degrees of complementarity to their target mRNA. The term "siRNA" includes duplexes of two separate strands, as well as single strands that optionally form hairpin structures including a duplex region.

As used herein, the term "antisense strand" refers to the strand of the siRNA duplex that contains some degree of complementarity to the target gene.

As used herein, the term "sense strand" refers to the strand of the siRNA duplex that contains complementarity to the antisense strand.

The term “interfering RNA molecule” refers to an RNA molecule, such as a small interfering RNA (siRNA), microRNA (miRNA), short hairpin RNA (shRNA), or an antisense oligonucleotide (ASO) that suppresses the endogenous function of a target RNA transcript.

As used herein, the terms "express" and “expression” refer to one or more of the following events: (1) production of an RNA template from a DNA sequence (e.g., by transcription); (2) processing of an RNA transcript (e.g., by splicing, editing, 5' cap formation, and/or 3' end processing); and (3) translation of an RNA into a polypeptide or protein. In the context of a gene that encodes a protein product, the terms “gene expression” and the like are used interchangeably with the terms “protein expression” and the like. A change in expression of a gene or protein of interest in a patient can be detected, for example, by: a change in the quantity or concentration of mRNA encoding corresponding protein (as assessed, e.g., using RNA detection procedures described herein or known in the art, such as quantitative polymerase chain reaction (qPCR) and RNA-seq techniques), a change in the quantity or concentration of the corresponding protein (as assessed, e.g., using protein detection methods described herein or known in the art, such as enzyme-linked immunosorbent assays (ELISA), among others), and/or a change in the activity of the corresponding protein (e.g., in the case of an enzyme, as assessed using an enzymatic activity assay described herein or known in the art) in a sample obtained from the patient. As used herein, a cell is considered to “express” a gene or protein of interest if one or more, or all, of the above events can be detected in the cell or in a medium in which the cell resides. For example, a gene or protein of interest is considered to be “expressed” by a cell or population of cells if one can detect (i) production of a corresponding RNA transcript, such as an mRNA template, by the cell or population of cells (e.g., using RNA detection procedures described herein); (ii) processing of the RNA transcript (e.g., splicing, editing, 5’ cap formation, and/or 3’ end processing, such as using RNA detection procedures described herein); (iii) translation of the RNA template into a protein product (e.g., using protein detection procedures described herein); and/or (iv) post-translational modification of the protein product (e.g., using protein detection procedures described herein).

As used herein, the terms “target,” “targeting,” and “targeted,” in the context of the design of an siRNA, refers to generating an antisense strand so as to anneal the antisense strand to a region within the mRNA transcript of interest in a manner that results in a reduction in translation of the mRNA into the protein product.

As used herein, the terms "chemically modified nucleotide," "nucleotide analog," "altered nucleotide," and "modified nucleotide" refer to a non-standard nucleotide, including non-naturally occurring ribonucleotides or deoxyribonucleotides. Exemplary nucleotide analogs are modified at any position so as to alter certain chemical properties of the nucleotide yet retain the ability of the nucleotide analog to perform its intended function.

As used herein, the term "metabolically stabilized" refers to RNA molecules that contain ribonucleotides that have been chemically modified in order to decrease the rate of metabolism of an RNA molecule that is administered to a subject. Exemplary modifications include 2’-hydroxy to 2’-O-methoxy or 2’-fluoro, and phosphodiester to phosphorothioate.

As used herein, the term "phosphorothioate" refers to a phosphate group of a nucleotide that is modified by substituting one or more of the oxygens of the phosphate group with sulfur.

As used herein, the terms “internucleoside linkage,” “internucleoside bond,” and the like refer to the bonds between nucleosides in a nucleic acid molecule.

As used herein, the term "antagomirs" refers to nucleic acids that can function as inhibitors of miRNA activity.

As used herein, the term "gapmers" refers to chimeric antisense nucleic acids that contain a central block of deoxynucleotide monomers sufficiently long to induce RNase H cleavage. The deoxynucleotide block is flanked by ribonucleotide monomers or ribonucleotide monomers containing modifications.

As used herein, the term "mixmers" refers to nucleic acids that contain a mix of locked nucleic acids (LNAs) and DNA.

As used herein, the term "guide RNAs" refers to nucleic acids that have sequence complementarity to a specific sequence in the genome immediately or 1 base pair upstream of the protospacer adjacent motif (PAM) sequence as used in CRISPR/Cas9 gene editing systems. Alternatively, “guide RNAs” may refer to nucleic acids that have sequence complementarity (e.g., are antisense) to a specific messenger RNA (mRNA) sequence. In this context, a guide RNA may also have sequence complementarity to a “passenger RNA” sequence of equal or shorter length, which is identical or substantially identical to the sequence of mRNA to which the guide RNA hybridizes.

As used herein, the term “branched siRNA” refers to a compound containing two or more double-stranded siRNA molecules covalently bound to one another. Branched siRNA molecules may be “di-branched,” also referred to herein as “di-siRNA,” wherein the siRNA molecule includes 2 siRNA molecules covalently bound to one another, e.g., by way of a linker. Branched siRNA molecules may be “tri-branched,” also referred to herein as “tri-siRNA,” wherein the siRNA molecule includes 3 siRNA molecules covalently bound to one another, e.g., by way of a linker. Branched siRNA molecules may be “tetra-branched,” also referred to herein as “tetra-siRNA,” wherein the siRNA molecule includes 4 siRNA molecules covalently bound to one another, e.g., by way of a linker.

As used herein, the term “branch point moiety” refers to a chemical moiety of a branched siRNA structure of the disclosure that may be covalently linked to a 5’ end or a 3’ end of an antisense strand or a sense strand of an siRNA molecule and which may support the attachment of additional single- or double-stranded siRNA molecules. Non-limiting examples of branch point moieties suitable for use in conjunction with the disclosed methods and compositions include, e.g., phosphoroamidite, tosylated solketal, 1,3-diaminopropanol, pentaerythritol, and any one of the branch point moieties described in US 10,478,503.

The term “phosphate moiety” as used herein, refers to a terminal phosphate group that includes phosphates as well as modified phosphates. The phosphate moiety may be located at either terminus but is preferred at the 5′-terminal nucleoside. In one aspect, the terminal phosphate is unmodified having the formula —O—P(═O)(OH)OH. In another aspect, the terminal phosphate is modified such that one or more of the O and OH groups are replaced with H, O, S, N(R’) or alkyl where R’ is H, an amino protecting group or unsubstituted or substituted alkyl. In some embodiments, the 5′ and or 3′ terminal group may include from 1 to 3 phosphate moieties that are each, independently, unmodified (di- or tri-phosphates) or modified.

As used herein, the term “5′ phosphorus stabilizing moiety” refers to a terminal phosphate group that includes phosphates as well as modified phosphates (e.g., phosphorothioates, phosphodiesters, phosphonates). The phosphate moiety may be located at either terminus but is preferred at the 5′-terminal nucleoside. In one aspect, the terminal phosphate is unmodified having the formula –O–P(=O)(OH)OH. In another aspect, the terminal phosphate is modified such that one or more of the O and OH groups are replaced with H, O, S, N(R’), or alkyl where R’ is H, an amino protecting group, or unsubstituted or substituted alkyl. In some embodiments, the 5′ and or 3′ terminal group may include from 1 to 3 phosphate moieties that are each, independently, unmodified (di- or tri-phosphates) or modified.

The phosphate group of the nucleotide may also be modified, e.g., by substituting one or more of the oxygens of the phosphate group with sulfur (e.g., phosphorothioates), or by making other substitutions which allow the nucleotide to perform its intended function such as described in, for example, Eckstein, *Antisense Nucleic Acid Drug Dev*. 10:117-21, 2000; Rusckowski et al., *Antisense Nucleic Acid Drug Dev.* 10:333-45, 2000; Stein, *Antisense Nucleic Acid Drug Dev.* 11:317-25, 2001; Vorobjev et al., *Antisense Nucleic Acid Drug Dev.* 11:77-85, 2001; and US 5,684,143. Certain of the above-referenced modifications (e.g., phosphate group modifications) preferably decrease the rate of hydrolysis of, for example, polynucleotides including said analogs in vivo or in vitro.

As used herein, the term “complementary” refers to two nucleotides that form canonical Watson-Crick base pairs. For the avoidance of doubt, Watson-Crick base pairs in the context of the present disclosure include adenine-thymine, adenine-uracil, and cytosine-guanine base pairs. A proper Watson-Crick base pair is referred to in this context as a “match,” while each unpaired nucleotide, and each incorrectly paired nucleotide, is referred to as a “mismatch.” Alignment for purposes of determining percent nucleic acid sequence complementarity can be achieved in various ways that are within the capabilities of one of skill in the art, for example, using publicly available computer software such as BLAST, BLAST-2, or Megalign software.

"Percent (%) sequence complementarity" with respect to a reference polynucleotide sequence is defined as the percentage of nucleic acids in a candidate sequence that are complementary to the nucleic acids in the reference polynucleotide sequence, after aligning the sequences and introducing gaps, if necessary, to achieve the maximum percent sequence complementarity. A given nucleotide is considered to be "complementary" to a reference nucleotide as described herein if the two nucleotides form canonical Watson-Crick base pairs. For the avoidance of doubt, Watson-Crick base pairs in the context of the present disclosure include adenine-thymine, adenine-uracil, and cytosine-guanine base pairs. A proper Watson-Crick base pair is referred to in this context as a "match," while each unpaired nucleotide, and each incorrectly paired nucleotide, is referred to as a "mismatch." Alignment for purposes of determining percent nucleic acid sequence complementarity can be achieved in various ways that are within the capabilities of one of skill in the art, for example, using publicly available computer software such as BLAST, BLAST-2, or Megalign software. Those skilled in the art can determine appropriate parameters for aligning sequences, including any algorithms needed to achieve maximal complementarity over the full length of the sequences being compared. As an illustration, the percent sequence complementarity of a given nucleic acid sequence, A, to a given nucleic acid sequence, B, (which can alternatively be phrased as a given nucleic acid sequence, A that has a certain percent complementarity to a given nucleic acid sequence, B) is calculated as follows:

100 multiplied by (the fraction X/Y)

where X is the number of complementary base pairs in an alignment (e.g., as executed by computer software, such as BLAST) in that program's alignment of A and B, and where Y is the total number of nucleic acids in B. It will be appreciated that where the length of nucleic acid sequence A is not equal to the length of nucleic acid sequence B, the percent sequence complementarity of A to B will not equal the percent sequence complementarity of B to A. As used herein, a query nucleic acid sequence is considered to be "completely complementary" to a reference nucleic acid sequence if the query nucleic acid sequence has 100% sequence complementarity to the reference nucleic acid sequence.

"Percent (%) sequence identity" with respect to a reference polynucleotide or polypeptide sequence is defined as the percentage of nucleic acids or amino acids in a candidate sequence that are identical to the nucleic acids or amino acids in the reference polynucleotide or polypeptide sequence, after aligning the sequences and introducing gaps, if necessary, to achieve the maximum percent sequence identity. Alignment for purposes of determining percent nucleic acid or amino acid sequence identity can be achieved in various ways that are within the capabilities of one of skill in the art, for example, using publicly available computer software such as BLAST, BLAST-2, or Megalign software. Those skilled in the art can determine appropriate parameters for aligning sequences, including any algorithms needed to achieve maximal alignment over the full length of the sequences being compared. For example, percent sequence identity values may be generated using the sequence comparison computer program BLAST. As an illustration, the percent sequence identity of a given nucleic acid or amino acid sequence, A, to, with, or against a given nucleic acid or amino acid

sequence, B, (which can alternatively be phrased as a given nucleic acid or amino acid sequence, A that has a certain percent sequence identity to, with, or against a given nucleic acid or amino acid sequence, B) is calculated as follows:

100 multiplied by (the fraction X/Y)

where X is the number of nucleotides or amino acids scored as identical matches by a sequence alignment program (e.g., BLAST) in that program's alignment of A and B, and where Y is the total number of nucleic acids in B. It will be appreciated that where the length of nucleic acid or amino acid sequence A is not equal to the length of nucleic acid or amino acid sequence B, the percent sequence identity of A to B will not equal the percent sequence identity of B to A.

The term "complementarity sufficient to hybridize," as used herein, refers to a nucleic acid sequence or a portion thereof that need not be fully complementary (e.g., 100% complementary) to a target region or a nucleic acid sequence or a portion thereof that has one or more nucleotide mismatches relative to the target region but that is still capable of hybridizing to the target region under specified conditions. For example, the nucleic acid may be, e.g., 95% complementary, 90%, complementary, 85% complementary, 80% complementary, 75% complementary, 70% complementary, 65% complementary, 60% complementary, 55% complementary, 50% complementary, or less, but still form sufficient base pairs with the target so as to hybridize across its length. A sequence that has complementarity sufficient to hybridize to a target region or nucleic acid region within a specific exon includes a target region contained entirely within the specific exon or a target region that includes one or more nucleotides within the specific exon but also crosses an exon-exon junction.

"Hybridization" or "annealing" of nucleic acids is achieved when one or more nucleoside residues within a polynucleotide base pairs with one or more complementary nucleosides to form a stable duplex. The base pairing is typically driven by hydrogen bonding events. Hybridization includes Watson-Crick base pairs formed from natural and/or modified nucleobases. The hybridization can also include non-Watson-Crick base pairs, such as wobble base pairs (guanosine-uracil, hypoxanthine-uracil, hypoxanthine-adenine, and hypoxanthine-cytosine) and Hoogsteen base pairs. Nucleic acids need not be 100% complementary to undergo hybridization. For example, one nucleic acid may be, e.g., 95% complementary, 90%, complementary, 85% complementary, 80% complementary, 75% complementary, 70% complementary, 65% complementary, 60% complementary, 55% complementary, 50% complementary, or less, relative to another nucleic acid, but the two nucleic acids may still form sufficient base pairs with one another so as to hybridize.

The "stable duplex" formed upon the annealing/hybridization of one nucleic acid to another is a duplex structure that is not denatured by a stringent wash. Exemplary stringent wash conditions are known in the art and include temperatures of about 5° C less than the melting temperature of an individual strand of the duplex and low concentrations of monovalent salts, such as monovalent salt concentrations (e.g., NaCl concentrations) of less than 0.2 M (e.g., 0.2 M, 0.19 M, 0.18 M, 0.17 M,

0.16 M, 0.15 M, 0.14 M, 0.13 M, 0.12 M, 0.11 M, 0.1 M, 0.09 M, 0.08 M, 0.07 M, 0.06 M, 0.05 M, 0.04 M, 0.03 M, 0.02 M, 0.01 M, or less).

The term “gene silencing” refers to the suppression of gene expression, e.g., endogenous gene expression of *MSH3*, which may be mediated through processes that affect transcription and/or through processes that affect post-transcriptional mechanisms. In some embodiments, gene silencing occurs when an RNAi molecule initiates the inhibition or degradation of the mRNA transcribed from a gene of interest in a sequence-specific manner by way of RNA interference, thereby preventing translation of the gene's product.

The phrase “overactive disease driver gene,” as used herein, refers to a gene having increased activity and/or expression that contributes to or causes a disease state in a subject (e.g., a human). The disease state may be caused or exacerbated by the overactive disease driver gene directly or by way of an intermediate gene(s).

As used herein, the term "ethylene glycol chain" refers to a carbon chain with the formula $((CH_2OH)_2)$.

As used herein, “alkyl” refers to a saturated hydrocarbon group. Alkyl groups may be acyclic or cyclic and contain only C and H when unsubstituted. When an alkyl residue having a specific number of carbons is named, all geometric isomers having that number of carbons are intended to be encompassed and described; thus, for example, “butyl” is meant to include *n*-butyl, *sec*-butyl, and *iso*-butyl. Examples of alkyl include ethyl, propyl, butyl, pentyl, hexyl, heptyl, octyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, and the like. In some embodiments, alkyl may be substituted. Suitable substituents that may be introduced into an alkyl group include, for example, hydroxy, alkoxy, amino, alkylamino, and halo, among others.

As used herein, “alkenyl” refers to an acyclic or cyclic unsaturated hydrocarbon group having at least one site of olefinic unsaturation (i.e., having at least one moiety of the formula C=C). Alkenyl groups contain only C and H when unsubstituted. When an alkenyl residue having a specific number of carbons is named, all geometric isomers having that number of carbons are intended to be encompassed and described; thus, for example, “butenyl” is meant to include *n*-butenyl, *sec*-butenyl, and *iso*-butenyl. Examples of alkenyl include $–CH=CH_2$, $–CH_2-CH=CH_2$, and $–CH_2-CH=CH-CH=CH_2$. In some embodiments, alkenyl may be substituted. Suitable substituents that may be introduced into an alkenyl group include, for example, hydroxy, alkoxy, amino, alkylamino, and halo, among others.

As used herein, “alkynyl” refers to an acyclic or cyclic unsaturated hydrocarbon group having at least one site of acetylenic unsaturation (i.e., having at least one moiety of the formula C≡C). Alkynyl groups contain only C and H when unsubstituted. When an alkynyl residue having a specific number of carbons is named, all geometric isomers having that number of carbons are intended to be encompassed and described; thus, for example, “pentynyl” is meant to include *n*-pentynyl, *sec*-pentynyl, *iso*-pentynyl, and *tert*-pentynyl. Examples of alkynyl include –C≡CH and $–C≡C-CH_3$. In some embodiments, alkynyl may be substituted. Suitable substituents that may be introduced into an alkynyl group include, for example, hydroxy, alkoxy, amino, alkylamino, and halo, among others.

As used herein the term "phenyl" denotes a monocyclic arene in which one hydrogen atom from a carbon atom of the ring has been removed. A phenyl group may be unsubstituted or

substituted with one or more suitable substituents, wherein the substituent replaces an H of the phenyl group.

As used herein, the term “benzyl” refers to monovalent radical obtained when a hydrogen atom attached to the methyl group of toluene is removed. A benzyl group generally has the formula of phenyl-CH_2-. A benzyl group may be unsubstituted or substituted with one or more suitable substituents. For example, the substituent may replace an H of the phenyl component and/or an H of the methylene (-CH_2-) component.

As used herein, the term "amide" refers to an alkyl, alkenyl, alkynyl, or aromatic group that is attached to an amino-carbonyl functional group.

As used herein, the term "triazole" refers to heterocyclic compounds with the formula ($C_2H_3N_3$), having a five-membered ring of two carbons and three nitrogens, the positions of which can change resulting in multiple isomers.

As used herein, the term "terminal group" refers to the group at which a carbon chain or nucleic acid ends.

As used herein, an "amino acid" refers to a molecule containing amine and carboxyl functional groups and a side chain specific to the amino acid.

In some embodiments the amino acid is chosen from the group of proteinogenic amino acids. In some embodiments, the amino acid is an L-amino acid or a D-amino acid. In some embodiments, the amino acid is a synthetic amino acid (e.g., a beta-amino acid).

As used herein, the term "lipophilic amino acid" refers to an amino acid including a hydrophobic moiety (e.g., an alkyl chain or an aromatic ring).

As used herein, the term "target of delivery" refers to the organ or part of the body to which it is desired to deliver the branched oligonucleotide compositions.

As used herein, the term “between X and Y” is inclusive of the values of X and Y. For example, “between X and Y” refers to the range of values between the value of X and the value of Y, as well as the value of X and the value of Y.

As used herein, the terms “subject’ and “patient” are used interchangeably and refer to an organism, such as a mammal (e.g., a human), that experiences a neurodegenerative disease or disorder (e.g., a microsatellite repeat expansion disorder, such as Huntington’s Disease, myotonic dystrophies, or spinocerebellar ataxias) and/or contains a gain-of-function *MSH3* variant allele.

As used herein, the term “*MSH3*” refers to the gene encoding MutS Homolog 3, including any native *MSH3* gene from any source. MSH3 is a DNA mismatch repair protein that forms a heterodimer with another mismatch repair protein, MutS Homolog 2 (MSH2) to form the complex MutSβ. MutSβ corrects insertion/deletion loops and base-base mispairs in microsatellites during DNA synthesis or DNA strand reannealing after transcription. The term encompasses “full-length,” unprocessed *MSH3* as well as any form of *MSH3* that results from processing in the cell. The term also encompasses naturally occurring variants of *MSH3*, e.g., splice variants or allelic variants. The nucleic acid sequence of an exemplary *MSH3* gene is shown in European Nucleotide Archive (ENA) Accession No. J04810.1. The amino acid sequence of an exemplary protein encoded by an *MSH3* gene is shown in UNIPROT™ Accession No. P20585.

As used herein, the terms “microsatellite repeat expansion disorder,” “microsatellite repeat expansion disease,” “nucleotide repeat expansion disorder,” and “nucleotide repeat expansion disease” are used interchangeably to refer to any disease or disorder caused by the instability and expansion of specific microsatellites. “Microsatellites” are coding or non-coding DNA sequences that contain tandem repeats of base pairs. Exemplary microsatellite repeat expansion disorders include, but are not limited to, Fragile X syndrome, Fragile XE syndrome, Fragile X-associated tremor/ataxia syndrome, Fragile X-primary ovarian insufficiency, progressive myoclonic epilepsy type 1/Unverricht-Lundborg disease, spinocerebellar ataxia (SCA) 12, neuronal intranuclear inclusion disease, glutaminase deficiency, Huntington’s disease, SCA1, SCA2, SCA3, SCA6, SCA7, SCA17, dentatorubral-pallidoluysian atrophy, spinal-bulbar muscular atrophy, oculopharyngeal muscular dystrophy, Huntington disease-like 2, amyotrophic lateral sclerosis, myotonic dystrophy type 2 (DM2), Friedreich ataxia, Fuchs endothelial corneal dystrophy, SCA10, SCA31, SCA36, SCA37, cerebellar ataxia, neuropathy, and vestibular areflexia syndrome (CANVAS), benign adult familial myoclonic epilepsy, SCA8, and myotonic dystrophy type 1 (DM1). Other microsatellite repeat expansion disorders are discussed in Rodriguez et al., *Neurobiology of Disease,* 130:104515, 2019, the disclosure of which is incorporated herein by reference.

As used herein, the terms “treat,” “treated,” and “treating” mean both therapeutic treatment and prophylactic or preventative measures wherein the object is to prevent, ameliorate, or slow down (lessen) an undesired physiological condition, disorder, or disease, or obtain beneficial or desired clinical results. Beneficial or desired clinical results include, but are not limited to, a reduction in a patient’s reliance on pharmacological treatments; alleviation of symptoms; diminishment of the extent of a condition, disorder, or disease; stabilized (i.e., not worsening) state of condition, disorder, or disease; delay in onset or slowing of condition, disorder, or disease progression; amelioration of the condition, disorder, or disease state or remission (whether partial or total), whether detectable or undetectable; an amelioration of at least one measurable physical, cognitive, or behavioral (e.g., depressive behavior or apathy) parameter, not necessarily discernible by the patient; or enhancement or improvement of condition, disorder, or disease. Treatment includes eliciting a clinically significant response without excessive levels of side effects. Treatment also includes prolonging survival as compared to expected survival if not receiving treatment.

As used herein, the terms “benefit” and “response” are used interchangeably in the context of a subject undergoing therapy for the treatment of, for example, a microsatellite repeat expansion disease, such as Huntington’s Disease or myotonic dystrophy type 1. For example, clinical benefits in the context of a subject having Huntington’s disease administered an siRNA molecule or siRNA composition of the disclosure include, without limitation, a reduction in involuntary movements, memory lapses, mood swings, or symptoms of anxiety and depression, and/or; a reduction in wild type *MSH3* transcripts, mutant *MSH3* transcripts, variant *MSH3* transcripts, splice isoforms of *MSH3* transcripts, and/or overexpressed *MSH3* transcripts; and/or an arrest or reduction of the length of the microsatellite repeat in the *HTT* gene.

Detailed Description

The present disclosure provides compositions of small interfering RNA (siRNA) molecules with sequence homology to a MutS Homolog 3 (*MSH3*) gene and methods for administering said siRNA molecules to a subject. Furthermore, the siRNA molecules described herein may be composed as branched siRNA structures, such as di-branched, tri-branched, and tetra-branched siRNA structures and may further include specific patterns of chemical modifications (e.g., 2' ribose modifications or internucleoside linkage modifications) to improve resistance against nuclease enzymes, toxicity profile, and physicochemical properties (e.g., thermostability). Small interfering RNA molecules are short, double-stranded RNA molecules. They are capable of mediating RNA interference (RNAi) by degrading mRNA with a complementary nucleotide sequence, thus preventing the translation of the target gene.

The siRNA molecules of the disclosure may exhibit, for example, robust gene-specific suppression of *MSH3*, relative to other genes in the MutS family (e.g., *MSH2, MSH4, MSH5,* and *MSH6*) and other human genes.

The siRNA molecules of the disclosure may feature an antisense strand having a nucleic acid sequence that is complementary to a region of a *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408. The degree of complementarity of the antisense strand to the region of the *MSH3* mRNA transcript may be sufficient for the antisense strand to anneal over the full length of the region of the *MSH3* mRNA transcript. For example, the antisense strand may have a nucleic acid sequence that is at least 60% complementary (e.g., 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%,74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% complementary) to the region of the *MSH3* mRNA transcript. In some embodiments, the region of the *MSH3* RNA transcript has the sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362. In some embodiments, the region of the *MSH3* RNA transcript has the sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194, 196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362.

In some embodiments, the siRNA molecules of the disclosure feature an antisense strand having the nucleic acid sequence of any one of SEQ ID NOs: 817-1224, or a nucleic acid sequence that is at least 60% identical thereto. For example, the siRNA molecules of the disclosure may feature an antisense strand having a nucleic acid sequence that is at least 60% identical (e.g., 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%,74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224. In some embodiments, the nucleic acid sequence is any one of SEQ ID NOs: 821, 833-836, 849, 858, 860, 918, 919, 921, 922, 924, 925, 929, 942, 945, 946, 974, 977, 982, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1033, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134. In some embodiments, the nucleic acid sequence is any one of SEQ ID NOs: 821, 833-836, 858, 860,

942, 945, 946, 974, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134.

In some embodiments, the siRNA molecules of the disclosure feature a sense strand having the nucleic acid sequence of any one of SEQ ID NOs: 409-816, or a nucleic acid sequence that is at least 60% identical thereto. For example, the siRNA molecules of the disclosure may feature a sense strand having a nucleic acid sequence that is at least 60% identical (e.g., 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%,74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical) to the nucleic acid sequence of any one of SEQ ID NOs: 409-816. In some embodiments, the nucleic acid sequence is any one of SEQ ID NOs: 413, 425-428, 441, 450, 452, 510, 511, 513, 514, 516, 517, 521, 534, 537, 538, 566, 569, 574, 585, 591, 601, 602, 604, 605, 610, 617, 625, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770. In some embodiments, the nucleic acid sequence is any one of SEQ ID NOs: 413, 425-428, 450, 452, 534, 537, 538, 566, 585, 591, 601, 602, 604, 605, 610, 617, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770.

Exemplary siRNA molecules of the disclosure are those shown in Table 1A, below. Table 1A summarizes the antisense strands, sense strands, and corresponding regions of an *MSH3* mRNA transcript that are targeted by each antisense strand.

Table 1A. Nucleotide sequences for gene-specific *MSH3*-targeting siRNA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
1	GCGAGGCAAGCGGTTTTGAGCCGATTCTTCCAGTCTACGGGAAGC	409	GCCGAUUCUUCCAGUA	817	UACUGGAAGAAUCGGCUCAAA
2	CCGATTCTTCCAGTCTACGGGAAGCCTGAAATCCACCTCCTCCTC	410	GGAAGCCUGAAAUCCA	818	UGGAUUUCAGGCUUCCCGUAG
3	CTTCCAGTCTACGGGAAGCCTGAAATCCACCTCCTCCTCCACAGG	411	CUGAAAUCCACCUCCA	819	UGGAGGUGGAUUUCAGGCUUC
4	AGTCTACGGGAAGCCTGAAATCCACCTCCTCCTCCACAGGTGCAG	412	AUCCACCUCCUCCUCA	820	UGAGGAGGAGGUGGAUUUCAG
5	GCCGCACATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATT	413	AUUGACAGAAGAAAGA	821	UCUUUCUUCUGUCAAUUUCUG
6	CCGCACATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATTG	414	UUGACAGAAGAAAGAA	822	UUCUUUCUUCUGUCAAUUUCU
7	CGCACATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATTGG	415	UGACAGAAGAAAGAAA	823	UUUCUUUCUUCUGUCAAUUUC
8	GCACATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATTGGA	416	GACAGAAGAAAGAAGA	824	UCUUCUUUCUUCUGUCAAUUU

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
9	CACATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATTGGAA	417	ACAGAAGAAAGAAGAA	825	UUCUUCUUUCUUCUGUCAAUU
10	ATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATTGGAAAAT	418	GAAGAAAGAAGAGACA	826	UGUCUCUUCUUUCUUCUGUCA
11	AAGAAAGAAGAGACCATTGGAAAATGATGGGCCTGTTAAAAAGAA	419	GAAAAUGAUGGGCCUA	827	UAGGCCCAUCAUUUUCCAAUG
12	AGAAAGAAGAGACCATTGGAAAATGATGGGCCTGTTAAAAAGAAA	420	AAAAUGAUGGGCCUGA	828	UCAGGCCCAUCAUUUUCCAAU
13	GAAAGAAGAGACCATTGGAAAATGATGGGCCTGTTAAAAAGAAAG	421	AAAUGAUGGGCCUGUA	829	UACAGGCCCAUCAUUUUCCAA
14	AAAGAAGAGACCATTGGAAAATGATGGGCCTGTTAAAAAGAAAGT	422	AAUGAUGGGCCUGUUA	830	UAACAGGCCCAUCAUUUUCCA
15	AAGAAGAGACCATTGGAAAATGATGGGCCTGTTAAAAAGAAAGTA	423	AUGAUGGGCCUGUUAA	831	UUAACAGGCCCAUCAUUUUCC
16	GATCTGGGAATGTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGG	424	ACUCUGAGCCAAAGAA	832	UUCUUUGGCUCAGAGUUGCCA
17	GAATGTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGA	425	GCCAAAGAAAUGUCUA	833	UAGACAUUUCUUUGGCUCAGA
18	AATGTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAA	426	CCAAAGAAAUGUCUGA	834	UCAGACAUUUCUUUGGCUCAG
19	ATGTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAAT	427	CAAAGAAAUGUCUGAA	835	UUCAGACAUUUCUUUGGCUCA
20	TGTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAATG	428	AAAGAAAUGUCUGAGA	836	UCUCAGACAUUUCUUUGGCUC
21	GTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAATGT	429	AAGAAAUGUCUGAGGA	837	UCCUCAGACAUUUCUUUGGCU
22	TCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAATGTT	430	AGAAAUGUCUGAGGAA	838	UUCCUCAGACAUUUCUUUGGC
23	CTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAATGTTT	431	GAAAUGUCUGAGGACA	839	UGUCCUCAGACAUUUCUUUGG
24	TTGAAAGAATTCTGCTGCGATTCTGCCCTTCCTCAAAGTAGAGTC	432	AUUCUGCCCUUCCUCA	840	UGAGGAAGGGCAGAAUCGCAG
25	TCCAGACAGAATCTCTGCAGGAGAGATTTGCAGTTCTGCCAAAAT	433	GGAGAGAUUUGCAGUA	841	UACUGCAAAUCUCUCCUGCAG

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
26	CCAGACAGAATCTCTGCAGGAGAGATTTGCAGTTCTGCCAAAATG	434	GAGAGAUUUGCAGUUA	842	UAACUGCAAAUCUCUCCUGCA
27	CAGACAGAATCTCTGCAGGAGAGATTTGCAGTTCTGCCAAAATGT	435	AGAGAUUUGCAGUUCA	843	UGAACUGCAAAUCUCUCCUGC
28	AGACAGAATCTCTGCAGGAGAGATTTGCAGTTCTGCCAAAATGTA	436	GAGAUUUGCAGUUCUA	844	UAGAACUGCAAAUCUCUCCUG
29	GACAGAATCTCTGCAGGAGAGATTTGCAGTTCTGCCAAAATGTAC	437	AGAUUUGCAGUUCUGA	845	UCAGAACUGCAAAUCUCUCCU
30	GCAGGAGAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGA	438	CUGCCAAAAUGUACUA	846	UAGUACAUUUUGGCAGAACUG
31	CAGGAGAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGAT	439	UGCCAAAAUGUACUGA	847	UCAGUACAUUUUGGCAGAACU
32	AGGAGAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGATA	440	GCCAAAAUGUACUGAA	848	UUCAGUACAUUUUGGCAGAAC
33	GGAGAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGATAT	441	CCAAAAUGUACUGAUA	849	UAUCAGUACAUUUUGGCAGAA
34	GAGAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGATATC	442	CAAAAUGUACUGAUUA	850	UAAUCAGUACAUUUUGGCAGA
35	AGAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGATATCA	443	AAAAUGUACUGAUUUA	851	UAAAUCAGUACAUUUUGGCAG
36	GAGATTTGCAGTTCTGCCAAAATGTACTGATTTTGATGATATCAG	444	AAAUGUACUGAUUUUA	852	UAAAAUCAGUACAUUUUGGCA
37	GATTTTGATGATATCAGTCTTCTACACGCAAAGAATGCAGTTTCT	445	UUCUACACGCAAAGAA	853	UUCUUUGCGUGUAGAAGACUG
38	ATTTTGATGATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTT	446	UCUACACGCAAAGAAA	854	UUUCUUUGCGUGUAGAAGACU
39	ATGATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAG	447	CGCAAAGAAUGCAGUA	855	UACUGCAUUCUUUGCGUGUAG
40	TGATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGA	448	GCAAAGAAUGCAGUUA	856	UAACUGCAUUCUUUGCGUGUA
41	GATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGAT	449	CAAAGAAUGCAGUUUA	857	UAAACUGCAUUCUUUGCGUGU
42	ATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGATT	450	AAAGAAUGCAGUUUCA	858	UGAAACUGCAUUCUUUGCGUG

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
43	TATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGATTC	451	AAGAAUGCAGUUUCUA	859	UAGAAACUGCAUUCUUUGCGU
44	ATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGATTCG	452	AGAAUGCAGUUUCUUA	860	UAAGAAACUGCAUUCUUUGCG
45	TCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGATTCGA	453	GAAUGCAGUUUCUUCA	861	UGAAGAAACUGCAUUCUUUGC
46	ATGCAGTTTCTTCTGAAGATTCGAAACGTCAAATTAATCAAAAGG	454	UUCGAAACGUCAAAUA	862	UAUUUGACGUUUCGAAUCUUC
47	TTTCTTCTGAAGATTCGAAACGTCAAATTAATCAAAAGGACACAA	455	ACGUCAAAUUAAUCAA	863	UUGAUUAAUUUGACGUUUCGA
48	AAGGACACAACACTTTTTGATCTCAGTCAGTTTGGATCATCAAAT	456	AUCUCAGUCAGUUUGA	864	UCAAACUGACUGAGAUCAAAA
49	CAACACTTTTTGATCTCAGTCAGTTTGGATCATCAAATACAAGTC	457	UCAGUUUGGAUCAUCA	865	UGAUGAUCCAAACUGACUGAG
50	ACACTTTTTGATCTCAGTCAGTTTGGATCATCAAATACAAGTCAT	458	AGUUUGGAUCAUCAAA	866	UUUGAUGAUCCAAACUGACUG
51	TTTTTGATCTCAGTCAGTTTGGATCATCAAATACAAGTCATGAAA	459	UGGAUCAUCAAAUACA	867	UGUAUUUGAUGAUCCAAACUG
52	TGATCTCAGTCAGTTTGGATCATCAAATACAAGTCATGAAAATTT	460	UCAUCAAAUACAAGUA	868	UACUUGUAUUUGAUGAUCCAA
53	ATACAAGTCATGAAAATTTACAGAAAACTGCTTCCAAATCAGCTA	461	ACAGAAAACUGCUUCA	869	UGAAGCAGUUUUCUGUAAAUU
54	AGTCATGAAAATTTACAGAAAACTGCTTCCAAATCAGCTAACAAA	462	AAACUGCUUCCAAAUA	870	UAUUUGGAAGCAGUUUUCUGU
55	GTCATGAAAATTTACAGAAAACTGCTTCCAAATCAGCTAACAAAC	463	AACUGCUUCCAAAUCA	871	UGAUUUGGAAGCAGUUUUCUG
56	TCATGAAAATTTACAGAAAACTGCTTCCAAATCAGCTAACAAACG	464	ACUGCUUCCAAAUCAA	872	UUGAUUUGGAAGCAGUUUUCU
57	CATGAAAATTTACAGAAAACTGCTTCCAAATCAGCTAACAAACGG	465	CUGCUUCCAAAUCAGA	873	UCUGAUUUGGAAGCAGUUUUC
58	ATGAAAATTTACAGAAAACTGCTTCCAAATCAGCTAACAAACGGT	466	UGCUUCCAAAUCAGCA	874	UGCUGAUUUGGAAGCAGUUUU
59	TTTACAGAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAG	467	AAAUCAGCUAACAAAA	875	UUUUGUUAGCUGAUUUGGAAG

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
60	TTACAGAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAGC	468	AAUCAGCUAACAAACA	876	UGUUUGUUAGCUGAUUUGGAA
61	TACAGAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAGCA	469	AUCAGCUAACAAACGA	877	UCGUUUGUUAGCUGAUUUGGA
62	ACAGAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAGCAT	470	UCAGCUAACAAACGGA	878	UCCGUUUGUUAGCUGAUUUGG
63	CAGAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAGCATC	471	CAGCUAACAAACGGUA	879	UACCGUUUGUUAGCUGAUUUG
64	AGAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAGCATCT	472	AGCUAACAAACGGUCA	880	UGACCGUUUGUUAGCUGAUUU
65	GAAAACTGCTTCCAAATCAGCTAACAAACGGTCCAAAAGCATCTA	473	GCUAACAAACGGUCCA	881	UGGACCGUUUGUUAGCUGAUU
66	TGCTTCCAAATCAGCTAACAAACGGTCCAAAAGCATCTATACGCC	474	AAACGGUCCAAAAGCA	882	UGCUUUUGGACCGUUUGUUAG
67	CTTCCAAATCAGCTAACAAACGGTCCAAAAGCATCTATACGCCGC	475	ACGGUCCAAAAGCAUA	883	UAUGCUUUUGGACCGUUUGUU
68	AATCAGCTAACAAACGGTCCAAAAGCATCTATACGCCGCTAGAAT	476	CAAAAGCAUCUAUACA	884	UGUAUAGAUGCUUUUGGACCG
69	ATCAGCTAACAAACGGTCCAAAAGCATCTATACGCCGCTAGAATT	477	AAAAGCAUCUAUACGA	885	UCGUAUAGAUGCUUUUGGACC
70	TCAGCTAACAAACGGTCCAAAAGCATCTATACGCCGCTAGAATTA	478	AAAGCAUCUAUACGCA	886	UGCGUAUAGAUGCUUUUGGAC
71	CAGCTAACAAACGGTCCAAAAGCATCTATACGCCGCTAGAATTAC	479	AAGCAUCUAUACGCCA	887	UGGCGUAUAGAUGCUUUUGGA
72	ATAGAAATGAAGCAGCAGCACAAAGATGCAGTTTTGTGTGTGGAA	480	ACAAAGAUGCAGUUUA	888	UAAACUGCAUCUUUGUGCUGC
73	TAGAAATGAAGCAGCAGCACAAAGATGCAGTTTTGTGTGTGGAAT	481	CAAAGAUGCAGUUUUA	889	UAAAACUGCAUCUUUGUGCUG
74	CAAAGATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAGATT	482	GUGGAAUGUGGAUAUA	890	UAUAUCCACAUUCCACACAC A
75	AAAGATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAGATTC	483	UGGAAUGUGGAUAUAA	891	UUAUAUCCACAUUCCACACAC
76	AAGATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAGATTCT	484	GGAAUGUGGAUAUAAA	892	UUUAUAUCCACAUUCCACAC A

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
77	AGATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAGATTCTT	485	GAAUGUGGAUAUAAGA	893	UCUUAUAUCCACAUUCCACAC
78	GATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAGATTCTTT	486	AAUGUGGAUAUAAGUA	894	UACUUAUAUCCACAUUCCACA
79	ATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAGATTCTTTG	487	AUGUGGAUAUAAGUAA	895	UUACUUAUAUCCACAUUCCAC
80	AGTTTTGTGTGTGGAATGTGGATATAAGTATAGATTCTTTGGGGA	488	GGAUAUAAGUAUAGAA	896	UUCUAUACUUAUAUCCACAUU
81	GTTTTGTGTGTGGAATGTGGATATAAGTATAGATTCTTTGGGGAA	489	GAUAUAAGUAUAGAUA	897	UAUCUAUACUUAUAUCCACAU
82	TTTTGTGTGTGGAATGTGGATATAAGTATAGATTCTTTGGGGAAG	490	AUAUAAGUAUAGAUUA	898	UAAUCUAUACUUAUAUCCACA
83	TTTGTGTGTGGAATGTGGATATAAGTATAGATTCTTTGGGGAAGA	491	UAUAAGUAUAGAUUCA	899	UGAAUCUAUACUUAUAUCCAC
84	TTGTGTGTGGAATGTGGATATAAGTATAGATTCTTTGGGGAAGAT	492	AUAAGUAUAGAUUCUA	900	UAGAAUCUAUACUUAUAUCCA
85	CCGAGAGCTCAATATTTATTGCCATTTAGATCACAACTTTATGAC	493	UGCCAUUUAGAUCACA	901	UGUGAUCUAAAUGGCAAUAAA
86	AGAGCTCAATATTTATTGCCATTTAGATCACAACTTTATGACAGC	494	CAUUUAGAUCACAACA	902	UGUUGUGAUCUAAAUGGCAAU
87	GAGCTCAATATTTATTGCCATTTAGATCACAACTTTATGACAGCA	495	AUUUAGAUCACAACUA	903	UAGUUGUGAUCUAAAUGGCAA
88	AGCTCAATATTTATTGCCATTTAGATCACAACTTTATGACAGCAA	496	UUUAGAUCACAACUUA	904	UAAGUUGUGAUCUAAAUGGCA
89	GCTCAATATTTATTGCCATTTAGATCACAACTTTATGACAGCAAG	497	UUAGAUCACAACUUUA	905	UAAAGUUGUGAUCUAAAUGGC
90	CTCAATATTTATTGCCATTTAGATCACAACTTTATGACAGCAAGT	498	UAGAUCACAACUUUAA	906	UUAAAGUUGUGAUCUAAAUGG
91	TCAATATTTATTGCCATTTAGATCACAACTTTATGACAGCAAGTA	499	AGAUCACAACUUUAUA	907	UAUAAAGUUGUGAUCUAAAUG
92	CAATATTTATTGCCATTTAGATCACAACTTTATGACAGCAAGTAT	500	GAUCACAACUUUAUGA	908	UCAUAAAGUUGUGAUCUAAAU
93	ATTTATTGCCATTTAGATCACAACTTTATGACAGCAAGTATACCT	501	ACAACUUUAUGACAGA	909	UCUGUCAUAAAGUUGUGAUCU

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
94	TTTATTGCCATTTAGATCACA ACTTTATGACAGCAAGTATA CCTA	502	CAACUUUA UGACAGCA	910	UGCUGUCAUA AAGUUGUGAU C
95	TTATTGCCATTTAGATCACAA CTTTATGACAGCAAGTATAC CTAC	503	AACUUUAU GACAGCAA	911	UUGCUGUCAU AAAGUUGUGA U
96	TATTGCCATTTAGATCACAA CTTTATGACAGCAAGTATAC CTACT	504	ACUUUAUG ACAGCAAA	912	UUUGCUGUCA UAAAGUUGUG A
97	ATTGCCATTTAGATCACAAC TTTATGACAGCAAGTATACC TACTC	505	CUUUAUGA CAGCAAGA	913	UCUUGCUGUC AUAAAGUUGU G
98	TTGCCATTTAGATCACAACTT TATGACAGCAAGTATACCTA CTCA	506	UUUAUGAC AGCAAGUA	914	UACUUGCUGU CAUAAAGUUG U
99	TGCCATTTAGATCACAACTTT ATGACAGCAAGTATACCTAC TCAC	507	UUAUGACA GCAAGUAA	915	UUACUUGCUG UCAUAAAGUU G
100	TTTATGACAGCAAGTATACC TACTCACAGACTGTTTGTTC ATGTA	508	CUACUCAC AGACUGUA	916	UACAGUCUGU GAGUAGGUAU A
101	GTGGCAAAAGGATATAAGGT GGGAGTTGTGAAGCAAACT GAAACT	509	UGGGAGU UGUGAAGC A	917	UGCUUCACAA CUCCCACCUU A
102	TGGCAAAAGGATATAAGGTG GGAGTTGTGAAGCAAACTGA AACTG	510	GGGAGUU GUGAAGCA A	918	UUGCUUCACA ACUCCCACCU U
103	GGCAAAAGGATATAAGGTG GGAGTTGTGAAGCAAACTGA AACTGC	511	GGAGUUG UGAAGCAA A	919	UUUGCUUCAC AACUCCCACC U
104	CAAAAGGATATAAGGTGGGA GTTGTGAAGCAAACTGAAAC TGCAG	512	AGUUGUGA AGCAAACA	920	UGUUUGCUUC ACAACUCCCA C
105	AAAAGGATATAAGGTGGGAG TTGTGAAGCAAACTGAAACT GCAGC	513	GUUGUGAA GCAAACUA	921	UAGUUUGCUU CACAACUCCC A
106	AAAGGATATAAGGTGGGAGT TGTGAAGCAAACTGAAACTG CAGCA	514	UUGUGAAG CAAACUGA	922	UCAGUUUGCU UCACAACUCC C
107	AAGGATATAAGGTGGGAGTT GTGAAGCAAACTGAAACTGC AGCAT	515	UGUGAAGC AAACUGAA	923	UUCAGUUUGC UUCACAACUC C
108	AGGATATAAGGTGGGAGTTG TGAAGCAAACTGAAACTGCA GCATT	516	GUGAAGCA AACUGAAA	924	UUUCAGUUUG CUUCACAACU C
109	GGATATAAGGTGGGAGTTGT GAAGCAAACTGAAACTGCAG CATTA	517	UGAAGCAA ACUGAAAA	925	UUUUCAGUUU GCUUCACAAC U
110	GATATAAGGTGGGAGTTGTG AAGCAAACTGAAACTGCAGC ATTAA	518	GAAGCAAA CUGAAACA	926	UGUUUCAGUU UGCUUCACAA C

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
111	ATATAAGGTGGGAGTTGTGAAGCAAACTGAAACTGCAGCATTAAA	519	AAGCAAACUGAAACUA	927	UAGUUUCAGUUUGCUUCACAA
112	TATAAGGTGGGAGTTGTGAAGCAAACTGAAACTGCAGCATTAAAG	520	AGCAAACUGAAACUGA	928	UCAGUUUCAGUUUGCUUCACA
113	ATAAGGTGGGAGTTGTGAAGCAAACTGAAACTGCAGCATTAAAGG	521	GCAAACUGAAACUGCA	929	UGCAGUUUCAGUUUGCUUCAC
114	TAAGGTGGGAGTTGTGAAGCAAACTGAAACTGCAGCATTAAAGGC	522	CAAACUGAAACUGCAA	930	UUGCAGUUUCAGUUUGCUUCA
115	AAGGTGGGAGTTGTGAAGCAAACTGAAACTGCAGCATTAAAGGCC	523	AAACUGAAACUGCAGA	931	UCUGCAGUUUCAGUUUGCUUC
116	AGGTGGGAGTTGTGAAGCAAACTGAAACTGCAGCATTAAAGGCCA	524	AACUGAAACUGCAGCA	932	UGCUGCAGUUUCAGUUUGCUU
117	CAGCATTAAAGGCCATTGGAGACAACAGAAGTTCACTCTTTTCCC	525	AGACAACAGAAGUUCA	933	UGAACUUCUGUUGUCUCCAAU
118	GAAGTTCACTCTTTTCCCGGAAATTGACTGCCCTTTATACAAAAT	526	GAAAUUGACUGCCCUA	934	UAGGGCAGUCAAUUUCCGGGA
119	TTCACTCTTTTCCCGGAAATTGACTGCCCTTTATACAAAATCTAC	527	UUGACUGCCCUUUAUA	935	UAUAAAGGGCAGUCAAUUUCC
120	TCTTTTCCCGGAAATTGACTGCCCTTTATACAAAATCTACACTTA	528	UGCCCUUUAUACAAAA	936	UUUUGUAUAAAGGGCAGUCAA
121	GTGAATCCCCTAATCAAGCTGGATGATGCTGTAAATGTTGATGAG	529	UGGAUGAUGCUGUAAA	937	UUUACAGCAUCAUCCAGCUUG
122	CTGGATGATGCTGTAAATGTTGATGAGATAATGACTGATACTTCT	530	UUGAUGAGAUAAUGAA	938	UUCAUUAUCUCAUCAACAUUU
123	TGCTGTAAATGTTGATGAGATAATGACTGATACTTCTACCAGCTA	531	AUAAUGACUGAUACUA	939	UAGUAUCAGUCAUUAUCUCAU
124	TTCTACCAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGT	532	UGCAUCUCUGAAAAUA	940	UAUUUUCAGAGAUGCACAGAA
125	TCTACCAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTT	533	GCAUCUCUGAAAAUAA	941	UUAUUUUCAGAGAUGCACAGA
126	CTACCAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTA	534	CAUCUCUGAAAAUAAA	942	UUUAUUUUCAGAGAUGCACAG
127	TACCAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAG	535	AUCUCUGAAAAUAAGA	943	UCUUAUUUUCAGAGAUGCACA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
128	ACCAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAGG	536	UCUCUGAAAAUAAGGA	944	UCCUUAUUUUCAGAGAUGCAC
129	CCAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAGGG	537	CUCUGAAAAUAAGGAA	945	UUCCUUAUUUUCAGAGAUGCA
130	CAGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAGGGA	538	UCUGAAAAUAAGGAAA	946	UUUCCUUAUUUUCAGAGAUGC
131	AGCTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAGGGAC	539	CUGAAAAUAAGGAAAA	947	UUUUCCUUAUUUUCAGAGAUG
132	CTATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAGGGACAA	540	GAAAAUAAGGAAAAUA	948	UAUUUUCCUUAUUUUCAGAGA
133	TATCTTCTGTGCATCTCTGAAAATAAGGAAAATGTTAGGGACAAA	541	AAAAUAAGGAAAAUGA	949	UCAUUUUCCUUAUUUUCAGAG
134	CTCGTTCAGAGCTAGAAACCCGGATGTCAAGCCTGCAGCCAGTAG	542	CCGGAUGUCAAGCCUA	950	UAGGCUUGACAUCCGGGUUUC
135	TCAGAGCTAGAAACCCGGATGTCAAGCCTGCAGCCAGTAGAGCTG	543	UGUCAAGCCUGCAGCA	951	UGCUGCAGGCUUGACAUCCGG
136	CTAGAAACCCGGATGTCAAGCCTGCAGCCAGTAGAGCTGCTGCTT	544	GCCUGCAGCCAGUAGA	952	UCUACUGGCUGCAGGCUUGAC
137	GTAGAGCTGCTGCTTCCTTCGGCCTTGTCCGAGCAAACAGAGGCG	545	CGGCCUUGUCCGAGCA	953	UGCUCGGACAAGGCCGAAGGA
138	TTCGGCCTTGTCCGAGCAAACAGAGGCGCTCATCCACAGAGCCAC	546	ACAGAGGCGCUCAUCA	954	UGAUGAGCGCCUCUGUUUGCU
139	AGCAAACAGAGGCGCTCATCCACAGAGCCACATCTGTTAGTGTGC	547	CCACAGAGCCACAUCA	955	UGAUGUGGCUCUGUGGAUGAG
140	GATGGATAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGT	548	GAAUACAGCCAUGCUA	956	UAGCAUGGCUGUAUUCAAAAU
141	ATGGATAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGTT	549	AAUACAGCCAUGCUUA	957	UAAGCAUGGCUGUAUUCAAAA
142	TGGATAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGTTA	550	AUACAGCCAUGCUUUA	958	UAAAGCAUGGCUGUAUUCAAA
143	GGATAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGTTAC	551	UACAGCCAUGCUUUCA	959	UGAAAGCAUGGCUGUAUUCAA
144	GATAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGTTACA	552	ACAGCCAUGCUUUCCA	960	UGGAAAGCAUGGCUGUAUUCA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
145	ATAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGTTACAG	553	CAGCCAUGCUUUCCAA	961	UUGGAAAGCAUGGCUGUAUUC
146	TAACATTTATTTTGAATACAGCCATGCTTTCCAGGCAGTTACAGA	554	AGCCAUGCUUUCCAGA	962	UCUGGAAAGCAUGGCUGUAUU
147	TGAATACAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAA	555	CAGGCAGUUACAGAGA	963	UCUCUGUAACUGCCUGGAAAG
148	GAATACAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAA	556	AGGCAGUUACAGAGUA	964	UACUCUGUAACUGCCUGGAAA
149	AATACAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAAG	557	GGCAGUUACAGAGUUA	965	UAACUCUGUAACUGCCUGGAA
150	ATACAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAGA	558	GCAGUUACAGAGUUUA	966	UAAACUCUGUAACUGCCUGGA
151	TACAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAAGAT	559	CAGUUACAGAGUUUUA	967	UAAAACUCUGUAACUGCCUGG
152	ACAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAAGATA	560	AGUUACAGAGUUUUAA	968	UUAAAACUCUGUAACUGCCUG
153	CAGCCATGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAAGATAC	561	GUUACAGAGUUUUAUA	969	UAUAAAACUCUGUAACUGCCU
154	GGCAGTTACAGAGTTTTATGCAAAAGATACAGTTGACATCAAAGG	562	GCAAAAGAUACAGUUA	970	UAACUGUAUCUUUUGCAUAAA
155	AGTTTTATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTA	563	AGUUGACAUCAAAGGA	971	UCCUUUGAUGUCAACUGUAUC
156	GTTTTATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTAT	564	GUUGACAUCAAAGGUA	972	UACCUUUGAUGUCAACUGUAU
157	TTTTATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTATT	565	UUGACAUCAAAGGUUA	973	UAACCUUUGAUGUCAACUGUA
158	TTTATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTATTT	566	UGACAUCAAAGGUUCA	974	UGAACCUUUGAUGUCAACUGU
159	TTATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTATTTC	567	GACAUCAAAGGUUCUA	975	UAGAACCUUUGAUGUCAACUG
160	TATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTATTTCT	568	ACAUCAAAGGUUCUCA	976	UGAGAACCUUUGAUGUCAACU
161	ATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTATTTCTG	569	CAUCAAAGGUUCUCAA	977	UUGAGAACCUUUGAUGUCAAC

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
162	TGCAAAAGATACAGTTGACA TCAAAGGTTCTCAAATTATTT CTGG	570	AUCAAAGG UUCUCAAA	978	UUUGAGAACC UUUGAUGUCA A
163	AAAGGTTCTCAAATTATTTCT GGCATTGTTAACTTAGAGAA GCCT	571	CUGGCAUU GUUAACUA	979	UAGUUAACAA UGCCAGAAAU A
164	AAGGTTCTCAAATTATTTCTG GCATTGTTAACTTAGAGAAG CCTG	572	UGGCAUU GUUAACUU A	980	UAAGUUAACA AUGCCAGAAA U
165	AGGTTCTCAAATTATTTCTG GCATTGTTAACTTAGAGAAG CCTGT	573	GGCAUUG UUAACUUA A	981	UUAAGUUAAC AAUGCCAGAA A
166	GGTTCTCAAATTATTTCTGG CATTGTTAACTTAGAGAAGC CTGTG	574	GCAUUGUU AACUUAGA	982	UCUAAGUUAA CAAUGCCAGA A
167	GTTCTCAAATTATTTCTGGCA TTGTTAACTTAGAGAAGCCT GTGA	575	CAUUGUUA ACUUAGAA	983	UUCUAAGUUA ACAAUGCCAG A
168	TTCTCAAATTATTTCTGGCAT TGTTAACTTAGAGAAGCCTG TGAT	576	AUUGUUAA CUUAGAGA	984	UCUCUAAGUU AACAAUGCCA G
169	TCTCAAATTATTTCTGGCATT GTTAACTTAGAGAAGCCTGT GATT	577	UUGUUAAC UUAGAGAA	985	UUCUCUAAGU UAACAAUGCC A
170	ATTTCTGGCATTGTTAACTTA GAGAAGCCTGTGATTTGCTC TTTG	578	UAGAGAAG CCUGUGAA	986	UUCACAGGCU UCUCUAAGUU A
171	TTAGAGAAGCCTGTGATTTG CTCTTTGGCTGCCATCATAA AATAC	579	GCUCUUU GGCUGCC AA	987	UUGGCAGCCA AAGAGCAAAU C
172	GAAGCCTGTGATTTGCTCTT TGGCTGCCATCATAAAATAC CTCAA	580	UUGGCUG CCAUCAUA A	988	UUAUGAUGGC AGCCAAAGAG C
173	GTGATTTGCTCTTTGGCTGC CATCATAAAATACCTCAAAG AATTC	581	CCAUCAUA AAAUACCA	989	UGGUAUUUUA UGAUGGCAGC C
174	GATTTGCTCTTTGGCTGCCA TCATAAAATACCTCAAAGAAT TCAA	582	AUCAUAAA AUACCUCA	990	UGAGGUAUUU UAUGAUGGCA G
175	ATTTGCTCTTTGGCTGCCAT CATAAAATACCTCAAAGAATT CAAC	583	UCAUAAAA UACCUCAA	991	UUGAGGUAUU UUAUGAUGGC A
176	TTTGCTCTTTGGCTGCCATC ATAAAATACCTCAAAGAATTC AACT	584	CAUAAAAU ACCUCAAA	992	UUUGAGGUAU UUUAUGAUGG C
177	TTGCTCTTTGGCTGCCATCA TAAAATACCTCAAAGAATTCA ACTT	585	AUAAAAUA CCUCAAAA	993	UUUUGAGGUA UUUUAUGAUG G
178	TGCTCTTTGGCTGCCATCAT AAAATACCTCAAAGAATTCA ACTTG	586	UAAAAUAC CUCAAAGA	994	UCUUUGAGGU AUUUUAUGAU G

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
179	GCTCTTTGGCTGCCATCATAAAATACCTCAAAGAATTCAACTTGG	587	AAAAUACCUCAAAGAA	995	UUCUUUGAGGUAUUUUAUGAU
180	CTCTTTGGCTGCCATCATAAAATACCTCAAAGAATTCAACTTGGA	588	AAAUACCUCAAAGAAA	996	UUUCUUUGAGGUAUUUUAUGA
181	CATCATAAAATACCTCAAAGAATTCAACTTGGAAAAGATGCTCTC	589	GAAUUCAACUUGGAAA	997	UUUCCAAGUUGAAUUCUUUGA
182	ATACCTCAAAGAATTCAACTTGGAAAAGATGCTCTCCAAACCTGA	590	UUGGAAAAGAUGCUCA	998	UGAGCAUCUUUUCCAAGUUGA
183	AGATGCTCTCCAAACCTGAGAATTTTAAACAGCTATCAAGTAAAA	591	GAAUUUUAAACAGCUA	999	UAGCUGUUUAAAAUUCUCAGG
184	GATGCTCTCCAAACCTGAGAATTTTAAACAGCTATCAAGTAAAAT	592	AAUUUUAAACAGCUAA	1000	UUAGCUGUUUAAAAUUCUCAG
185	ATGCTCTCCAAACCTGAGAATTTTAAACAGCTATCAAGTAAAATG	593	AUUUUAAACAGCUAUA	1001	UAUAGCUGUUUAAAAUUCUCA
186	TGCTCTCCAAACCTGAGAATTTTAAACAGCTATCAAGTAAAATGG	594	UUUUAAACAGCUAUCA	1002	UGAUAGCUGUUUAAAAUUCUC
187	GCTCTCCAAACCTGAGAATTTTAAACAGCTATCAAGTAAAATGGA	595	UUUAAACAGCUAUCAA	1003	UUGAUAGCUGUUUAAAAUUCU
188	TTTATGACAATTAATGGAACAACATTAAGGAATCTGGAAATCCTA	596	CAACAUUAAGGAAUCA	1004	UGAUUCCUUAAUGUUGUUCCA
189	TTATGACAATTAATGGAACAACATTAAGGAATCTGGAAATCCTAC	597	AACAUUAAGGAAUCUA	1005	UAGAUUCCUUAAUGUUGUUCC
190	TATGACAATTAATGGAACAACATTAAGGAATCTGGAAATCCTACA	598	ACAUUAAGGAAUCUGA	1006	UCAGAUUCCUUAAUGUUGUUC
191	ATGACAATTAATGGAACAACATTAAGGAATCTGGAAATCCTACAG	599	CAUUAAGGAAUCUGGA	1007	UCCAGAUUCCUUAAUGUUGUU
192	TGACAATTAATGGAACAACATTAAGGAATCTGGAAATCCTACAGA	600	AUUAAGGAAUCUGGAA	1008	UUCCAGAUUCCUUAAUGUUGU
193	AGGAATCTGGAAATCCTACAGAATCAGACTGATATGAAAACCAAA	601	AGAAUCAGACUGAUAA	1009	UUAUCAGUCUGAUUCUGUAGG
194	GGAATCTGGAAATCCTACAGAATCAGACTGATATGAAAACCAAAG	602	GAAUCAGACUGAUAUA	1010	UAUAUCAGUCUGAUUCUGUAG
195	GAATCTGGAAATCCTACAGAATCAGACTGATATGAAAACCAAAGG	603	AAUCAGACUGAUAUGA	1011	UCAUAUCAGUCUGAUUCUGUA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
196	AATCTGGAAATCCTACAGAA TCAGACTGATATGAAAACCA AAGGA	604	AUCAGACU GAUAUGAA	1012	UUCAUAUCAG UCUGAUUCUG U
197	ATCTGGAAATCCTACAGAAT CAGACTGATATGAAAACCAA AGGAA	605	UCAGACUG AUAUGAAA	1013	UUUCAUAUCA GUCUGAUUCU G
198	TCTGGAAATCCTACAGAATC AGACTGATATGAAAACCAAA GGAAG	606	CAGACUGA UAUGAAAA	1014	UUUUCAUAUC AGUCUGAUUC U
199	TGGAAATCCTACAGAATCAG ACTGATATGAAAACCAAAGG AAGTT	607	GACUGAUA UGAAAACA	1015	UGUUUUCAUA UCAGUCUGAU U
200	AAATCCTACAGAATCAGACT GATATGAAAACCAAAGGAAG TTTGC	608	UGAUAUGA AAACCAAA	1016	UUUGGUUUUC AUAUCAGUCU G
201	CAAAGGAAGTTTGCTGTGGG TTTTAGACCACACTAAAACTT CATT	609	GUUUUAGA CCACACUA	1017	UAGUGUGGUC UAAAACCCAC A
202	AAAGGAAGTTTGCTGTGGGT TTTAGACCACACTAAAACTT CATTT	610	UUUUAGAC CACACUAA	1018	UUAGUGUGGU CUAAAACCCA C
203	AAGGAAGTTTGCTGTGGGTT TTAGACCACACTAAAACTTC ATTTG	611	UUUAGACC ACACUAAA	1019	UUUAGUGUGG UCUAAAACCC A
204	ACCACACTAAAACTTCATTT GGGAGACGGAAGTTAAAGA AGTGGG	612	UGGGAGA CGGAAGUU A	1020	UAACUUCCGU CUCCCAAAUG A
205	TTAAAGAAGTGGGTGACCCA GCCACTCCTTAAATTAAGGG AAATA	613	AGCCACUC CUUAAAUA	1021	UAUUUAAGGA GUGGCUGGGU C
206	GAAATAAATGCCCGGCTTGA TGCTGTATCGGAAGTTCTCC ATTCA	614	AUGCUGUA UCGGAAGA	1022	UCUUCCGAUA CAGCAUCAAG C
207	AAATAAATGCCCGGCTTGAT GCTGTATCGGAAGTTCTCCA TTCAG	615	UGCUGUAU CGGAAGUA	1023	UACUUCCGAU ACAGCAUCAA G
208	AATAAATGCCCGGCTTGATG CTGTATCGGAAGTTCTCCAT TCAGA	616	GCUGUAUC GGAAGUUA	1024	UAACUUCCGA UACAGCAUCA A
209	ATAAATGCCCGGCTTGATGC TGTATCGGAAGTTCTCCATT CAGAA	617	CUGUAUCG GAAGUUCA	1025	UGAACUUCCG AUACAGCAUC A
210	TAAATGCCCGGCTTGATGCT GTATCGGAAGTTCTCCATTC AGAAT	618	UGUAUCG GAAGUUCU A	1026	UAGAACUUCC GAUACAGCAU C
211	AAATGCCCGGCTTGATGCTG TATCGGAAGTTCTCCATTCA GAATC	619	GUAUCGGA AGUUCUCA	1027	UGAGAACUUC CGAUACAGCA U
212	AATGCCCGGCTTGATGCTGT ATCGGAAGTTCTCCATTCAG AATCT	620	UAUCGGAA GUUCUCCA	1028	UGGAGAACUU CCGAUACAGC A

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
213	CATTCAGAATCTAGTGTGTTTGGTCAGATAGAAAATCATCTACGT	621	UUGGUCAGAUAGAAAA	1029	UUUUCUAUCUGACCAAACACA
214	TTCAGAATCTAGTGTGTTTGGTCAGATAGAAAATCATCTACGTAA	622	GGUCAGAUAGAAAAUA	1030	UAUUUUCUAUCUGACCAAACA
215	TCAGAATCTAGTGTGTTTGGTCAGATAGAAAATCATCTACGTAAA	623	GUCAGAUAGAAAAUCA	1031	UGAUUUUCUAUCUGACCAAAC
216	CAGAATCTAGTGTGTTTGGTCAGATAGAAAATCATCTACGTAAAT	624	UCAGAUAGAAAAUCAA	1032	UUGAUUUUCUAUCUGACCAAA
217	AGAATCTAGTGTGTTTGGTCAGATAGAAAATCATCTACGTAAATT	625	CAGAUAGAAAAUCAUA	1033	UAUGAUUUUCUAUCUGACCAA
218	GAATCTAGTGTGTTTGGTCAGATAGAAAATCATCTACGTAAATTG	626	AGAUAGAAAAUCAUCA	1034	UGAUGAUUUUCUAUCUGACCA
219	GAAAATCATCTACGTAAATTGCCCGACATAGAGAGGGGACTCTGT	627	UGCCCGACAUAGAGAA	1035	UUCUCUAUGUCGGGCAAUUUA
220	GACATAGAGAGGGGACTCTGTAGCATTTATCACAAAAAATGTTCT	628	GUAGCAUUUAUCACAA	1036	UUGUGAUAAAUGCUACAGAGU
221	ACATAGAGAGGGGACTCTGTAGCATTTATCACAAAAAATGTTCTA	629	UAGCAUUUAUCACAAA	1037	UUUGUGAUAAAUGCUACAGAG
222	CATAGAGAGGGGACTCTGTAGCATTTATCACAAAAAATGTTCTAC	630	AGCAUUUAUCACAAAA	1038	UUUUGUGAUAAAUGCUACAGA
223	ATTTATCACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTC	631	CUACCCAAGAGUUCUA	1039	UAGAACUCUUGGGUAGAACAU
224	TTATCACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAA	632	ACCCAAGAGUUCUUCA	1040	UGAAGAACUCUUGGGUAGAAC
225	TATCACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAAA	633	CCCAAGAGUUCUUCUA	1041	UAGAAGAACUCUUGGGUAGAA
226	ATCACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAAAA	634	CCAAGAGUUCUUCUUA	1042	UAAGAAGAACUCUUGGGUAGA
227	TCACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAAAAC	635	CAAGAGUUCUUCUUGA	1043	UCAAGAAGAACUCUUGGGUAG
228	CACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAAACT	636	AAGAGUUCUUCUUGAA	1044	UUCAAGAAGAACUCUUGGGUA
229	ACAAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAAAACTT	637	AGAGUUCUUCUUGAUA	1045	UAUCAAGAAGAACUCUUGGGU

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
230	TTCTACCCAAGAGTTCTTCTTGATTGTCAAAACTTTATATCACCT	638	UUGAUUGUCAAAACUA	1046	UAGUUUUGACAAUCAAGAAGA
231	TTGTCAAAACTTTATATCACCTAAAGTCAGAATTTCAAGCAATAA	639	CCUAAAGUCAGAAUUA	1047	UAAUUCUGACUUUAGGUGAUA
232	TGTCAAAACTTTATATCACCTAAAGTCAGAATTTCAAGCAATAAT	640	CUAAAGUCAGAAUUUA	1048	UAAAUUCUGACUUUAGGUGAU
233	GTCAAAACTTTATATCACCTAAAGTCAGAATTTCAAGCAATAATA	641	UAAAGUCAGAAUUUCA	1049	UGAAAUUCUGACUUUAGGUGA
234	TCAAAACTTTATATCACCTAAAGTCAGAATTTCAAGCAATAATAC	642	AAAGUCAGAAUUUCAA	1050	UUGAAAUUCUGACUUUAGGUG
235	CAAAACTTTATATCACCTAAAGTCAGAATTTCAAGCAATAATACC	643	AAGUCAGAAUUUCAAA	1051	UUUGAAAUUCUGACUUUAGGU
236	CCTAAAGTCAGAATTTCAAGCAATAATACCTGCTGTTAATTCCCA	644	GCAAUAAUACCUGCUA	1052	UAGCAGGUAUUAUUGCUUGAA
237	GAATTTCAAGCAATAATACCTGCTGTTAATTCCCACATTCAGTCA	645	CUGCUGUUAAUUCCCA	1053	UGGGAAUUAACAGCAGGUAUU
238	ATTTCAAGCAATAATACCTGCTGTTAATTCCCACATTCAGTCAGA	646	GCUGUUAAUUCCCACA	1054	UGUGGGAAUUAACAGCAGGUA
239	TTAATTCCCACATTCAGTCAGACTTGCTCCGGACCGTTATTTTAG	647	AGACUUGCUCCGGACA	1055	UGUCCGGAGCAAGUCUGACUG
240	ATTTTAGAAATTCCTGAACTCCTCAGTCCAGTGGAGCATTACTTA	648	UCCUCAGUCCAGUGGA	1056	UCCACUGGACUGAGGAGUUCA
241	TTCCTGAACTCCTCAGTCCAGTGGAGCATTACTTAAAGATACTCA	649	AGUGGAGCAUUACUUA	1057	UAAGUAAUGCUCCACUGGACU
242	CCTGAACTCCTCAGTCCAGTGGAGCATTACTTAAAGATACTCAAT	650	UGGAGCAUUACUUAAA	1058	UUUAAGUAAUGCUCCACUGGA
243	AAAACTGAATTATTTAAAGACCTTTCTGACTTCCCTTTAATAAAA	651	ACCUUUCUGACUUCCA	1059	UGGAAGUCAGAAAGGUCUUUA
244	GAATTATTTAAAGACCTTTCTGACTTCCCTTTAATAAAAAAGAGG	652	CUGACUUCCCUUUAAA	1060	UUUAAAGGGAAGUCAGAAAGG
245	AATTATTTAAAGACCTTTCTGACTTCCCTTTAATAAAAAAGAGGA	653	UGACUUCCCUUUAAUA	1061	UAUUAAAGGGAAGUCAGAAAG
246	ATTATTTAAAGACCTTTCTGACTTCCCTTTAATAAAAAAGAGGAA	654	GACUUCCCUUUAAUAA	1062	UUAUUAAAGGGAAGUCAGAAA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
247	TTATTTAAAGACCTTTCTGACTTCCCTTTAATAAAAAAGAGGAAG	655	ACUUCCCUUUAAUAAA	1063	UUUAUUAAAGGGAAGUCAGAA
248	TATTTAAAGACCTTTCTGACTTCCCTTTAATAAAAAAGAGGAAGG	656	CUUCCCUUUAAUAAAA	1064	UUUUAUUAAAGGGAAGUCAGA
249	GAAATTCAAGGTGTTATTGACGAGATCCGAATGCATTTGCAAGAA	657	ACGAGAUCCGAAUGCA	1065	UGCAUUCGGAUCUCGUCAAUA
250	GTGTTATTGACGAGATCCGAATGCATTTGCAAGAAATACGAAAAA	658	AAUGCAUUUGCAAGAA	1066	UUCUUGCAAAUGCAUUCGGAU
251	TGTTATTGACGAGATCCGAATGCATTTGCAAGAAATACGAAAAAT	659	AUGCAUUUGCAAGAAA	1067	UUUCUUGCAAAUGCAUUCGGA
252	GTTATTGACGAGATCCGAATGCATTTGCAAGAAATACGAAAAATA	660	UGCAUUUGCAAGAAAA	1068	UUUUCUUGCAAAUGCAUUCGG
253	TTATTGACGAGATCCGAATGCATTTGCAAGAAATACGAAAAATAC	661	GCAUUUGCAAGAAAUA	1069	UAUUUCUUGCAAAUGCAUUCG
254	TATTGACGAGATCCGAATGCATTTGCAAGAAATACGAAAAATACT	662	CAUUUGCAAGAAAUAA	1070	UUAUUUCUUGCAAAUGCAUUC
255	GACGAGATCCGAATGCATTTGCAAGAAATACGAAAAATACTAAAA	663	UGCAAGAAAUACGAAA	1071	UUUCGUAUUUCUUGCAAAUGC
256	TTCTGCACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGA	664	GUAUCAGGACAGGAGA	1072	UCUCCUGUCCUGAUACUGUCA
257	TCTGCACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGAA	665	UAUCAGGACAGGAGUA	1073	UACUCCUGUCCUGAUACUGUC
258	CTGCACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGAAA	666	AUCAGGACAGGAGUUA	1074	UAACUCCUGUCCUGAUACUGU
259	TGCACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGAAAT	667	UCAGGACAGGAGUUUA	1075	UAAACUCCUGUCCUGAUACUG
260	GCACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGAAATA	668	CAGGACAGGAGUUUAA	1076	UUAAACUCCUGUCCUGAUACU
261	CACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGAAATAA	669	AGGACAGGAGUUUAUA	1077	UAUAAACUCCUGUCCUGAUAC
262	ACAATATGTGACAGTATCAGGACAGGAGTTTATGATAGAAATAAA	670	GGACAGGAGUUUAUGA	1078	UCAUAAACUCCUGUCCUGAUA
263	TCAGGACAGGAGTTTATGATAGAAATAAAGAACTCTGCTGTATCT	671	UAGAAAUAAAGAACUA	1079	UAGUUCUUUAUUUCUAUCAUA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
264	CAGGACAGGAGTTTATGATAGAAATAAAGAACTCTGCTGTATCTT	672	AGAAAUAAAGAACUCA	1080	UGAGUUCUUUAUUUCUAUCAU
265	AGGACAGGAGTTTATGATAGAAATAAAGAACTCTGCTGTATCTTG	673	GAAAUAAAGAACUCUA	1081	UAGAGUUCUUUAUUUCUAUCA
266	GGACAGGAGTTTATGATAGAAATAAAGAACTCTGCTGTATCTTGT	674	AAAUAAAGAACUCUGA	1082	UCAGAGUUCUUUAUUUCUAUC
267	GACAGGAGTTTATGATAGAAATAAAGAACTCTGCTGTATCTTGTA	675	AAUAAAGAACUCUGCA	1083	UGCAGAGUUCUUUAUUUCUAU
268	TAAAGAACTCTGCTGTATCTTGTATACCAACTGATTGGGTAAAGG	676	UUGUAUACCAACUGAA	1084	UUCAGUUGGUAUACAAGAUAC
269	TACCAACTGATTGGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCC	677	GGUUGGAAGCACAAAA	1085	UUUUGUGCUUCCAACCUUUAC
270	TGATTGGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCA	678	AGCACAAAAGCUGUGA	1086	UCACAGCUUUUGUGCUUCCAA
271	GATTGGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCAC	679	GCACAAAAGCUGUGAA	1087	UUCACAGCUUUUGUGCUUCCA
272	ATTGGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCACT	680	CACAAAAGCUGUGAGA	1088	UCUCACAGCUUUUGUGCUUCC
273	TTGGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCACTC	681	ACAAAAGCUGUGAGCA	1089	UGCUCACAGCUUUUGUGCUUC
274	TGGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCACTCT	682	CAAAAGCUGUGAGCCA	1090	UGGCUCACAGCUUUUGUGCUU
275	GGGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCACTCTC	683	AAAAGCUGUGAGCCGA	1091	UCGGCUCACAGCUUUUGUGCU
276	GGTAAAGGTTGGAAGCACAAAAGCTGTGAGCCGCTTTCACTCTCC	684	AAAGCUGUGAGCCGCA	1092	UGCGGCUCACAGCUUUUGUGC
277	GAAGCACAAAAGCTGTGAGCCGCTTTCACTCTCCTTTTATTGTAG	685	CCGCUUUCACUCUCCA	1093	UGGAGAGUGAAAGCGGCUCAC
278	AAGCACAAAAGCTGTGAGCCGCTTTCACTCTCCTTTTATTGTAGA	686	CGCUUUCACUCUCCUA	1094	UAGGAGAGUGAAAGCGGCUCA
279	AGCACAAAAGCTGTGAGCCGCTTTCACTCTCCTTTTATTGTAGAA	687	GCUUUCACUCUCCUUA	1095	UAAGGAGAGUGAAAGCGGCUC
280	GCACAAAAGCTGTGAGCCGCTTTCACTCTCCTTTTATTGTAGAAA	688	CUUUCACUCUCCUUUA	1096	UAAAGGAGAGUGAAAGCGGCU

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
281	CACAAAAGCTGTGAGCCGCTTTCACTCTCCTTTTATTGTAGAAAA	689	UUUCACUCUCCUUUUA	1097	UAAAAGGAGAGUGAAAGCGGC
282	ACAAAAGCTGTGAGCCGCTTTCACTCTCCTTTTATTGTAGAAAAT	690	UUCACUCUCCUUUUAA	1098	UUAAAAGGAGAGUGAAAGCGG
283	AGCTAGTCCTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGA	691	UGCUGAAUGGCUUGAA	1099	UUCAAGCCAUUCAGCACUGCA
284	GCTAGTCCTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAA	692	GCUGAAUGGCUUGAUA	1100	UAUCAAGCCAUUCAGCACUGC
285	CTAGTCCTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAA	693	CUGAAUGGCUUGAUUA	1101	UAAUCAAGCCAUUCAGCACUG
286	TAGTCCTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAAT	694	UGAAUGGCUUGAUUUA	1102	UAAAUCAAGCCAUUCAGCACU
287	AGTCCTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATT	695	GAAUGGCUUGAUUUUA	1103	UAAAAUCAAGCCAUUCAGCAC
288	CCTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAG	696	UGGCUUGAUUUUCUAA	1104	UUAGAAAAUCAAGCCAUUCAG
289	CTTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGT	697	GGCUUGAUUUUCUAGA	1105	UCUAGAAAAUCAAGCCAUUCA
290	TTGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGTG	698	GCUUGAUUUUCUAGAA	1106	UUCUAGAAAAUCAAGCCAUUC
291	TGACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGTGA	699	CUUGAUUUUCUAGAGA	1107	UCUCUAGAAAAUCAAGCCAUU
292	GACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGTGAA	700	UUGAUUUUCUAGAGAA	1108	UUCUCUAGAAAAUCAAGCCAU
293	ACTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGTGAAC	701	UGAUUUUCUAGAGAAA	1109	UUUCUCUAGAAAAUCAAGCCA
294	CTGCAGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGTGAACA	702	GAUUUUCUAGAGAAAA	1110	UUUUCUCUAGAAAAUCAAGCC
295	AGTGCTGAATGGCTTGATTTTCTAGAGAAATTCAGTGAACATTAT	703	UUCUAGAGAAAUUCAA	1111	UUGAAUUUCUCUAGAAAAUCA
296	CTGAATGGCTTGATTTTCTAGAGAAATTCAGTGAACATTATCACT	704	AGAGAAAUUCAGUGAA	1112	UUCACUGAAUUUCUCUAGAAA
297	ATTTTCTAGAGAAATTCAGTGAACATTATCACTCCTTGTGTAAAG	705	UGAACAUUAUCACUCA	1113	UGAGUGAUAAUGUUCACUGAA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
298	TTTCTAGAGAAATTCAGTGAACATTATCACTCCTTGTGTAAAGCA	706	AACAUUAUCACUCCUA	1114	UAGGAGUGAUAAUGUUCACUG
299	CCTTGTGTAAAGCAGTGCATCACCTAGCAACTGTTGACTGCATTT	707	UCACCUAGCAACUGUA	1115	UACAGUUGCUAGGUGAUGCAC
300	CATCACCTAGCAACTGTTGACTGCATTTTCTCCCTGGCCAAGGTC	708	ACUGCAUUUUCUCCCA	1116	UGGGAGAAAAUGCAGUCAACA
301	ATTTTCTCCCTGGCCAAGGTCGCTAAGCAAGGAGATTACTGCAGA	709	UCGCUAAGCAAGGAGA	1117	UCUCCUUGCUUAGCGACCUUG
302	CCTGGCCAAGGTCGCTAAGCAAGGAGATTACTGCAGACCAACTGT	710	CAAGGAGAUUACUGCA	1118	UGCAGUAAUCUCCUUGCUUAG
303	TGTCCCAAATAATACAGATTTATCAGAGGACTCAGAGAGAGTAAT	711	UUAUCAGAGGACUCAA	1119	UUGAGUCCUCUGAUAAAUCUG
304	AATACAGATTTATCAGAGGACTCAGAGAGAGTAATGATAATTACC	712	ACUCAGAGAGAGUAAA	1120	UUUACUCUCUCUGAGUCCUCU
305	GATTTATCAGAGGACTCAGAGAGAGTAATGATAATTACCGGACCA	713	AGAGAGUAAUGAUAAA	1121	UUUAUCAUUACUCUCUCUGAG
306	ATTTATCAGAGGACTCAGAGAGAGTAATGATAATTACCGGACCAA	714	GAGAGUAAUGAUAAUA	1122	UAUUAUCAUUACUCUCUCUGA
307	TTTATCAGAGGACTCAGAGAGAGTAATGATAATTACCGGACCAAA	715	AGAGUAAUGAUAAUUA	1123	UAAUUAUCAUUACUCUCUCUG
308	TTATCAGAGGACTCAGAGAGAGTAATGATAATTACCGGACCAAAC	716	GAGUAAUGAUAAUUAA	1124	UUAAUUAUCAUUACUCUCUCU
309	CCGGACCAAACATGGGTGGAAAGAGCTCCTACATAAAACAAGTTG	717	AAAGAGCUCCUACAUA	1125	UAUGUAGGAGCUCUUUCCACC
310	CCAAACATGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTG	718	GCUCCUACAUAAAACA	1126	UGUUUUAUGUAGGAGCUCUUU
311	CAAACATGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGA	719	CUCCUACAUAAAACAA	1127	UUGUUUUAUGUAGGAGCUCUU
312	AACATGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATT	720	CCUACAUAAAACAAGA	1128	UCUUGUUUUAUGUAGGAGCUC
313	ACATGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATTA	721	CUACAUAAAACAAGUA	1129	UACUUGUUUUAUGUAGGAGCU
314	CATGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATTAC	722	UACAUAAAACAAGUUA	1130	UAACUUGUUUUAUGUAGGAGC

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
315	ATGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATTACC	723	ACAUAAAACAAGUUGA	1131	UCAACUUGUUUUAUGUAGGAG
316	TGGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATTACCA	724	CAUAAAACAAGUUGCA	1132	UGCAACUUGUUUUAUGUAGGA
317	GGGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATTACCAT	725	AUAAAACAAGUUGCAA	1133	UUGCAACUUGUUUUAUGUAGG
318	GGTGGAAAGAGCTCCTACATAAAACAAGTTGCATTGATTACCATC	726	UAAAACAAGUUGCAUA	1134	UAUGCAACUUGUUUUAUGUAG
319	CGACAATTGGGATTGTGGATGGCATTTTCACAAGGATGGGTGCTG	727	UGGCAUUUUCACAAGA	1135	UCUUGUGAAAAUGCCAUCCAC
320	GACAATTGGGATTGTGGATGGCATTTTCACAAGGATGGGTGCTGC	728	GGCAUUUUCACAAGGA	1136	UCCUUGUGAAAAUGCCAUCCA
321	ACAATTGGGATTGTGGATGGCATTTTCACAAGGATGGGTGCTGCA	729	GCAUUUUCACAAGGAA	1137	UUCCUUGUGAAAAUGCCAUCC
322	CAATTGGGATTGTGGATGGCATTTTCACAAGGATGGGTGCTGCAG	730	CAUUUUCACAAGGAUA	1138	UAUCCUUGUGAAAAUGCCAUC
323	AATTGGGATTGTGGATGGCATTTTCACAAGGATGGGTGCTGCAGA	731	AUUUUCACAAGGAUGA	1139	UCAUCCUUGUGAAAAUGCCAU
324	TGGCATTTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGG	732	GGUGCUGCAGACAAUA	1140	UAUUGUCUGCAGCACCCAUCC
325	GCATTTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGGAC	733	UGCUGCAGACAAUAUA	1141	UAUAUUGUCUGCAGCACCCAU
326	CATTTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGGACA	734	GCUGCAGACAAUAUAA	1142	UUAUAUUGUCUGCAGCACCCA
327	ATTTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGGACAG	735	CUGCAGACAAUAUAUA	1143	UAUAUAUUGUCUGCAGCACCC
328	TTTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGGACAGA	736	UGCAGACAAUAUAUAA	1144	UUAUAUAUUGUCUGCAGCACC
329	TTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGGACAGAG	737	GCAGACAAUAUAUAUA	1145	UAUAUAUAUUGUCUGCAGCAC
330	TATAAAGGACAGAGTACATTTATGGAAGAACTGACTGACACAGCA	738	UUAUGGAAGAACUGAA	1146	UUCAGUUCUUCCAUAAAUGUA
331	TTTATGGAAGAACTGACTGACACAGCAGAAATAATCAGAAAAGCA	739	ACACAGCAGAAAUAAA	1147	UUUAUUUCUGCUGUGUCAGUC

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
332	AGAAATAATCAGAAAAGCAACATCACAGTCCTTGGTTATCTTGGA	740	ACAUCACAGUCCUUGA	1148	UCAAGGACUGUGAUGUUGCUU
333	ATCAGAAAAGCAACATCACAGTCCTTGGTTATCTTGGATGAACTA	741	AGUCCUUGGUUAUCUA	1149	UAGAUAACCAAGGACUGUGAU
334	ACATCACAGTCCTTGGTTATCTTGGATGAACTAGGAAGAGGGACG	742	UCUUGGAUGAACUAGA	1150	UCUAGUUCAUCCAAGAUAACC
335	TCACAGTCCTTGGTTATCTTGGATGAACTAGGAAGAGGGACGAGC	743	UGGAUGAACUAGGAAA	1151	UUUCCUAGUUCAUCCAAGAUA
336	ACTCATGATGGAATTGCCATTGCCTATGCTACACTTGAGTATTTC	744	UUGCCUAUGCUACACA	1152	UGUGUAGCAUAGGCAAUGGCA
337	CCTATGCTACACTTGAGTATTTCATCAGAGATGTGAAATCCTTAA	745	UUUCAUCAGAGAUGUA	1153	UACAUCUCUGAUGAAAUACUC
338	TATGCTACACTTGAGTATTTCATCAGAGATGTGAAATCCTTAACC	746	UCAUCAGAGAUGUGAA	1154	UUCACAUCUCUGAUGAAAUAC
339	GTATTTCATCAGAGATGTGAAATCCTTAACCCTGTTTGTCACCCA	747	AAAUCCUUAACCCUGA	1155	UCAGGGUUAAGGAUUUCACAU
340	TGTGAAATCCTTAACCCTGTTTGTCACCCATTATCCGCCAGTTTG	748	UUUGUCACCCAUUAUA	1156	UAUAAUGGGUGACAAACAGGG
341	CCTTAACCCTGTTTGTCACCCATTATCCGCCAGTTTGTGAACTAG	749	CCAUUAUCCGCCAGUA	1157	UACUGGCGGAUAAUGGGUGAC
342	GTTTGTCACCCATTATCCGCCAGTTTGTGAACTAGAAAAAAATTA	750	CCAGUUUGUGAACUAA	1158	UUAGUUCACAAACUGGCGGAU
343	GTCACCCATTATCCGCCAGTTTGTGAACTAGAAAAAAATTACTCA	751	UUUGUGAACUAGAAAA	1159	UUUUCUAGUUCACAAACUGGC
344	TTACCACATGGGATTCTTGGTCAGTGAGGATGAAAGCAAACTGGA	752	GUCAGUGAGGAUGAAA	1160	UUUCAUCCUCACUGACCAAGA
345	AGAACAAGTCCCTGATTTTGTCACCTTCCTTTACCAAATAACTAG	753	GUCACCUUCCUUUACA	1161	UGUAAAGGAAGGUGACAAAAU
346	GAACAAGTCCCTGATTTTGTCACCTTCCTTTACCAAATAACTAGA	754	UCACCUUCCUUUACCA	1162	UGGUAAAGGAAGGUGACAAAA
347	AAGTCCCTGATTTTGTCACCTTCCTTTACCAAATAACTAGAGGAA	755	CUUCCUUUACCAAAUA	1163	UAUUUGGUAAAGGAAGGUGAC
348	AGTCCCTGATTTTGTCACCTTCCTTTACCAAATAACTAGAGGAAT	756	UUCCUUUACCAAAUAA	1164	UUAUUUGGUAAAGGAAGGUGA

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
349	GTCCCTGATTTTGTCACCTTCCTTTACCAAATAACTAGAGGAATT	757	UCCUUUACCAAAUAAA	1165	UUUAUUUGGUAAAGGAAGGUG
350	TCCCTGATTTTGTCACCTTCCTTTACCAAATAACTAGAGGAATTG	758	CCUUUACCAAAUAACA	1166	UGUUAUUUGGUAAAGGAAGGU
351	TTGTCACCTTCCTTTACCAAATAACTAGAGGAATTGCAGCAAGGA	759	AAUAACUAGAGGAAUA	1167	UAUUCCUCUAGUUAUUUGGUA
352	CTTTACCAAATAACTAGAGGAATTGCAGCAAGGAGTTATGGATTA	760	GAAUUGCAGCAAGGAA	1168	UUCCUUGCUGCAAUUCCUCUA
353	CCAAATAACTAGAGGAATTGCAGCAAGGAGTTATGGATTAAATGT	761	GCAGCAAGGAGUUAUA	1169	UAUAACUCCUUGCUGCAAUUC
354	AATAACTAGAGGAATTGCAGCAAGGAGTTATGGATTAAATGTGGC	762	GCAAGGAGUUAUGGAA	1170	UUCCAUAACUCCUUGCUGCAA
355	ATAACTAGAGGAATTGCAGCAAGGAGTTATGGATTAAATGTGGCT	763	CAAGGAGUUAUGGAUA	1171	UAUCCAUAACUCCUUGCUGCA
356	ACTAGAGGAATTGCAGCAAGGAGTTATGGATTAAATGTGGCTAAA	764	GGAGUUAUGGAUUAAA	1172	UUUAAUCCAUAACUCCUUGCU
357	AGGAGTTATGGATTAAATGTGGCTAAACTAGCAGATGTTCCTGGA	765	UGGCUAAACUAGCAGA	1173	UCUGCUAGUUUAGCCACAUUU
358	CCTGGAGAAATTTTGAAGAAAGCAGCTCACAAGTCAAAAGAGCTG	766	AAGCAGCUCACAAGUA	1174	UACUUGUGAGCUGCUUUCUUC
359	TAAATACGAAAAGAAAGAGACTCAAGTATTTTGCAAAGTTATTGGA	767	ACUCAAGUAUUUUGCA	1175	UGCAAAAUACUUGAGUCUCUU
360	AAATACGAAAAGAAAGAGACTCAAGTATTTTGCAAAGTTATGGAC	768	CUCAAGUAUUUUGCAA	1176	UUGCAAAAUACUUGAGUCUCU
361	AATACGAAAAGAAAGAGACTCAAGTATTTTGCAAAGTTATGGACG	769	UCAAGUAUUUUGCAAA	1177	UUUGCAAAAUACUUGAGUCUC
362	ATACGAAAAGAAAGAGACTCAAGTATTTTGCAAAGTTATGGACGA	770	CAAGUAUUUUGCAAAA	1178	UUUUGCAAAAUACUUGAGUCU
363	TACGAAAAGAAAGAGACTCAAGTATTTTGCAAAGTTATGGACGAT	771	AAGUAUUUUGCAAAGA	1179	UCUUUGCAAAAUACUUGAGUC
364	GAGACTCAAGTATTTTGCAAAGTTATGGACGATGCATAATGCACA	772	AAGUUAUGGACGAUGA	1180	UCAUCGUCCAUAACUUUGCAA
365	AGAAGTGGACAGAGGAGTTCAACATGGAAGAAACACAGACTTCTC	773	CAACAUGGAAGAAACA	1181	UGUUUCUUCCAUGUUGAACUC

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
366	GAAGTGGACAGAGGAGTTCAACATGGAAGAAACACAGACTTCTCT	774	AACAUGGAAGAAACAA	1182	UUGUUUCUUCCAUGUUGAACU
367	AAGTGGACAGAGGAGTTCAACATGGAAGAAACACAGACTTCTCTT	775	ACAUGGAAGAAACACA	1183	UGUGUUUCUUCCAUGUUGAAC
368	AGTGGACAGAGGAGTTCAACATGGAAGAAACACAGACTTCTCTTC	776	CAUGGAAGAAACACAA	1184	UUGUGUUUCUUCCAUGUUGAA
369	GTGGACAGAGGAGTTCAACATGGAAGAAACACAGACTTCTCTTCT	777	AUGGAAGAAACACAGA	1185	UCUGUGUUUCUUCCAUGUUGA
370	AGAGGAGTTCAACATGGAAGAAACACAGACTTCTCTTCTTCATTA	778	GAAACACAGACUUCUA	1186	UAGAAGUCUGUGUUUCUUCCA
371	GTTCAACATGGAAGAAACACAGACTTCTCTTCTTCATTAAAATGA	779	CAGACUUCUCUUCUUA	1187	UAAGAAGAGAAGUCUGUGUUU
372	CTTCATTAAAATGAAGACTACATTTGTGAACAAAAAATGGAGAAT	780	ACAUUUGUGAACAAAA	1188	UUUUGUUCACAAAUGUAGUCU
373	ATTAAAAATACCAACTGTACAAAATAACTCTCCAGTAACAGCCTA	781	CAAAAUAACUCUCCAA	1189	UUGGAGAGUUAUUUUGUACAG
374	TTAAAAATACCAACTGTACAAAATAACTCTCCAGTAACAGCCTAT	782	AAAAUAACUCUCCAGA	1190	UCUGGAGAGUUAUUUUGUACA
375	TGTACAAAATAACTCTCCAGTAACAGCCTATCTTTGTGTGACATG	783	GUAACAGCCUAUCUUA	1191	UAAGAUAGGCUGUUACUGGAG
376	AGTAACAGCCTATCTTTGTGTGACATGTGAGCATAAAATTATGAC	784	GUGACAUGUGAGCAUA	1192	UAUGCUCACAUGUCACACAAA
377	AACAGCCTATCTTTGTGTGACATGTGAGCATAAAATTATGACCAT	785	ACAUGUGAGCAUAAAA	1193	UUUUAUGCUCACAUGUCACAC
378	ATCTTTGTGTGACATGTGAGCATAAAATTATGACCATGGTATATT	786	GCAUAAAAUUAUGACA	1194	UGUCAUAAUUUUAUGCUCACA
379	ATGTGAGCATAAAATTATGACCATGGTATATTCCTATTGGAAACA	787	ACCAUGGUAUAUUCCA	1195	UGGAAUAUACCAUGGUCAUAA
380	TGTGAGCATAAAATTATGACCATGGTATATTCCTATTGGAAACAG	788	CCAUGGUAUAUUCCUA	1196	UAGGAAUAUACCAUGGUCAUA
381	AATTATGACCATGGTATATTCCTATTGGAAACAGAGAGGTTTTTC	789	UCCUAUUGGAAACAGA	1197	UCUGUUUCCAAUAGGAAUAUA
382	TATGACCATGGTATATTCCTATTGGAAACAGAGAGGTTTTTCTGA	790	UAUUGGAAACAGAGAA	1198	UUCUCUGUUUCCAAUAGGAAU

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
383	CCATGGTATATTCCTATTGGAAACAGAGAGGTTTTTCTGAAGACA	791	GAAACAGAGAGGUUUA	1199	UAAACCUCUCUGUUUCCAAUA
384	GTCTTTTTCAAGTTTCTGTCTTCCTAACTTTTCTACGTATAAACA	792	CUUCCUAACUUUUCUA	1200	UAGAAAAGUUAGGAAGACAGA
385	TTTTCAAGTTTCTGTCTTCCTAACTTTTCTACGTATAAACACTCT	793	CUAACUUUUCUACGUA	1201	UACGUAGAAAAGUUAGGAAGA
386	TTTCAAGTTTCTGTCTTCCTAACTTTTCTACGTATAAACACTCTT	794	UAACUUUUCUACGUAA	1202	UUACGUAGAAAAGUUAGGAAG
387	CTGTCTTCCTAACTTTTCTACGTATAAACACTCTTGAATAGACTT	795	ACGUAUAAACACUCUA	1203	UAGAGUGUUUAUACGUAGAAA
388	TGTCTTCCTAACTTTTCTACGTATAAACACTCTTGAATAGACTTC	796	CGUAUAAACACUCUUA	1204	UAAGAGUGUUUAUACGUAGAA
389	TCTTCCTAACTTTTCTACGTATAAACACTCTTGAATAGACTTCCA	797	UAUAAACACUCUUGAA	1205	UUCAAGAGUGUUUAUACGUAG
390	TTTTCTACGTATAAACACTCTTGAATAGACTTCCACTTTGTAATT	798	CUUGAAUAGACUUCCA	1206	UGGAAGUCUAUUCAAGAGUGU
391	TACGTATAAACACTCTTGAATAGACTTCCACTTTGTAATTAGAAA	799	AUAGACUUCCACUUUA	1207	UAAAGUGGAAGUCUAUUCAAG
392	ACGTATAAACACTCTTGAATAGACTTCCACTTTGTAATTAGAAAA	800	UAGACUUCCACUUUGA	1208	UCAAAGUGGAAGUCUAUUCAA
393	TATAAACACTCTTGAATAGACTTCCACTTTGTAATTAGAAAATTT	801	ACUUCCACUUUGUAAA	1209	UUUACAAAGUGGAAGUCUAUU
394	AAACACTCTTGAATAGACTTCCACTTTGTAATTAGAAAATTTTAT	802	UCCACUUUGUAAUUAA	1210	UUAAUUACAAAGUGGAAGUCU
395	AACACTCTTGAATAGACTTCCACTTTGTAATTAGAAAATTTTATG	803	CCACUUUGUAAUUAGA	1211	UCUAAUUACAAAGUGGAAGUC
396	AATTTTATGGACAGTAAGTCCAGTAAAGCCTTAAGTGGCAGAATA	804	CCAGUAAAGCCUUAAA	1212	UUUAAGGCUUUACUGGACUUA
397	AGTAAGTCCAGTAAAGCCTTAAGTGGCAGAATATAATTCCCAAGC	805	UAAGUGGCAGAAUAUA	1213	UAUAUUCUGCCACUUAAGGCU
398	TCCAGTAAAGCCTTAAGTGGCAGAATATAATTCCCAAGCTTTTGG	806	GCAGAAUAUAAUUCCA	1214	UGGAAUUAUAUUCUGCCACUU
399	TGGCAACTGGGTGAATCTGGCAGGAATCTATCCATTGAACTAAAA	807	GCAGGAAUCUAUCCAA	1215	UUGGAUAGAUUCCUGCCAGAU

Gene region SEQ ID NO:	Gene Region	Sense SEQ ID NO:	Sense Sequence	Antisense SEQ ID NO:	Antisense Sequence
400	CTGGGTGAATCTGGCAGGA ATCTATCCATTGAACTAAAAT AATTT	808	AUCUAUCC AUUGAACA	1216	UGUUCAAUGG AUAGAUUCCU G
401	AAAATAATTTTATTATGCAAC CAGTTTATCCACCAAGAACA TAAG	809	ACCAGUUU AUCCACCA	1217	UGGUGGAUAA ACUGGUUGCA U
402	ATTTTATTATGCAACCAGTTT ATCCACCAAGAACATAAGAA TTTT	810	UUAUCCAC CAAGAACA	1218	UGUUCUUGGU GGAUAAACUG G
403	TATGCAACCAGTTTATCCAC CAAGAACATAAGAATTTTTTA TAAG	811	CCAAGAAC AUAAGAAA	1219	UUUCUUAUGU UCUUGGUGGA U
404	AAGCTTTTAAAAACTAGAGC ACAGAAGGAATAAGGTCATG AAATT	812	CACAGAAG GAAUAAGA	1220	UCUUAUUCCU UCUGUGCUCU A
405	TTTTAAAAACTAGAGCACAG AAGGAATAAGGTCATGAAAT TTAAA	813	GAAGGAAU AAGGUCAA	1221	UUGACCUUAU UCCUUCUGUG C
406	TTTAAAAACTAGAGCACAGA AGGAATAAGGTCATGAAATT TAAAA	814	AAGGAAUA AGGUCAUA	1222	UAUGACCUUA UUCCUUCUGU G
407	AAGGTTAAATATTGTCATAG GATTAAGCAGTTTAAAGATT GTTGG	815	GGAUUAAG CAGUUUAA	1223	UUAAACUGCU UAAUCCUAUG A
408	TATTGTCATAGGATTAAGCA GTTTAAAGATTGTTGGATGA AATTA	816	AGUUUAAA GAUUGUUA	1224	UAACAAUCUU UAAACUGCUU A

In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript that is within the open reading frame of the *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within an *MSH3* mRNA transcript that is within the 3'-untranslated region.

In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 1 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 2 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 3 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 4 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 5 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 6 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to

hybridize to a region within exon 7 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 8 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 9 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 10 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 11 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 12 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 13 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 14 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 15 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 16 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 17 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 18 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 19 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 20 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 21 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 22 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 23 of an *MSH3* mRNA transcript. In some embodiments, the siRNA molecules of the disclosure have complementarity sufficient to hybridize to a region within exon 24 of an *MSH3* mRNA transcript.

Table 1B, below, discloses which position of the gene in which each target region is contained (e.g., open reading frame or 3'-untranslated region) and the exon in which each target region is contained.

Table 1B. Location of mRNA sequences for gene-specific *MSH3*-targeting siRNA

Gene Region SEQ ID NO:	Gene Position	Exon	Gene Region SEQ ID NO:	Gene position	Exon	Gene Region SEQ ID NO:	Gene Position	Exon
1	ORF	1	137	ORF	8	273	ORF	16-17
2	ORF	1	138	ORF	8	274	ORF	16-17
3	ORF	1	139	ORF	8	275	ORF	16-17
4	ORF	1	140	ORF	9	276	ORF	16-17

Gene Region SEQ ID NO:	Gene Position	Exon	Gene Region SEQ ID NO:	Gene position	Exon	Gene Region SEQ ID NO:	Gene Position	Exon
5	ORF	2	141	ORF	9	277	ORF	17
6	ORF	2	142	ORF	9	278	ORF	17
7	ORF	2	143	ORF	9	279	ORF	17
8	ORF	2	144	ORF	9	280	ORF	17
9	ORF	2	145	ORF	9	281	ORF	17
10	ORF	2	146	ORF	9	282	ORF	17
11	ORF	2	147	ORF	9	283	ORF	17
12	ORF	2	148	ORF	9	284	ORF	17
13	ORF	2	149	ORF	9	285	ORF	17
14	ORF	2	150	ORF	9	286	ORF	17
15	ORF	2	151	ORF	9	287	ORF	17
16	ORF	2-3	152	ORF	9	288	ORF	17
17	ORF	2-3	153	ORF	9	289	ORF	17
18	ORF	2-3	154	ORF	9	290	ORF	17-18
19	ORF	2-3	155	ORF	9-10	291	ORF	17-18
20	ORF	2-3	156	ORF	9-10	292	ORF	17-18
21	ORF	3	157	ORF	9-10	293	ORF	17-18
22	ORF	3	158	ORF	9-10	294	ORF	17-18
23	ORF	3	159	ORF	9-10	295	ORF	17-18
24	ORF	3	160	ORF	9-10	296	ORF	17-18
25	ORF	3	161	ORF	9-10	297	ORF	18
26	ORF	3	162	ORF	9-10	298	ORF	18
27	ORF	3	163	ORF	10	299	ORF	18
28	ORF	3	164	ORF	10	300	ORF	18
29	ORF	3	165	ORF	10	301	ORF	18
30	ORF	3	166	ORF	10	302	ORF	18
31	ORF	3	167	ORF	10	303	ORF	19-20
32	ORF	3	168	ORF	10	304	ORF	19-20
33	ORF	3	169	ORF	10	305	ORF	20
34	ORF	3	170	ORF	10	306	ORF	20
35	ORF	3	171	ORF	10	307	ORF	20
36	ORF	3	172	ORF	10	308	ORF	20
37	ORF	3	173	ORF	10	309	ORF	20
38	ORF	3	174	ORF	10	310	ORF	20
39	ORF	3	175	ORF	10	311	ORF	20
40	ORF	3	176	ORF	10	312	ORF	20
41	ORF	3	177	ORF	10	313	ORF	20
42	ORF	3	178	ORF	10	314	ORF	20
43	ORF	3	179	ORF	10	315	ORF	20
44	ORF	3	180	ORF	10	316	ORF	20

Gene Region SEQ ID NO:	Gene Position	Exon	Gene Region SEQ ID NO:	Gene position	Exon	Gene Region SEQ ID NO:	Gene Position	Exon
45	ORF	3	181	ORF	10	317	ORF	20
46	ORF	3	182	ORF	10	318	ORF	20
47	ORF	3	183	ORF	10-11	319	ORF	20-21
48	ORF	4	184	ORF	10-11	320	ORF	20-21
49	ORF	4	185	ORF	10-11	321	ORF	20-21
50	ORF	4	186	ORF	10-11	322	ORF	20-21
51	ORF	4	187	ORF	10-11	323	ORF	20-21
52	ORF	4	188	ORF	11	324	ORF	20-21
53	ORF	4	189	ORF	11	325	ORF	21
54	ORF	4	190	ORF	11	326	ORF	21
55	ORF	4	191	ORF	11	327	ORF	21
56	ORF	4	192	ORF	11	328	ORF	21
57	ORF	4	193	ORF	11-12	329	ORF	21
58	ORF	4	194	ORF	11-12	330	ORF	21
59	ORF	4	195	ORF	11-12	331	ORF	21
60	ORF	4	196	ORF	11-12	332	ORF	21
61	ORF	4	197	ORF	11-12	333	ORF	21
62	ORF	4	198	ORF	11-12	334	ORF	21
63	ORF	4	199	ORF	11-12	335	ORF	21
64	ORF	4	200	ORF	11-12	336	ORF	21
65	ORF	4	201	ORF	12	337	ORF	21-22
66	ORF	4	202	ORF	12	338	ORF	21-22
67	ORF	4	203	ORF	12	339	ORF	21-22
68	ORF	4	204	ORF	12	340	ORF	22
69	ORF	4	205	ORF	12	341	ORF	22
70	ORF	4	206	ORF	13	342	ORF	22
71	ORF	4	207	ORF	13	343	ORF	22
72	ORF	4	208	ORF	13	344	ORF	22
73	ORF	4	209	ORF	13	345	ORF	23
74	ORF	4	210	ORF	13	346	ORF	23
75	ORF	4	211	ORF	13	347	ORF	23
76	ORF	4	212	ORF	13	348	ORF	23
77	ORF	4	213	ORF	13	349	ORF	23
78	ORF	4	214	ORF	13	350	ORF	23
79	ORF	4	215	ORF	13	351	ORF	23
80	ORF	4	216	ORF	13	352	ORF	23
81	ORF	4	217	ORF	13	353	ORF	23
82	ORF	4	218	ORF	13	354	ORF	23
83	ORF	4	219	ORF	13	355	ORF	23
84	ORF	4	220	ORF	13	356	ORF	23

Gene Region SEQ ID NO:	Gene Position	Exon	Gene Region SEQ ID NO:	Gene position	Exon	Gene Region SEQ ID NO:	Gene Position	Exon
85	ORF	5	221	ORF	13	357	ORF	23
86	ORF	5	222	ORF	13	358	ORF	23
87	ORF	5	223	ORF	13-14	359	ORF	24
88	ORF	5	224	ORF	14	360	ORF	24
89	ORF	5	225	ORF	14	361	ORF	24
90	ORF	5	226	ORF	14	362	ORF	24
91	ORF	5	227	ORF	14	363	ORF	24
92	ORF	5	228	ORF	14	364	ORF	24
93	ORF	5	229	ORF	14	365	ORF	24
94	ORF	5	230	ORF	14	366	ORF	24
95	ORF	5	231	ORF	14	367	ORF	24
96	ORF	5	232	ORF	14	368	ORF	24
97	ORF	5	233	ORF	14	369	ORF	24
98	ORF	5	234	ORF	14	370	ORF	24
99	ORF	5	235	ORF	14	371	ORF	24
100	ORF	5	236	ORF	14	372	ORF_3UTR	24
101	ORF	5-6	237	ORF	14	373	3UTR	24
102	ORF	5-6	238	ORF	14	374	3UTR	24
103	ORF	5-6	239	ORF	14	375	3UTR	24
104	ORF	6	240	ORF	14	376	3UTR	24
105	ORF	6	241	ORF	14	377	3UTR	24
106	ORF	6	242	ORF	14	378	3UTR	24
107	ORF	6	243	ORF	15	379	3UTR	24
108	ORF	6	244	ORF	15	380	3UTR	24
109	ORF	6	245	ORF	15	381	3UTR	24
110	ORF	6	246	ORF	15	382	3UTR	24
111	ORF	6	247	ORF	15	383	3UTR	24
112	ORF	6	248	ORF	15	384	3UTR	24
113	ORF	6	249	ORF	15	385	3UTR	24
114	ORF	6	250	ORF	15	386	3UTR	24
115	ORF	6	251	ORF	15	387	3UTR	24
116	ORF	6	252	ORF	15	388	3UTR	24
117	ORF	6	253	ORF	15	389	3UTR	24
118	ORF	6	254	ORF	15	390	3UTR	24
119	ORF	6	255	ORF	15	391	3UTR	24
120	ORF	6	256	ORF	15-16	392	3UTR	24
121	ORF	7	257	ORF	15-16	393	3UTR	24
122	ORF	7	258	ORF	15-16	394	3UTR	24
123	ORF	7	259	ORF	15-16	395	3UTR	24
124	ORF	7	260	ORF	15-16	396	3UTR	24

Gene Region SEQ ID NO:	Gene Position	Exon	Gene Region SEQ ID NO:	Gene position	Exon	Gene Region SEQ ID NO:	Gene Position	Exon
125	ORF	7	261	ORF	15-16	397	3UTR	24
126	ORF	7	262	ORF	15-16	398	3UTR	24
127	ORF	7	263	ORF	16	399	3UTR	24
128	ORF	7	264	ORF	16	400	3UTR	24
129	ORF	7	265	ORF	16	401	3UTR	24
130	ORF	7	266	ORF	16	402	3UTR	24
131	ORF	7	267	ORF	16	403	3UTR	24
132	ORF	7	268	ORF	16	404	3UTR	24
133	ORF	7	269	ORF	16-17	405	3UTR	24
134	ORF	8	270	ORF	16-17	406	3UTR	24
135	ORF	8	271	ORF	16-17	407	3UTR	24
136	ORF	8	272	ORF	16-17	408	3UTR	24

siRNA Structure

The siRNA molecules of the disclosure may be in the form of a single-stranded (ss) or double-stranded (ds) oligonucleotide structure. In some embodiments, the siRNA molecules may be di-branched, tri-branched, or tetra-branched molecules. Furthermore, the siRNA molecules of the disclosure may contain one or more phosphodiester internucleoside linkages and/or an analog thereof, such as a phosphorothioate internucleoside linkage. The siRNA molecules of the disclosure may further contain chemically modified nucleosides having 2' sugar modifications.

The simplest siRNAs consist of a ribonucleic acid, including a ss- or ds- structure, formed by a first strand (i.e., antisense strand), and in the case of a ds-siRNA, a second strand (i.e., sense strand). The first strand includes a stretch of contiguous nucleotides that is at least partially complementary to a target nucleic acid. The second strand also includes a stretch of contiguous nucleotides where the second stretch is at least partially identical to a target nucleic acid. The first strand and said second strand may be hybridized to each other to form a double-stranded structure. The hybridization typically occurs by Watson Crick base pairing.

Depending on the sequence of the first and second strand, the hybridization or base pairing is not necessarily complete or perfect, which means that the first and second strand are not 100% base-paired due to mismatches. One or more mismatches may also be present within the duplex without necessarily impacting the siRNA RNAi activity.

The first strand contains a stretch of contiguous nucleotides which is essentially complementary to a target nucleic acid. Typically, the target nucleic acid sequence is, in accordance with the mode of action of interfering ribonucleic acids, a ss-RNA, preferably an mRNA. Such hybridization occurs most likely through Watson Crick base pairing but is not necessarily limited thereto. The extent to which the first strand has a complementary stretch of contiguous nucleotides to

a target nucleic acid sequence may be between 80% and 100%, e.g., 80%, 85%, 90%, 95%, or 100% complementary.

The siRNA molecules described herein may employ modifications to the nucleobase, phosphate backbone, ribose core, 5′- and 3′-ends, and branching, wherein multiple strands of siRNA may be covalently linked.

Lengths of Small Interfering RNA Molecules

It is within the scope of the disclosure that any length, known and previously unknown in the art, may be employed for the current invention. As described herein, potential lengths for an antisense strand of the siRNA molecules of the present disclosure is between 10 and 30 nucleotides (e.g., 10 nucleotides, 11 nucleotides, 12 nucleotides, 13 nucleotides, 14 nucleotides, 15 nucleotides, 16 nucleotides, 17 nucleotides, 18 nucleotides, 19 nucleotides, 20 nucleotides, 21 nucleotides, 22 nucleotides, 23 nucleotides, 24 nucleotides, 25 nucleotides, 26 nucleotides, 27 nucleotides, 28 nucleotides, 29 nucleotides, or 30 nucleotides), 15 and 25 nucleotides (e.g., 15 nucleotides, 16 nucleotides, 17 nucleotides, 18 nucleotides, 19 nucleotides, 20 nucleotides, 21 nucleotides, 22 nucleotides, 23 nucleotides, 24 nucleotides, or 25 nucleotides), or 18 and 23 nucleotides (e.g., 18 nucleotides, 19 nucleotides, 20 nucleotides, 21 nucleotides, 22 nucleotides, or 23 nucleotides). In some embodiments, the antisense strand is 20 nucleotides. In some embodiments, the antisense strand is 21 nucleotides. In some embodiments, the antisense strand is 22 nucleotides. In some embodiments, the antisense strand is 23 nucleotides. In some embodiments, the antisense strand is 24 nucleotides. In some embodiments, the antisense strand is 25 nucleotides. In some embodiments, the antisense strand is 26 nucleotides. In some embodiments, the antisense strand is 27 nucleotides. In some embodiments, the antisense strand is 28 nucleotides. In some embodiments, the antisense strand is 29 nucleotides. In some embodiments, the antisense strand is 30 nucleotides.

In some embodiments, the sense strand of the siRNA molecules of the present disclosure is between 12 and 30 nucleotides (e.g., 12 nucleotides, 13 nucleotides, 14 nucleotides, 15 nucleotides, 16 nucleotides, 17 nucleotides, 18 nucleotides, 19 nucleotides, 20 nucleotides, 21 nucleotides, 22 nucleotides, 23 nucleotides, 24 nucleotides, 25 nucleotides, 26 nucleotides, 27 nucleotides, 28 nucleotides, 29 nucleotides, or 30 nucleotides), or 14 and 23 nucleotides (e.g., 14 nucleotides, 15 nucleotides, 16 nucleotides, 17 nucleotides, 18 nucleotides, 19 nucleotides, 20 nucleotides, 21 nucleotides, 22 nucleotides, or 23 nucleotides). In some embodiments, the sense strand is 15 nucleotides. In some embodiments, the sense strand is 16 nucleotides. In some embodiments, the sense strand is 17 nucleotides. In some embodiments, the sense strand is 18 nucleotides. In some embodiments, the sense strand is 19 nucleotides. In some embodiments, the sense strand is 20 nucleotides. In some embodiments, the sense strand is 21 nucleotides. In some embodiments, the sense strand is 22 nucleotides. In some embodiments, the sense strand is 23 nucleotides. In some embodiments, the sense strand is 24 nucleotides. In some embodiments, the sense strand is 25 nucleotides. In some embodiments, the sense strand is 26 nucleotides. In some embodiments, the sense strand is 27 nucleotides. In some embodiments, the sense strand is 28 nucleotides. In some

embodiments, the sense strand is 29 nucleotides. In some embodiments, the sense strand is 30 nucleotides.

2′ Sugar Modifications

The present disclosure may include ss- and ds- siRNA molecule compositions including at least one (e.g., at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, or more) nucleosides having 2' sugar modifications. Possible 2′-modifications include all possible orientations of OH; F; O-, S-, or N-alkyl; O-, S-, or N-alkenyl; O-, S- or N-alkynyl; or O-alkyl-O-alkyl, wherein the alkyl, alkenyl and alkynyl may be substituted or unsubstituted C1 to C10 alkyl or C2 to C10 alkenyl and alkynyl. In some embodiments, the modification includes a 2'-O-methyl (2'-O-Me) modification. Other potential sugar substituent groups include: C1 to C10 lower alkyl, substituted lower alkyl, alkenyl, alkynyl, alkaryl, aralkyl, O-alkaryl or O-aralkyl, SH, SCH_3, OCN, Cl, Br, CN, CF_3, OCF_3, $SOCH_3$, SO_2CH_3, ONO_2, NO_2, N_3, NH_2, heterocycloalkyl, heterocycloalkaryl, aminoalkylamino, polyalkylamino, substituted silyl, a group for improving the pharmacokinetic properties of an oligonucleotide, or a group for improving the pharmacodynamic properties of an oligonucleotide, and other substituents having similar properties. In some embodiments, the modification includes 2′-methoxyethoxy (2′-O-$CH_2CH_2OCH_3$, also known as 2′-O-(2-methoxyethyl) or 2′-MOE). In some embodiments, the modification includes 2′-dimethylaminooxyethoxy, i.e., a $O(CH_2)_2ON(CH_3)_2$ group, also known as 2′-DMAOE, and 2′-dimethylaminoethoxyethoxy (also known in the art as 2′-O-dimethylamino-ethoxy-ethyl or 2′-DMAEOE), i.e., 2′-O-$CH_2OCH_2N(CH_3)_2$. Other potential sugar substituent groups include, e.g., aminopropoxy (-$OCH_2CH_2CH_2NH_2$), allyl (-CH_2-CH=CH_2), -O-allyl (-O-CH_2-CH=CH_2) and fluoro (F). 2′-sugar substituent groups may be in the arabino (up) position or ribo (down) position. In some embodiments, the 2′-arabino modification is 2′-F. Similar modifications may also be made at other positions on the siRNA molecule, particularly the 3′ position of the sugar on the 3′ terminal nucleoside or in 2′-5′ linked oligonucleotides and the 5′ position of 5′ terminal nucleotide. Oligonucleotides may also have sugar mimetics such as cyclobutyl moieties in place of the pentofuranosyl sugar.

Nucleobase Modifications

The siRNA molecules of the disclosure may also include nucleosides or other surrogate or mimetic monomeric subunits that include a nucleobase (often referred to in the art simply as "base" or "heterocyclic base moiety"). The nucleobase is another moiety that has been extensively modified or substituted and such modified and or substituted nucleobases are amenable to the present disclosure. As used herein, "unmodified" or "natural" nucleobases include the purine bases adenine (A) and guanine (G), and the pyrimidine bases thymine (T), cytosine (C) and uracil (U). Modified nucleobases also referred herein as heterocyclic base moieties include other synthetic and natural nucleobases such as 5-methylcytosine (5-me-C), 5-hydroxymethyl cytosine, xanthine, hypoxanthine, 2-aminoadenine, 6-methyl and other alkyl derivatives of adenine and guanine, 2-propyl and other alkyl derivatives of adenine and guanine, 2-thiouracil, 2-thiothymine and 2-thiocytosine, 5-halouracil and cytosine, 5-propynyl (-C=C-CH3) uracil and cytosine and other alkynyl derivatives of pyrimidine bases, 6-azo uracil, cytosine and thymine, 5-uracil (pseudouracil), 4-thiouracil, 8-halo, 8-amino, 8-

thiol, 8-thioalkyl, 8-hydroxyl and other 8-substituted adenines and guanines, 5-halo particularly 5-bromo, 5-trifluoromethyl and other 5-substituted uracils and cytosines, 7-methylguanine and 7-methyladenine, 2-F-adenine, 2-amino-adenine, 8-azaguanine and 8-azaadenine, 7-deazaguanine and 7-deazaadenine and 3-deazaguanine and 3-deazaadenine. Nucleobases may also include those in which the purine or pyrimidine base is replaced with other heterocycles, for example 7-deaza-adenine, 7-deazaguanosine, 2-aminopyridine and 2-pyridone. Further nucleobases include those disclosed in US 3,687,808, those disclosed in Kroschwitz, J.I., ed. *The Concise Encyclopedia of Polymer Science and Engineering,* New York, John Wiley & Sons, 1990, pp. 858-859; those disclosed by Englisch et al., *Angewandte Chemie,* International Edition 30:613, 1991; and those disclosed by Sanghvi, Y.S., Chapter 16, *Antisense Research and Applications,* CRC Press, Gait, M.J. ed., 1993, pp. 289-302. The siRNA molecules of the present disclosure may also include polycyclic heterocyclic compounds in place of one or more heterocyclic base moieties. A number of tricyclic heterocyclic compounds have been previously reported. These compounds are routinely used in antisense applications to increase the binding properties of the modified strand to a target strand.

Representative cytosine analogs that make three hydrogen bonds with a guanosine in a second strand include 1,3-diazaphenoxazine-2-one (Kurchavov *et al., Nucleosides and Nucleotides,* 16:1837-46, 1997), 1,3-diazaphenothiazine-2-one (Lin et al. *Am. Chem. Soc.,* 117:3873-4, 1995), and 6,7,8,9-tetrafluoro-l,3-diazaphenoxazine-2-one (Wang et al., *Tetrahedron Lett.,* 39:8385-8, 1998). Incorporated into oligonucleotides, these base modifications were shown to hybridize with complementary guanine and the latter was also shown to hybridize with adenine and to enhance helical thermal stability by extended stacking interactions (also see US 10/155,920 and US 10/013,295, both of which are herein incorporated by reference in their entirety). Further helix-stabilizing properties have been observed when a cytosine analog/substitute has an aminoethoxy moiety attached to the rigid 1,3-diazaphenoxazine-2-one scaffold (Lin et al., *Am. Chem. Soc.,* 120:8531-2, 1998).

Internucleoside Linkage Modifications

Another variable in the design of the present disclosure is the internucleoside linkage making up the phosphate backbone of the siRNA molecule. Although the natural RNA phosphate backbone may be employed here, derivatives thereof may be used which enhance desirable characteristics of the siRNA molecule. Although not limiting, of particular importance in the present disclosure is protecting parts, or the whole, of the siRNA molecule from hydrolysis. One example of a modification that decreases the rate of hydrolysis is phosphorothioates. Any portion or the whole of the backbone may contain phosphate substitutions (e.g., phosphorothioates). For instance, the internucleoside linkages may be between 0 and 100% phosphorothioate, e.g., between 0 and 100%, 10 and 100%, 20 and 100%, 30 and 100%, 40 and 100%, 50 and 100%, 60 and 100%, 70 and 100%, 80 and 100%, 90 and 100%, 0 and 90%, 0 and 80%, 0 and 70%, 0 and 60%, 0 and 50%, 0 and 40%, 0 and 30%, 0 and 20%, 0 and 10%, 10 and 90%, 20 and 80%, 30 and 70%, 40 and 60%, 10 and 40%, 20 and 50%, 30 and 60%, 40 and 70%, 50 and 80%, or 60 and 90% phosphorothioate linkages. Similarly, the internucleoside linkages may be between 0 and 100% phosphodiester linkages, e.g., between 0 and

100%, 10 and 100%, 20 and 100%, 30 and 100%, 40 and 100%, 50 and 100%, 60 and 100% 70 and 100%, 80 and 100%, 90 and 100%, 0 and 90%, 0 and 80%, 0 and 70%, 0 and 60%, 0 and 50%, 0 and 40%, 0 and 30%, 0 and 20%, 0 and 10%, 10 and 90%, 20 and 80%, 30 and 70%, 40 and 60%, 10 and 40%, 20 and 50%, 30 and 60%, 40 and 70%, 50 and 80%, or 60 and 90% phosphodiester linkages.

Specific examples of some potential siRNA molecules useful in this invention include oligonucleotides containing modified e.g., non-naturally occurring internucleoside linkages. As defined in this specification, oligonucleotides having modified internucleoside linkages include internucleoside linkages that retain a phosphorus atom and internucleoside linkages that do not have a phosphorus atom. For the purposes of this specification, and as sometimes referenced in the art, modified oligonucleotides that do not have a phosphorus atom in their internucleoside backbone can also be considered to be oligonucleosides. A preferred phosphorus containing modified internucleoside linkage is the phosphorothioate internucleoside linkage. In some embodiments, the modified oligonucleotide backbones containing a phosphorus atom therein include, for example, phosphorothioates, phosphorodithioates, phosphotriesters, aminoalkylphosphotriesters, methyl and other alkyl phosphonates including 3'-alkylene phosphonates, 5'-alkylene phosphonates, phosphinates, phosphoramidates including 3'-amino phosphoramidate and aminoalkylphosphoramidates, thionophosphoramidates, thionoalkylphosphonates, thionoalkylphosphotriesters, selenophosphates, and boranophosphates having normal 3'-5' linkages, 2'-5' linked analogs of these, and those having inverted polarity wherein one or more internucleotide linkages is a 3' to 3', 5' to 5' or 2' to 2' linkage. Exemplary U.S. patents describing the preparation of phosphorus-containing linkages include but are not limited to, U.S. Pat. Nos. 3,687,808; 4,469,863; 4,476,301; 5,023,243; 5,177,195; 5,188,897; 5,264,423; 5,276,019; 5,278,302; 5,286,717; 5,321,131; 5,399,676; 5,405,939; 5,453,496; 5,455,233; 5,466,677; 5,476,925; 5,519,126; 5,536,821; 5,541,316; 5,550,111; 5,563,253; 5,571,799; 5,587,361; 5,625,050; 6,028,188; 6,124,445; 6,160,109; 6,169,170; 6,172,209; 6,239,265; 6,277,603; 6,326,199; 6,346,614; 6,444,423; 6,531,590; 6,534,639; 6,608,035; 6,683,167; 6,858,715; 6,867,294; 6,878,805; 7,015,315; 7,041,816; 7,273,933; 7,321,029; and U.S. Pat. RE39464, the entire contents of each of which are hereby incorporated herein by reference.

In some embodiments, the modified oligonucleotide backbones that do not include a phosphorus atom therein have backbones that are formed by short chain alkyl or cycloalkyl internucleoside linkages, mixed heteroatom and alkyl or cycloalkyl internucleoside linkages, or one or more short chain heteroatomic or heterocyclic internucleoside linkages. These include those having morpholino linkages (formed in part from the sugar portion of a nucleoside); siloxane backbones; sulfide, sulfoxide and sulfone backbones; formacetyl and thioformacetyl backbones; methylene formacetyl and thioformacetyl backbones; riboacetyl backbones; alkene containing backbones; sulfamate backbones; methyleneimino and methylenehydrazino backbones; sulfonate and sulfonamide backbones; amide backbones; and others having mixed N, O, S and CH_2 component parts. Non-limiting examples of U.S. patents that teach the preparation of non-phosphorus backbones include, but are not limited to, U.S. Pat. Nos. 5,034,506; 5,166,315; 5,185,444; 5,214,134; 5,216,141; 5,235,033; 5,64,562; 5,264,564; 5,405,938; 5,434,257; 5,466,677; 5,470,967; 5,489,677; 5,541,307;

5,561,225; 5,596,086; 5,602,240; 5,608,046; 5,610,289; 5,618,704; 5,623,070; 5,663,312; 5,633,360; 5,677,437; and 5,677,439, the entire contents of each of which are hereby incorporated herein by reference.

Patterns of Modifications of siRNA Molecules

The following section provides a set of exemplary scaffolds into which the siRNA molecules of the disclosure may be incorporated.

In some embodiments of the disclosure, the siRNA may contain an antisense strand including a region represented by Formula I, wherein Formula I is, in the 5'-to-3' direction

$$A\text{-}B\text{-}(A')_j\text{-}C\text{-}P^2\text{-}D\text{-}P^1\text{-}(C'\text{-}P^1)_k\text{-}C'$$

Formula I;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$; each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$; B is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2$; each C is a 2'-O-methyl (2'-O-Me) ribonucleoside; each C', independently, is a 2'-O-Me ribonucleoside or a 2'-fluoro (2'-F) ribonucleoside; each D is a 2'-F ribonucleoside; each P^1 is a phosphorothioate internucleoside linkage; each P^2 is a phosphodiester internucleoside linkage; j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, j is 4. In some embodiments, k is 4. In some embodiments, j is 4 and k is 4. The antisense is complementary (e.g., fully or partially complementary) to a target nucleic acid sequence.

In some embodiments, the antisense strand includes a structure represented by Formula A1, wherein Formula A1 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-B-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-B-S-A

Formula A1;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the siRNA may contain an antisense strand including a region represented by Formula II, wherein Formula II is, in the 5'-to-3' direction:

$$A\text{-}B\text{-}(A')_j\text{-}C\text{-}P^2\text{-}D\text{-}P^1\text{-}(C\text{-}P^1)_k\text{-}C'$$

Formula II;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$; each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$; B is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2$; each C is a 2'-O-methyl (2'-O-Me) ribonucleoside; each C', independently, is a 2'-O-Me ribonucleoside or a 2'-fluoro (2'-F) ribonucleoside; each D is a 2'-F ribonucleoside; each P^1 is a phosphorothioate internucleoside linkage; each P^2 is a phosphodiester internucleoside linkage; j is an integer from 1 to 7 (e.g., 1, 2, 3,

4, 5, 6, or 7); and k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, j is 4. In some embodiments, k is 4. In some embodiments, j is 4 and k is 4. The antisense is complementary (e.g., fully or partially complementary) to a target nucleic acid sequence.

In some embodiments of the disclosure, the antisense strand includes a structure represented by Formula A2, wherein Formula A2 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-B-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-A-S-A

Formula A2;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula III, wherein Formula III is, in the 5'-to-3' direction:

$$E\text{-}(A')_m\text{-}F$$

Formula III;

wherein E is represented by the formula $(C\text{-}P^1)_2$; F is represented by the formula $(C\text{-}P^2)_3\text{-}D\text{-}P^1\text{-}C\text{-}P^1\text{-}C$, $(C\text{-}P^2)_3\text{-}D\text{-}P^2\text{-}C\text{-}P^2\text{-}C$, $(C\text{-}P^2)_3\text{-}D\text{-}P^1\text{-}C\text{-}P^1\text{-}D$, or $(C\text{-}P^2)_3\text{-}D\text{-}P^2\text{-}C\text{-}P^2\text{-}D$; A', C, D, P^1, and P^2 are as defined in Formula I; and m is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, m is 4. The sense strand is complementary (e.g., fully or partially complementary) to the antisense strand.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S1, wherein Formula S1 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-S-A-S-A

Formula S1;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S2, wherein Formula S2 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-O-A-O-A

Formula S2;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S3, wherein Formula S3 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-S-A-S-B

Formula S3;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S4, wherein Formula S4 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-O-A-O-B

Formula S4;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the siRNA may contain an antisense strand including a region represented by Formula IV, wherein Formula IV is, in the 5'-to-3' direction:

$$A\text{-}(A')_j\text{-}C\text{-}P^2\text{-}B\text{-}(C\text{-}P^1)_k\text{-}C'$$

Formula IV;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$; each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$; B is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1\text{-}D\text{-}P^1$; each C is a 2'-O-Me ribonucleoside; each C', independently, is a 2'-O-Me ribonucleoside or a 2'-F ribonucleoside; each D is a 2'-F ribonucleoside; each P^1 is a phosphorothioate internucleoside linkage; each P^2 is a phosphodiester internucleoside linkage; j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and k is an integer from 1 to7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, j is 6. In some embodiments, k is 4. In some embodiments, j is 6 and k is 4. The antisense strand is complementary (e.g., fully or partially complementary) to a target nucleic acid.

In some embodiments of the disclosure, the antisense strand includes a structure represented by Formula A3, wherein Formula A3 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-B-S-A-S-A-S-A

Formula A3;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the siRNA of the disclosure may have a sense strand represented by Formula V, wherein Formula V is, in the 5'-to-3' direction:

$$E\text{-}(A')_m\text{-}C\text{-}P^2\text{-}F$$

Formula V;

wherein E is represented by the formula $(C\text{-}P^1)_2$; F is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1\text{-}C$, $D\text{-}P^2\text{-}C\text{-}P^2\text{-}C$, $D\text{-}P^1\text{-}C\text{-}P^1\text{-}D$, or $D\text{-}P^2\text{-}C\text{-}P^2\text{-}D$; A', C, D, P^1, and P^2 are as defined in Formula IV; and m is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, m is 5. The sense strand is complementary (e.g., fully or partially complementary) to the antisense strand.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S5, wherein Formula S5 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A

Formula S5;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S6, wherein Formula S6 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A

Formula S6;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S7, wherein Formula S7 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-B

Formula S7;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S8, wherein Formula S8 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B

Formula S8;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the siRNA may contain an antisense strand including a region represented by Formula VI, wherein Formula VI is, in the 5'-to-3' direction:

$A\text{-}B_j\text{-}E\text{-}B_k\text{-}E\text{-}F\text{-}G_l\text{-}D\text{-}P^1\text{-}C'$

Formula VI;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$; each B is represented by the formula $C\text{-}P^2$; each C is a 2'-O-Me ribonucleoside; each C', independently, is a 2'-O-Me ribonucleoside or a 2'-F ribonucleoside; each D is a 2'-F ribonucleoside; each E is represented by the formula $D\text{-}P^2\text{-}C\text{-}P^2$; F is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1$; each G is represented by the formula $C\text{-}P^1$; each P^1 is a phosphorothioate internucleoside linkage; each P^2 is a phosphodiester internucleoside linkage; j is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); k is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and l is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, j is 3. In some embodiments, k is 6. In some embodiments, l is 2. In some embodiments, j is 3, k is 6, and l is 2. The antisense strand is complementary (e.g., fully or partially complementary) to a target nucleic acid.

In some embodiments of the disclosure, the antisense strand includes a structure represented by Formula A4, wherein Formula A4 is, in the 5'-to-3' direction:

A-S-B-S-A-O-A-O-A-O-B-O-A-O-A-O-A-O-A-O-A-O-A-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-B-S-A

Formula A4;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the siRNA may contain a sense strand including a region represented by Formula VII, wherein Formula VII is, in the 5'-to-3' direction:

$H\text{-}B_m\text{-}I_n\text{-}A'\text{-}B_o\text{-}H\text{-}C$

Formula VII;

wherein A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$; each H is represented by the formula $(C\text{-}P^1)_2$; each I is represented by the formula $(D\text{-}P^2)$; B, C, D, P^1, and P^2 are as defined in Formula VI; m is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); n is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7); and o is an integer from 1 to 7 (e.g., 1, 2, 3, 4, 5, 6, or 7). In some embodiments, m is 3. In some embodiments, n is 3. In some embodiments, o is 3. In some embodiments, m is 3, n is 3, and o is 3. The sense strand is complementary (e.g., fully or partially complementary) to the antisense strand.

In some embodiments of the disclosure, the sense strand includes a structure represented by Formula S9, wherein Formula S9 is, in the 5'-to-3' direction:

A-S-A-S-A-O-A-O-A-O-B-O-B-O-B-O-A-O-B-O-A-O-A-O-A-O-A-S-A-S-A

Formula S9;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

In some embodiments of the disclosure, the siRNA may contain an antisense strand including a region that is represented by Formula VIII:

$$Z\text{-}((A\text{-}P\text{-})_n(B\text{-}P\text{-})_m)_q;$$

Formula VIII

wherein Z is a 5' phosphorus stabilizing moiety; each A is a 2'-O-methyl (2′-O-Me) ribonucleoside; each B is a 2′-fluoro-ribonucleoside; each P is, independently, an internucleoside linkage selected from a phosphodiester linkage and a phosphorothioate linkage; n is an integer from 1 to 5 (e.g., 1, 2, 3, 4, or 5); m is an integer from 1 to 5 (e.g., 1, 2, 3, 4, or 5); and q is an integer between 1 and 30 (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30).

Methods of siRNA Synthesis

The siRNA molecules of the disclosure can be synthesized by standard methods known in the art as further discussed below, e.g., by use of an automated DNA synthesizer, such as are commercially available from, for example, Biosearch, Applied Biosystems, Inc.

The siRNA agent can be prepared using solution-phase or solid-phase organic synthesis or both. Organic synthesis offers the advantage that the oligonucleotide including unnatural or modified nucleotides can be easily prepared. siRNA molecules of the disclosure can be prepared using solution-phase or solid-phase organic synthesis or both.

Further, it is contemplated that for any siRNA agent disclosed herein, further optimization could be achieved by systematically either adding or removing linked nucleosides to generate longer or shorter sequences. Further still, such optimized sequences can be adjusted by, e.g., the introduction of modified nucleosides, and/or modified internucleoside linkages as described herein or as known in the art, including alternative nucleosides, alternative sugar moieties, and/or alternative internucleoside linkages as known in the art and/or discussed herein to further optimize the molecule (e.g., increasing serum stability or circulating half-life, increasing thermal stability, enhancing transmembrane delivery, and/or targeting to a particular location or cell type).

Divalent Cations

The siRNA molecules of the disclosure may contain one or more phosphodiester internucleoside linkages and/or an analog thereof, such as a phosphorothioate internucleoside linkage, in which oxyanion moieties are electrostatically neutralized by ionic bonding to a divalent metal cation, such as Ba^{2+}, Be^{2+}, Ca^{2+}, Cu^{2+}, Mg^{2+}, Mn^{2+}, Ni^{2+}, or Zn^{2+}.

The siRNA molecules of the disclosure may include a plurality of cationic binding sites (e.g., electron-dense sites) that are saturated by one or more divalent cations (e.g., Ba^{2+}, Be^{2+}, Ca^{2+}, Cu^{2+}, Mg^{2+}, Mn^{2+}, Ni^{2+}, or Zn^{2+}, or a combination thereof). Because of their positive charge, divalent cations are typically reactive with negatively charges atoms (e.g., oxyanion from a phosphate group or phosphorothioate group carrying a unit or partial negative charge).

The one or more divalent cations may have an ionic radius, when measured in the form of a crystal lattice, of about 30 picometers to about 150 picometers (e.g., from about 30 picometers to about 140 picometers, from about 40 picometers to about 130 picometers, from about 50 picometers to about 120 picometers, from about 60 picometers to about 110 picometers, from about 60 picometers to about 100 picometers, or from about 60 picometers to about 90 picometers). The calculated crystal radii of the divalent cations disclosed by R. D. Shannon, *Acta Crystallographica A.* 32:751-767, 1976, are herein incorporated by reference.

The degree of saturation of a siRNA molecule's cationic binding sites by the one or more divalent cations may range from about 10% to about 100% (e.g., from about 20% to about 100%, from about 30% to about 100%, from about 40% to about 100%, from about 50% to about 100%, from about 60% to about 100%, from about 70% to about 100%, from about 80% to about 100%, or from about 90% to about 100%).

In some embodiments, the antisense strand of the siRNA molecule may have a length of from 10 to 30 nucleotides and may be ionically bound to a total of from 10 to 30 divalent cations. For example, the molar ratio of antisense strand nucleotides to divalent cations in the siRNA molecule could range from 1:3 to 3:1 (e.g., 1:3, 1.1:3, 1.2:3, 1.3:3, 1.4:3, 1.5:3, 1.6:3, 1.7:3, 1.8:3, 1.9:3, 2:3, 2.1:3, 2.2:3, 2.3:3, 2.4:3, 2.5:3, 2.6:3, 2.7:3, 2.8:3, 2.9:3, 1:1, 3:2.9, 3:2.8, 3:2.7, 3:2.6, 3:2.5, 3:2.4, 3:2.3, 3:2.2, 3:2.1, 3:2, 3:1.9, 3:1.8, 3:1.7, 3:1.6, 3:1.5, 3:1.4, 3:1.3, 3:1.2, 3:1.1, or 3:1).

In some embodiments, the sense strand of the siRNA molecule may have a length of from 10 to 30 nucleotides and may be ionically bound to a total of from 10 to 30 divalent cations. For example, the molar ratio of sense strand nucleotides to divalent cations in the siRNA molecule could range from 1:3 to 3:1 (e.g., 1:3, 1.1:3, 1.2:3, 1.3:3, 1.4:3, 1.5:3, 1.6:3, 1.7:3, 1.8:3, 1.9:3, 2:3, 2.1:3, 2.2:3, 2.3:3, 2.4:3, 2.5:3, 2.6:3, 2.7:3, 2.8:3, 2.9:3, 1:1, 3:2.9, 3:2.8, 3:2.7, 3:2.6, 3:2.5, 3:2.4, 3:2.3, 3:2.2, 3:2.1, 3:2, 3:1.9, 3:1.8, 3:1.7, 3:1.6, 3:1.5, 3:1.4, 3:1.3, 3:1.2, 3:1.1, or 3:1).

The siRNA molecules of the disclosure may be combined with one or more divalent cations in a specific molar ratio. The specific molar ratio of siRNA molecule to divalent cation may be relevant to the toxicity benefit achieved by the divalent cation. For example, the molar ratio of siRNA molecule to divalent cation may range from 1:10 to 1:50 (e.g., 1:10, 1:11, 1:12, 1:13, 1:14, 1:15, 1:16, 1:17, 1:18, 1:19, 1:20, 1:21, 1:22, 1:23, 1:24, 1:25, 1:26, 1:27, 1:28, 1:29, 1:30, 1:31, 1:32, 1:33, 1:34, 1:35, 1:36, 1:37, 1:38, 1:39, 1:40. 1:41, 1:42, 1:43. 1:44, 1:45, 1:46, 1:47, 1:48, 1:49, or 1:50). In some embodiments, the molar ratio of siRNA molecule to divalent cation may range from 1:18 to 1:38 (e.g., 1:18, 1:19, 1:20, 1:21, 1:22, 1:23, 1:24, 1:25, 1:26, 1:27, 1:28, 1:29, 1:30, 1:31, 1:32, 1:33, 1:34, 1:35, 1:36, 1:37, or 1:38). In some embodiments, the molar ratio of siRNA molecule to divalent cation may range from 1:20 to 1:25 (e.g., 1:20, 1:21, 1:22, 1:23, 1:24, or 1:25). In some embodiments, the molar ratio of siRNA molecule to divalent cation may be 1:20. In some embodiments, the molar ratio of siRNA molecule to divalent cation may be 1:25.

The siRNA molecules of the disclosure may be combined with one or more divalent cations in which the divalent cation is present in a specific concentration or range of concentrations. The concentration of the divalent cation may be relevant to the toxicity benefit achieved by the divalent cation. For example, the concentration of the divalent cation may be from 20 mM to 150 mM (e.g.,20,

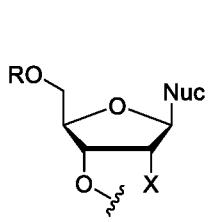
21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, or 150 mM). In some embodiments, the concentration of the divalent cation is from 20 mM to 100 mM (e.g., 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, or 100 mM). In some embodiments, the concentration of the divalent cation is from 35 mM to 75 mM (e.g., 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, or 75 mM). In some embodiments, the concentration of the divalent cation may be from 40 mM to 70 mM (e.g., 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, or 70 mM).

The siRNA molecule may include one or more atoms having a negative charge and the divalent cation may include a positive charge. In some embodiments, the siRNA molecule and divalent cation are present in an amount so that there is a specific ratio of negative to positive charge present within the composition. Methods of determining the negative to positive charge ratio are known in the art, for example, in Furst et al., *Electrophoresis.,* 37:2685-2691, 2016, the disclosure of which is hereby incorporated by reference. In some embodiments, the ratio of negative charge to positive charge is from 0.75 to 7.5 (e.g., 0.76, 0.77, 0.78, 0.79, 0.80, 0.81, 0.82, 0.83, 0.84, 0.85, 0.86, 0.87, 0.88, 0.89, 0.90, 0.91, 0.92, 0.93, 0.94, 0.95, 0.96, 0.97, 0.98, 0.99, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, or 7.5). In some embodiments, the ratio of negative charge to positive charge is from 1.0 to 2.0 (e.g., from 1.0 to 1.9, from 1.0 to 1.8, from 1.0 to 1.7, from 1.0 to 1.6, from 1.0 to 1.5, from 1.0 to 1.4, from 1.0 to 1.3, from 1.0 to 1.2, from 1.0 to 1.1, from 1.1 to 2.0, from 1.2 to 2.0, from 1.3 to 2.0, from 1.4 to 2.0, from 1.5 to 2.0, from 1.6 to 2.0, from 1.7 to 2.0, from 1.8 to 2.0, or from 1.9 to 2.0). In some embodiments, the ratio of negative charge to positive charge is from 0.75 to 6.5 (e.g., from 0.75 to 5.5, from 0.75 to 4.5, from 0.75 to 3.5, from 0.75 to 2.5, from 0.75 to 1.5, or from 0.75 to 1). In some embodiments, the ratio of negative charge to positive charge is from 1 to 7.5 (e.g., from 1.5 to 7.5, from 2.5 to 7.5, from 3.5 to 7.5, from 4.5 to 7.5, from 5.5 to 7.5, or from 6.5 to 7.5).

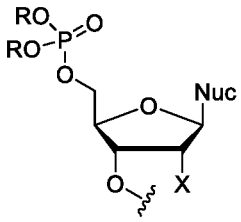
5′ Phosphorus Stabilizing Moieties

To further protect the siRNA molecules of this disclosure from degradation, a 5′-phosphorus stabilizing moiety may be employed. A 5′-phosphorus stabilizing moiety replaces the 5′-phosphate to prevent hydrolysis of the phosphate. Hydrolysis of the 5′-phosphate prevents binding to RISC, a necessary step in gene silencing. Any replacement for phosphate that does not impede binding to

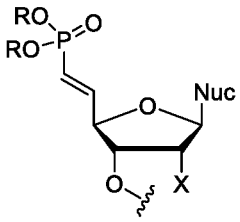
RISC is contemplated in this disclosure. In some embodiments, the replacement for the 5′-phosphate is also stable to *in vivo* hydrolysis. Each strand of a siRNA molecule may independently and optionally employ any suitable 5′-phosphorus stabilizing moiety.



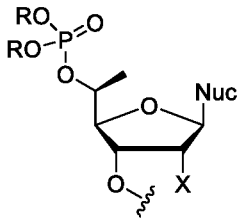
Formula IX



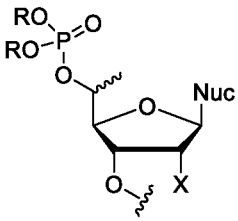
Formula X



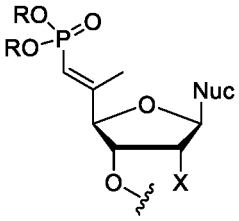
Formula XI



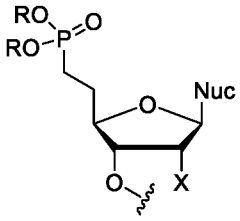
Formula XII



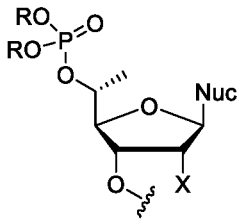
Formula XIII



Formula XIV



Formula XV



Formula XVI

Some exemplary endcaps are demonstrated in Formulas IX-XVI. Nuc in Formulas IX-XVI represents a nucleobase or nucleobase derivative or replacement as described herein. X in formula IX-XVI represents a 2'-modification as described herein. Some embodiments employ hydroxy as in Formula IX, phosphate as in Formula X, vinylphosphonates as in Formula XI and XIV, 5'-methyl-substitued phosphates as in Formula XII, XIII, and XVI, methylenephosphonates as in Formula XV, or vinyl 5′-vinylphsophonate as a 5′-phosphorus stabilizing moiety as demonstrated in Formula XI.

Hydrophobic Moieties

The present disclosure further provides siRNA molecules having one or more hydrophobic moieties attached thereto. The hydrophobic moiety may be covalently attached to the 5' end or the 3' end of the siRNA molecules of the disclosure. Non-limiting examples of hydrophobic moieties suitable for use with the siRNA molecules of the disclosure may include cholesterol, vitamin D, tocopherol, phosphatidylcholine (PC), docosahexaenoic acid, docosanoic acid, PC-docosanoic acid, eicosapentaenoic acid, lithocholic acid or any combination of the aforementioned hydrophobic moieties with PC.

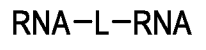
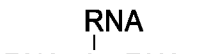
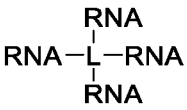
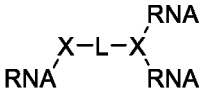
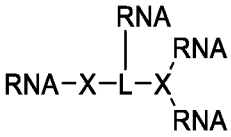
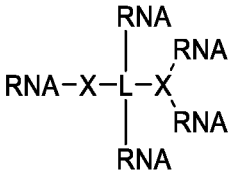
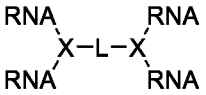
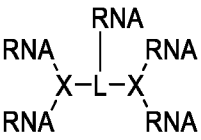
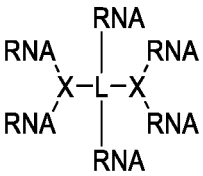
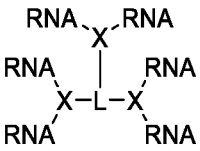
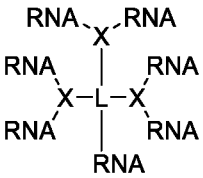
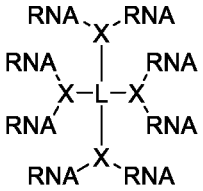
siRNA Branching

The siRNA molecules of the disclosure may be branched. For example, the siRNA molecules of the disclosure may have one of several branching patterns, as described herein.

According to the present disclosure, the siRNA molecules disclosed herein may be branched siRNA molecules. The siRNA molecule may not be branched, or may be di-branched, tri-branched, or tetra-branched, connected through a linker. Each main branch may be further branched to allow for 2,

3, 4, 5, 6, 7, or 8 separate RNA single- or double-strands. The branch points on the linker may stem from the same atom, or separate atoms along the linker. Some exemplary embodiments are listed in Table 2.

Table 2. Branched siRNA structures

Di-branched	Tri-branched	Tetra-branched
 Formula XVII	 Formula XX	 Formula XXIV
 Formula XVIII	 Formula XXI	 Formula XXV
 Formula XIX	 Formula XXII	 Formula XXVI
	 Formula XXIII	 Formula XXVII
		 Formula XXVIII

In some embodiments, the siRNA molecule is a branched siRNA molecule. In some embodiments, the branched siRNA molecule is di-branched, tri-branched, or tetra-branched. In some embodiments, the di-branched siRNA molecule is represented by any one of Formulas XVII-XIX, wherein each RNA, independently, is an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety (e.g., phosphoroamidite, tosylated solketal, 1,3-diaminopropanol, pentaerythritol, or any one of the branch point moieties described in US 10,478,503).

In some embodiments, the tri-branched siRNA molecule represented by any one of Formulas XX-XXIII, wherein each RNA, independently, is an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

In some embodiments, the tetra-branched siRNA molecule represented by any one of Formulas XXIV-XXVIII, wherein each RNA, independently, is an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

Linkers

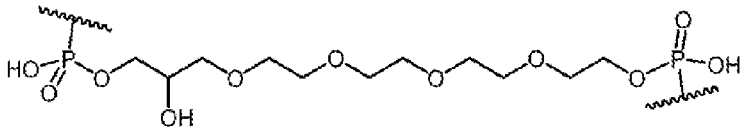
Multiple strands of siRNA described herein may be covalently attached by way of a linker. The effect of this branching improves, *inter alia*, cell permeability allowing better access into cells (e.g., neurons or glial cells) in the CNS. Any linking moiety may be employed which is not incompatible with the siRNAs of the present invention. Linkers include ethylene glycol chains of 2 to 10 subunits (e.g., 2, 3, 4, 5, 6, 7, 8, 9, or 10 subunits), alkyl chains, carbohydrate chains, block copolymers, peptides, RNA, DNA, and others. In some embodiments, any carbon or oxygen atom of the linker is optionally replaced with a nitrogen atom, bears a hydroxyl substituent, or bears an oxo substituent. In some embodiments, the linker is a poly-ethylene glycol (PEG) linker. The PEG linkers suitable for use with the disclosed compositions and methods include linear or non-linear PEG linkers. Examples of non-linear PEG linkers include branched PEGs, linear forked PEGs, or branched forked PEGs.

PEG linkers of various weights may be used with the disclosed compositions and methods. For example, the PEG linker may have a weight that is between 5 and 500 Daltons. In some embodiments, a PEG linker having a weight that is between 500 and 1,000 Dalton may be used. In some embodiments, a PEG linker having a weight that is between 1,000 and 10,000 Dalton may be used. In some embodiments, a PEG linker having a weight that is between 200 and 20,000 Dalton may be used. In some embodiments, the linker is covalently attached to a sense strand of the siRNA. In some embodiments, the linker is covalently attached to an antisense strand of the siRNA. In some embodiments, the PEG linker is a triethylene glycol (TrEG) linker. In some embodiments, the PEG linker is a tetraethylene glycol (TEG) linker.

In some embodiments, the linker is an alkyl chain linker. In some embodiments, the linker is a peptide linker. In some embodiments, the linker is an RNA linker. In some embodiments, the linker is a DNA linker.

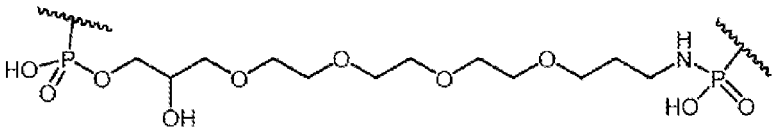
Linkers may covalently link 2, 3, 4, or 5 unique siRNA strands. The linker may covalently bind to any part of the siRNA oligomer. In some embodiments, the linker attaches to the 3′ end of nucleosides of each siRNA strand. In some embodiments, the linker attaches to the 5′ end of nucleosides of each siRNA strand. In some embodiments, the linker attaches to a nucleoside of an siRNA strand (e.g., sense or antisense strand) by way of a covalent bond-forming moiety. In some embodiments, the covalent-bond-forming moiety is selected from the group consisting of an alkyl, ester, amide, carbonate, carbamate, triazole, urea, formacetal, phosphonate, phosphate, and phosphate derivative (e.g., phosphorothioate, phosphoramidate, etc.).

In some embodiments, the linker has a structure of Formula L1:



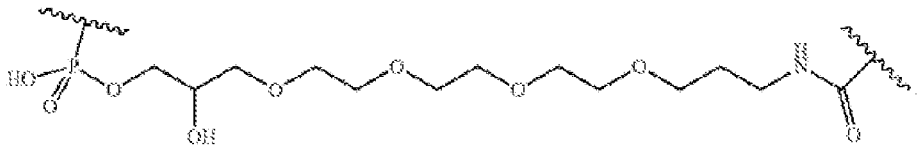
(**Formula L1**)

In some embodiments, the linker has a structure of Formula L2:



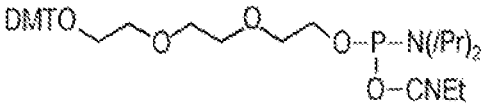
(**Formula L2**)

In some embodiments, the linker has a structure of Formula L3:



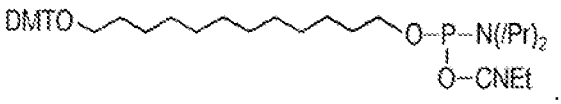
(**Formula L3**)

In some embodiments, the linker has a structure of Formula L4:



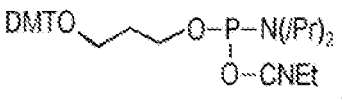
(**Formula L4**)

In some embodiments, the linker has a structure of Formula L5:



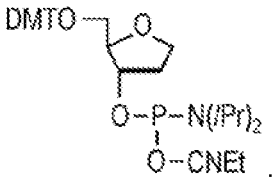
(**Formula L5**)

In some embodiments, the linker has a structure of Formula L6:



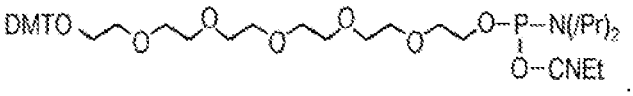
(**Formula L6**)

In some embodiments, the linker has a structure of Formula L7, as is shown below:



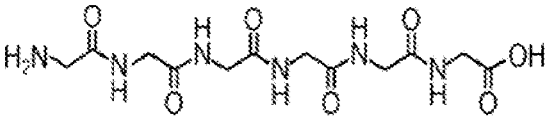
(**Formula L7**)

In some embodiments, the linker has a structure of Formula L8:



(**Formula L8**)

In some embodiments, the linker has a structure of Formula L9:



(**Formula L9**)

In some embodiments, the selection of a linker for use with one or more of the branched siRNA molecules disclosed herein may be based on the hydrophobicity of the linker, such that, e.g., desirable hydrophobicity is achieved for the one or more branched siRNA molecules of the disclosure. For example, a linker containing an alkyl chain may be used to increase the hydrophobicity of the branched siRNA molecule as compared to a branched siRNA molecule having a less hydrophobic linker or a hydrophilic linker.

The siRNA agents disclosed herein may be synthesized and/or modified by methods well established in the art, such as those described in Beaucage, S. L. et al. (edrs.), *Current Protocols in Nucleic Acid Chemistry*, John Wiley & Sons, Inc., New York, N.Y., 2000, which is hereby incorporated herein by reference.

Methods of Treatment

The *MSH3*-targeting siRNA molecules of the disclosure may be delivered to a subject, thereby treating a microsatellite repeat expansion disorder and/or mitigating phenotypes associated with the disorder. For example, the siRNA molecules may be delivered to a subject, thereby treating Huntington's disease and/or mitigating Huntington's disease associated phenotypes (e.g., movement disorders such as chorea and dystonia, cognitive impairments, and psychiatric disorders such as depression and anxiety). Alternatively, the *MSH3*-targeting siRNA molecules of the disclosure may be delivered to a subject, thereby treating myotonic dystrophy type 1 and/or mitigating myotonic dystrophy type 1-associated phenotypes (e.g., muscle wasting and weakness). As a further alternative, the *MSH*-targeting siRNA molecules of the disclosure may be delivered to a subject, thereby treating and mitigating the effects of spinocerebellar ataxias or any one of the many syndromes caused by expansions of DNA microsatellite repeats. Exemplary microsatellite repeat expansion disorders are described herein and discussed in Rodriguez et al., *Neurobiology of Disease,*

130:104515, 2019, the disclosure of which is incorporated herein by reference. Furthermore, the siRNA molecules of the disclosure may also be delivered to a subject having a variant of the *MSH3* gene for which siRNA-mediated gene silencing of the *MSH3* variant gene reduces the expression level of *MSH3* transcript, thereby treating Huntington's Disease, myotonic dystrophies, spinocerebellar ataxias, or another microsatellite repeat expansion disorder.

The disclosure provides methods of treating a subject by way of *MSH3* gene silencing with one or more of the siRNA molecules described herein. The gene silencing may be performed in a subject to silence wild type *MSH3* transcripts, mutant *MSH3* transcripts, splice isoforms of *MSH3* transcripts, and/or overexpressed *MSH3* transcripts thereof, relative to a healthy subject. The method may include delivering to the CNS or affected tissues of the subject (e.g., a human) the siRNA molecules of the disclosure or a pharmaceutical composition containing the same by any appropriate route of administration (e.g., intracerebroventricular, intrathecal injection, intrastriatal injection, intra-cisterna magna injection by catheterization, intraparenchymal injection, intravenous injection, subcutaneous injection, or intramuscular injection). The active compound can be administered in any suitable dose. The actual dosage amount of a composition of the present disclosure administered to a patient can be determined by physical and physiological factors such as body weight, severity of condition, previous or concurrent therapeutic interventions, idiopathy of the patient and on the route of administration. Depending upon the dosage and the route of administration, the number of administrations of a preferred dosage and/or an effective amount may vary according to the response of the subject. The practitioner responsible for administration will, in any event, determine the concentration of active ingredient(s) in a composition and appropriate dose(s) for the individual subject. Administration may occur any suitable number of times per day, and for as long as necessary. Subjects may be adult or pediatric humans, with or without comorbid diseases.

Selection of Subjects

Subjects that may be treated with the siRNA molecules disclosed herein are subjects in need of treatment of, for example, a microsatellite repeat expansion disorder, such as Huntington's Disease, and/or any other medical risk(s) associated with DNA microsatellite repeat expansions or a gain of function mutation in the *MSH3* gene. Subjects that may be treated with the siRNA molecules disclosed herein may include, for example, humans, monkeys, rats, mice, pigs, and other mammals containing at least one orthologous copy of the *MSH3* gene. Subjects may be adult or pediatric humans, with or without comorbid diseases.

Pharmaceutical Compositions

The siRNA molecules in the present disclosure may be formulated into a pharmaceutical composition for administration to a subject in a biologically compatible form suitable for administration *in vivo*. Accordingly, the present disclosure provides a pharmaceutical composition containing a siRNA molecule of the disclosure in admixture with a suitable diluent, carrier, or excipient. The siRNA molecules may be administered, for example, directly into the CNS or affected tissues of the subject (e.g., by way of intracerebroventricular, intrastriatally, intrathecal injection, intra-cisterna magna

injection by catheterization, intraparenchymal injection, intravenous injection, subcutaneous injection, or intramuscular injection).

Conventional procedures and ingredients for the selection and preparation of suitable formulations are described, for example, in Remington, J.P. *The Science and Practice of Pharmacy*, Easton, PA. Mack Publishers, 2012, 22nd ed. and in The United States Pharmacopeial Convention, *The National Formulary*, United States Pharmacopeial, 2015, USP 38 NF 33).

Under ordinary conditions of storage and use, a pharmaceutical composition may contain a preservative, e.g., to prevent the growth of microorganisms. Pharmaceutical compositions may include sterile aqueous solutions, dispersions, or powders, e.g., for the extemporaneous preparation of sterile solutions or dispersions. In all cases the form may be sterilized using techniques known in the art and may be fluidized to the extent that may be easily administered to a subject in need of treatment.

A pharmaceutical composition may be administered to a subject, e.g., a human subject, alone or in combination with pharmaceutically acceptable carriers, as noted herein, the proportion of which may be determined by the solubility and/or chemical nature of the compound, chosen route of administration, and standard pharmaceutical practice.

Dosing Regimens

A physician having ordinary skill in the art can readily determine an effective amount of the siRNA molecule for administration to a mammalian subject (e.g., a human) in need thereof. For example, a physician could start prescribing doses of one the siRNA molecules of the disclosure at levels lower than that required to achieve the desired therapeutic effect and gradually increase the dosage until the desired effect is achieved. Alternatively, a physician may begin a treatment regimen by administering one of the siRNA molecules of the disclosure at a high dose and subsequently administer progressively lower doses until reaching a minimal dosage at which a therapeutic effect is achieved (e.g., a reduction in expression of a target gene sequence). In general, a suitable daily dose of one of the siRNA molecules of the disclosure will be an amount of the siRNA molecule which is the lowest dose effective to produce a therapeutic effect. The ss- or ds-siRNA molecules of the disclosure may be administered by injection, e.g., intrathecally, intracerebroventricularly, by intra-cisterna magna injection by catheterization, intraparenchymally, intravenously, subcutaneously, or intramuscularly. A daily dose of a therapeutic composition of the siRNA molecules of the disclosure may be administered as a single dose or as two, three, four, five, six or more doses administered separately at appropriate intervals throughout the day, week, month, or year, optionally, in unit dosage forms. While it is possible for the siRNA molecules of the disclosure to be administered alone, it may also be administered as a pharmaceutical formulation in combination with excipients, carriers, and optionally, additional therapeutic agents.

Routes of Administration

The method of the disclosure contemplates any route of administration tolerated by the therapeutic composition. Some embodiments of the method include injection intrathecally,

intracerebroventricularly, intrastriatally, intraparenchymally, or by intra-cisterna magna injection by catheterization.

Intrathecal injection is the direct injection into the spinal column or subarachnoid space. By injecting directly into the CSF of the spinal column the siRNA molecules of the disclosure have direct access to cells (e.g., neurons and glial cells) in the spinal column and a route to access the cells in the brain by bypassing the blood brain barrier.

Intracerebroventricular (ICV) injection is a method to directly inject into the CSF of the cerebral ventricles. Similar to intrathecal injection, ICV is a method of injection which bypasses the blood brain barrier. Using ICV allows the advantage of access to the cells of the brain and spinal column without the danger of the therapeutic being degraded in the blood.

Intrastriatal injection is the direct injection into the striatum, or corpus striatum. The striatum is an area in the subcortical basal ganglia in the brain. Injecting into the striatum bypasses the blood brain barrier and the pharmacokinetic challenges of injection into the blood stream and allows for direct access to the cells of the brain.

Intraparenchymal administration is the direct injection into the parenchyma (e.g., the brain parenchyma). Injection into the brain parenchyma allows for injection directly into brain regions affected by a disease or disorder while bypassing the blood brain barrier.

Intra-cisterna magna injection by catheterization is the direct injection into the cisterna magna. The cisterna magna is the area of the brain located between the cerebellum and the dorsal surface of the medulla oblongata. Injecting into the cisterna magna results in more direct delivery to the cells of the cerebellum, brainstem, and spinal cord.

In some embodiments of the methods described herein, the therapeutic composition may be delivered to the subject by way of systemic administration, e.g., intravenously, intramuscularly, or subcutaneously.

Intravenous (IV) injection is a method to directly inject into the bloodstream of a subject. The IV administration may be in the form of a bolus dose or by way of continuous infusion, or any other method tolerated by the therapeutic composition.

Intramuscular (IM) injection is injection into a muscle of a subject, such as the deltoid muscle or gluteal muscle. IM may allow for rapid absorption of the therapeutic composition.

Subcutaneous injection is injection into subcutaneous tissue. Absorption of compositions delivered subcutaneously may be slower than IV or IM injection, which may be beneficial for compositions requiring continuous absorption.

Examples

The following examples are put forth so as to provide those of ordinary skill in the art with a description of how the compositions and methods described herein may be used, made, and evaluated, and are intended to be purely exemplary of the disclosure and are not intended to limit the scope of what the inventors regard as their disclosure.

Example 1. *MSH3* Knockdown

Objective

This Example describes the results of a series of experiments undertaken to investigate the ability of siRNA molecules complementary to specific regions within a human *MSH3* mRNA transcript to effectuate reduced expression of the *MSH3* gene.

Materials and Methods

MeWo cells (metastatic malignant melanoma cells, ATCC cat# HTB-65) were seeded at 30,000 cells per well in a 96-well tissue culture plate in Modified Eagle's Medium alpha (MEM-alpha) with 6% fetal bovine serum without antibiotics or antimycotics. An equal volume of siRNA at either 4 μM or 1 μM in serum-free Opti-MEM was added to the cells, resulting in a final assay condition of 3% fetal bovine serum and either 2 μM or 0.5 μM siRNA. Non-siRNA treated cells (untreated) exposed to the same media composition were used as controls. Cells were grown in a standard cell culture incubator at 37°C. and 5% CO_2. At 72 hours after siRNA treatment, the TaqMan Fast Advanced Cells-to-CT Kit (Thermo) was used to lyse all cells, digest the genomic DNA, perform reverse-transcription on the resulting RNA, and perform quantitative polymerase chain reaction (qPCR) on the resulting cDNA. Exon spanning MSH3-specific primer/probes (Thermo) were multiplexed with primer/probes for a housekeeping gene (ATP5B, Thermo), and all reactions were run on a Quantstudio 7 Flex (Thermo). MSH3 mRNA expression was calculated relative to untreated control cells using the delta-delta-Ct method. Biological duplicates and technical (qPCR) duplicates were run for each condition, and all results are expressed as the mean of all technical and biological duplicates, and as residual mRNA expression as a percent of untreated control cells.

Results

Cells were treated with an siRNA molecule of the disclosure having an antisense strand and a sense strand as shown in Tables 3 and 4, below. The knockdown efficiency of the siRNA molecule was measured as the residual mRNA expression as a percent of untreated at 2 μM and 0.5 μM. The knockdown results are reported in Table 3 (2 μM) and Table 4 (0.5 μM).

Table 3. *MSH3* knockdown with siRNA molecules of the disclosure at 2 μM

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
409	817	79.71	613	1021	99.09
410	818	71.48	614	1022	83.60
411	819	57.49	615	1023	70.01
412	820	98.66	616	1024	52.20
413	821	37.54	617	1025	46.48
414	822	67.50	618	1026	70.49

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
415	823	53.76	619	1027	64.25
416	824	65.76	620	1028	62.01
417	825	57.11	621	1029	55.97
418	826	62.49	622	1030	83.59
419	827	103.15	623	1031	62.21
420	828	105.86	624	1032	53.05
421	829	52.04	625	1033	49.31
422	830	75.11	626	1034	64.53
423	831	94.35	627	1035	104.06
424	832	78.95	628	1036	90.15
425	833	46.45	629	1037	89.89
426	834	46.61	630	1038	103.08
427	835	50.45	631	1039	97.36
428	836	59.60	632	1040	81.76
429	837	52.48	633	1041	96.45
430	838	60.31	634	1042	75.79
431	839	69.64	635	1043	61.02
432	840	90.76	636	1044	99.23
433	841	56.73	637	1045	68.90
434	842	80.17	638	1046	96.66
435	843	54.32	639	1047	42.03
436	844	58.78	640	1048	54.92
437	845	57.20	641	1049	53.71
438	846	91.48	642	1050	55.07
439	847	99.44	643	1051	79.82
440	848	84.66	644	1052	75.00
441	849	44.81	645	1053	78.96
442	850	67.08	646	1054	63.34
443	851	58.85	647	1055	108.68
444	852	86.94	648	1056	83.29
445	853	112.90	649	1057	68.90
446	854	82.09	650	1058	89.59
447	855	97.11	651	1059	85.62
448	856	72.82	652	1060	90.10
449	857	49.91	653	1061	94.65
450	858	43.33	654	1062	104.42
451	859	51.85	655	1063	87.09
452	860	42.73	656	1064	103.27

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
453	861	54.19	657	1065	58.93
454	862	59.81	658	1066	75.45
455	863	67.51	659	1067	76.61
456	864	82.02	660	1068	54.92
457	865	70.78	661	1069	63.94
458	866	76.71	662	1070	74.26
459	867	65.61	663	1071	64.29
460	868	61.29	664	1072	73.77
461	869	55.52	665	1073	99.95
462	870	76.27	666	1074	94.59
463	871	70.81	667	1075	54.39
464	872	50.19	668	1076	94.02
465	873	74.56	669	1077	89.46
466	874	82.97	670	1078	72.55
467	875	69.95	671	1079	66.46
468	876	65.28	672	1080	81.74
469	877	81.10	673	1081	59.50
470	878	49.85	674	1082	80.86
471	879	72.75	675	1083	101.55
472	880	74.21	676	1084	81.57
473	881	85.74	677	1085	94.93
474	882	73.75	678	1086	89.57
475	883	81.86	679	1087	54.96
476	884	75.36	680	1088	93.29
477	885	73.92	681	1089	58.71
478	886	50.32	682	1090	70.33
479	887	84.02	683	1091	63.98
480	888	78.30	684	1092	84.47
481	889	59.83	685	1093	82.48
482	890	64.15	686	1094	89.31
483	891	77.19	687	1095	60.46
484	892	53.36	688	1096	59.77
485	893	50.10	689	1097	63.76
486	894	73.70	690	1098	79.95
487	895	60.81	691	1099	82.48
488	896	56.12	692	1100	51.20
489	897	65.98	693	1101	53.67
490	898	53.98	694	1102	69.30

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
491	899	53.69	695	1103	86.24
492	900	51.98	696	1104	71.71
493	901	100.25	697	1105	66.21
494	902	78.42	698	1106	57.48
495	903	58.87	699	1107	45.06
496	904	48.63	700	1108	68.92
497	905	52.86	701	1109	51.70
498	906	64.19	702	1110	45.48
499	907	67.25	703	1111	66.77
500	908	81.16	704	1112	76.64
501	909	54.58	705	1113	90.16
502	910	67.87	706	1114	91.76
503	911	91.69	707	1115	67.83
504	912	47.65	708	1116	107.98
505	913	66.15	709	1117	126.83
506	914	85.73	710	1118	92.48
507	915	68.10	711	1119	107.20
508	916	91.63	712	1120	74.13
509	917	91.68	713	1121	63.09
510	918	52.11	714	1122	66.13
511	919	53.71	715	1123	54.88
512	920	63.69	716	1124	52.78
513	921	51.55	717	1125	90.02
514	922	58.13	718	1126	78.54
515	923	60.12	719	1127	114.14
516	924	53.69	720	1128	80.97
517	925	54.26	721	1129	79.12
518	926	69.21	722	1130	94.49
519	927	62.27	723	1131	49.19
520	928	68.71	724	1132	70.61
521	929	52.53	725	1133	46.40
522	930	63.53	726	1134	44.40
523	931	79.42	727	1135	79.07
524	932	73.47	728	1136	96.00
525	933	58.95	729	1137	60.78
526	934	81.77	730	1138	72.12
527	935	78.49	731	1139	68.20
528	936	98.91	732	1140	66.94

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
529	937	81.68	733	1141	85.64
530	938	68.35	734	1142	78.77
531	939	58.51	735	1143	69.33
532	940	85.78	736	1144	111.13
533	941	52.76	737	1145	66.06
534	942	46.68	738	1146	62.89
535	943	54.05	739	1147	79.78
536	944	71.73	740	1148	71.67
537	945	44.89	741	1149	70.72
538	946	43.26	742	1150	62.73
539	947	55.17	743	1151	79.43
540	948	55.40	744	1152	107.08
541	949	68.45	745	1153	64.96
542	950	92.75	746	1154	63.22
543	951	100.48	747	1155	66.68
544	952	107.19	748	1156	88.00
545	953	82.62	749	1157	82.10
546	954	87.97	750	1158	72.87
547	955	96.21	751	1159	63.09
548	956	89.30	752	1160	105.79
549	957	73.09	753	1161	98.46
550	958	82.96	754	1162	65.79
551	959	83.71	755	1163	97.10
552	960	68.42	756	1164	99.02
553	961	66.12	757	1165	70.49
554	962	90.78	758	1166	63.81
555	963	87.65	759	1167	61.81
556	964	68.41	760	1168	79.67
557	965	66.48	761	1169	57.12
558	966	54.95	762	1170	68.75
559	967	90.47	763	1171	58.57
560	968	49.85	764	1172	58.15
561	969	51.03	765	1173	83.25
562	970	56.88	766	1174	94.88
563	971	61.04	767	1175	57.79
564	972	36.30	768	1176	57.47
565	973	60.75	769	1177	55.73
566	974	35.83	770	1178	42.24

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
567	975	69.60	771	1179	71.62
568	976	55.74	772	1180	102.18
569	977	39.69	773	1181	62.32
570	978	67.71	774	1182	84.18
571	979	76.56	775	1183	59.04
572	980	53.45	776	1184	59.38
573	981	86.90	777	1185	103.57
574	982	47.04	778	1186	71.30
575	983	61.96	779	1187	70.66
576	984	47.35	780	1188	71.49
577	985	46.14	781	1189	92.59
578	986	61.29	782	1190	101.31
579	987	69.36	783	1191	83.54
580	988	73.60	784	1192	75.05
581	989	65.91	785	1193	73.80
582	990	65.69	786	1194	67.84
583	991	70.98	787	1195	83.47
584	992	71.46	788	1196	70.13
585	993	39.19	789	1197	64.43
586	994	49.35	790	1198	69.35
587	995	67.84	791	1199	69.76
588	996	55.19	792	1200	82.56
589	997	58.84	793	1201	70.80
590	998	68.46	794	1202	68.86
591	999	47.97	795	1203	72.63
592	1000	56.13	796	1204	73.36
593	1001	56.84	797	1205	73.87
594	1002	59.13	798	1206	82.09
595	1003	71.73	799	1207	74.84
596	1004	63.92	800	1208	77.65
597	1005	83.57	801	1209	68.04
598	1006	52.75	802	1210	79.74
599	1007	58.26	803	1211	71.54
600	1008	75.40	804	1212	98.64
601	1009	57.99	805	1213	76.58
602	1010	49.36	806	1214	71.30
603	1011	91.99	807	1215	77.80
604	1012	56.14	808	1216	91.63

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 2μM
605	1013	51.87	809	1217	108.13
606	1014	65.15	810	1218	101.54
607	1015	73.40	811	1219	81.90
608	1016	65.72	812	1220	86.96
609	1017	110.38	813	1221	77.45
610	1018	103.03	814	1222	81.28
611	1019	106.90	815	1223	73.28
612	1020	107.16	816	1224	70.08

Table 4. *MSH3* knockdown with siRNA molecules of the disclosure at 0.5 μM

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM
409	817	106.60	613	1021	110.95
410	818	91.38	614	1022	83.32
411	819	81.97	615	1023	86.80
412	820	111.01	616	1024	71.75
413	821	57.28	617	1025	73.68
414	822	95.80	618	1026	77.14
415	823	89.32	619	1027	91.42
416	824	92.49	620	1028	98.34
417	825	88.58	621	1029	80.63
418	826	88.15	622	1030	105.56
419	827	111.33	623	1031	67.47
420	828	114.43	624	1032	65.65
421	829	78.55	625	1033	52.97
422	830	83.20	626	1034	86.79
423	831	104.02	627	1035	99.31
424	832	99.33	628	1036	96.45
425	833	71.85	629	1037	90.74
426	834	54.84	630	1038	106.32
427	835	68.66	631	1039	111.00
428	836	76.46	632	1040	76.82
429	837	87.86	633	1041	110.51
430	838	75.89	634	1042	96.40
431	839	97.10	635	1043	90.74

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM
432	840	113.52	636	1044	106.79
433	841	76.31	637	1045	79.07
434	842	79.59	638	1046	109.88
435	843	88.62	639	1047	73.85
436	844	70.46	640	1048	97.72
437	845	91.44	641	1049	74.53
438	846	109.11	642	1050	73.58
439	847	92.58	643	1051	100.37
440	848	80.69	644	1052	97.16
441	849	76.47	645	1053	88.22
442	850	78.63	646	1054	67.62
443	851	90.36	647	1055	107.80
444	852	99.71	648	1056	100.38
445	853	110.44	649	1057	83.87
446	854	100.23	650	1058	91.96
447	855	91.27	651	1059	103.82
448	856	97.87	652	1060	93.18
449	857	93.03	653	1061	99.64
450	858	76.70	654	1062	108.08
451	859	75.71	655	1063	91.19
452	860	62.06	656	1064	94.15
453	861	83.82	657	1065	85.19
454	862	100.20	658	1066	92.38
455	863	88.36	659	1067	97.61
456	864	99.25	660	1068	71.59
457	865	96.99	661	1069	72.06
458	866	98.53	662	1070	89.32
459	867	94.89	663	1071	70.54
460	868	91.31	664	1072	87.27
461	869	87.34	665	1073	101.59
462	870	68.39	666	1074	83.85
463	871	79.70	667	1075	61.54
464	872	77.37	668	1076	98.88
465	873	79.48	669	1077	122.82
466	874	99.77	670	1078	89.96
467	875	101.18	671	1079	93.69
468	876	81.61	672	1080	104.02

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM
469	877	79.70	673	1081	70.44
470	878	71.42	674	1082	95.60
471	879	104.14	675	1083	101.74
472	880	82.01	676	1084	100.23
473	881	89.26	677	1085	104.86
474	882	100.12	678	1086	94.93
475	883	113.04	679	1087	71.97
476	884	103.38	680	1088	88.84
477	885	78.43	681	1089	86.82
478	886	76.80	682	1090	90.50
479	887	75.48	683	1091	76.45
480	888	96.02	684	1092	88.29
481	889	87.69	685	1093	88.49
482	890	79.88	686	1094	101.01
483	891	94.05	687	1095	71.63
484	892	79.37	688	1096	71.79
485	893	87.45	689	1097	75.00
486	894	85.13	690	1098	100.67
487	895	71.05	691	1099	87.34
488	896	89.13	692	1100	59.12
489	897	85.22	693	1101	76.82
490	898	76.98	694	1102	91.01
491	899	75.90	695	1103	105.39
492	900	68.93	696	1104	76.67
493	901	100.54	697	1105	115.83
494	902	86.36	698	1106	65.57
495	903	84.43	699	1107	67.04
496	904	58.35	700	1108	87.74
497	905	61.41	701	1109	70.12
498	906	78.73	702	1110	57.74
499	907	77.32	703	1111	95.21
500	908	81.41	704	1112	92.85
501	909	65.25	705	1113	94.98
502	910	86.56	706	1114	92.90
503	911	93.27	707	1115	87.04
504	912	75.33	708	1116	107.86
505	913	83.07	709	1117	107.45

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM
506	914	86.66	710	1118	103.78
507	915	75.71	711	1119	108.86
508	916	99.40	712	1120	90.01
509	917	94.00	713	1121	54.44
510	918	69.43	714	1122	84.26
511	919	73.17	715	1123	53.33
512	920	79.61	716	1124	85.37
513	921	73.21	717	1125	92.38
514	922	67.67	718	1126	95.92
515	923	70.66	719	1127	94.69
516	924	74.20	720	1128	92.61
517	925	79.86	721	1129	111.25
518	926	84.20	722	1130	120.34
519	927	80.05	723	1131	69.15
520	928	83.95	724	1132	77.09
521	929	64.03	725	1133	62.79
522	930	81.25	726	1134	61.40
523	931	91.81	727	1135	75.81
524	932	80.77	728	1136	88.14
525	933	80.91	729	1137	94.56
526	934	86.91	730	1138	80.12
527	935	98.00	731	1139	122.12
528	936	100.59	732	1140	100.63
529	937	95.16	733	1141	137.86
530	938	93.38	734	1142	84.96
531	939	83.26	735	1143	82.41
532	940	93.89	736	1144	102.07
533	941	79.06	737	1145	79.28
534	942	65.76	738	1146	88.70
535	943	73.94	739	1147	94.56
536	944	70.60	740	1148	84.26
537	945	69.82	741	1149	75.88
538	946	75.67	742	1150	80.08
539	947	74.41	743	1151	100.19
540	948	84.16	744	1152	104.19
541	949	74.98	745	1153	80.12
542	950	99.60	746	1154	90.86

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM
543	951	105.74	747	1155	78.24
544	952	108.40	748	1156	100.07
545	953	99.15	749	1157	99.73
546	954	97.13	750	1158	92.14
547	955	103.19	751	1159	74.79
548	956	94.19	752	1160	101.44
549	957	74.11	753	1161	95.43
550	958	95.53	754	1162	72.49
551	959	91.29	755	1163	98.63
552	960	87.63	756	1164	97.39
553	961	83.68	757	1165	92.31
554	962	88.08	758	1166	66.14
555	963	91.77	759	1167	81.59
556	964	95.50	760	1168	101.57
557	965	82.47	761	1169	76.73
558	966	60.85	762	1170	80.29
559	967	107.81	763	1171	79.24
560	968	103.82	764	1172	82.98
561	969	83.38	765	1173	100.86
562	970	82.95	766	1174	103.00
563	971	106.95	767	1175	83.89
564	972	80.11	768	1176	84.24
565	973	86.68	769	1177	69.27
566	974	54.48	770	1178	66.23
567	975	89.37	771	1179	98.28
568	976	72.72	772	1180	104.11
569	977	59.06	773	1181	78.20
570	978	83.77	774	1182	85.88
571	979	83.27	775	1183	72.31
572	980	69.77	776	1184	121.83
573	981	127.93	777	1185	119.11
574	982	70.21	778	1186	87.85
575	983	113.37	779	1187	88.59
576	984	91.72	780	1188	90.80
577	985	89.88	781	1189	106.77
578	986	95.96	782	1190	104.98
579	987	90.25	783	1191	91.77

Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM	Sense SEQ ID NO:	Antisense SEQ ID NO:	Residual mRNA expression (% of untreated) at 0.5 μM
580	988	96.81	784	1192	89.42
581	989	83.64	785	1193	83.93
582	990	108.91	786	1194	80.78
583	991	88.20	787	1195	92.86
584	992	77.01	788	1196	72.89
585	993	72.20	789	1197	88.08
586	994	91.58	790	1198	75.66
587	995	138.65	791	1199	80.93
588	996	78.65	792	1200	81.20
589	997	83.41	793	1201	91.38
590	998	89.23	794	1202	80.11
591	999	72.63	795	1203	77.43
592	1000	89.82	796	1204	81.19
593	1001	71.98	797	1205	86.25
594	1002	73.32	798	1206	90.22
595	1003	89.67	799	1207	91.62
596	1004	85.73	800	1208	94.68
597	1005	95.90	801	1209	76.04
598	1006	70.61	802	1210	90.74
599	1007	79.40	803	1211	81.58
600	1008	93.18	804	1212	100.77
601	1009	80.30	805	1213	84.17
602	1010	75.47	806	1214	88.63
603	1011	99.56	807	1215	95.86
604	1012	80.18	808	1216	95.96
605	1013	63.43	809	1217	95.17
606	1014	53.78	810	1218	89.06
607	1015	80.72	811	1219	73.14
608	1016	87.67	812	1220	81.30
609	1017	104.80	813	1221	81.14
610	1018	101.59	814	1222	84.53
611	1019	107.72	815	1223	77.04
612	1020	98.99	816	1224	83.46

Example 2. IC50 Determination of *MSH3*-targeting siRNA Molecules

Objective

This Example describes the results of a series of experiments undertaken to determine the IC50 of siRNA molecules complementary to specific regions within a human *MSH3* mRNA.

Materials and Methods

MeWo cells (metastatic malignant melanoma cells, ATCC cat# HTB-65) were actively transfected at concentrations of 1 fM to 100 nM using 0.05% RNAiMax as the transfection reagent. Non-siRNA treated cells (untreated) exposed to the same media composition were used as controls. Cells were grown in a standard cell culture incubator at 37°C. and 5% CO_2. At 72 hours after siRNA treatment, the TaqMan Fast Advanced Cells-to-CT Kit (Thermo) was used to lyse all cells, digest the genomic DNA, perform reverse-transcription on the resulting RNA, and perform quantitative polymerase chain reaction (qPCR) on the resulting cDNA. Exon spanning MSH3-specific primer/probes (Thermo) were multiplexed with primer/probes for a housekeeping gene (ATP5B, Thermo), and all reactions were run on a Quantstudio 7 Flex (Thermo). MSH3 mRNA expression was calculated relative to untreated control cells using the delta-delta-Ct method. Biological duplicates and technical (qPCR) duplicates were run for each condition, and all results are expressed as the mean of all technical and biological duplicates, and as residual mRNA expression as a percent of untreated control cells.

Results

Cells were treated with an siRNA molecule of the disclosure having an antisense strand and a sense strand as shown in Table 5, below. The IC50 was calculated and the knockdown results are reported in Table 5.

Table 5. IC50 of *MSH3*-Targeting siRNA Molecules

Sense SEQ ID NO:	Antisense SEQ ID NO:	IC50 (pM)	Sense SEQ ID NO:	Antisense SEQ ID NO:	IC50 (pM)
413	821	55.45	574	982	1.78
425	833	120.10	585	993	22.67
426	834	58.99	591	999	7.11
427	835	87.66	601	1009	111.20
428	836	165.80	602	1010	10.57
441	849	5.50	604	1012	7.17
450	858	71.32	605	1013	1.13
452	860	79.12	610	1018	2150.00
510	918	78.53	617	1025	4.88
511	919	116.90	625	1033	8.69
513	921	63.72	639	1047	45.54
514	922	38.53	679	1087	198.60

Sense SEQ ID NO:	Antisense SEQ ID NO:	IC50 (pM)	Sense SEQ ID NO:	Antisense SEQ ID NO:	IC50 (pM)
516	924	32.86	681	1089	148.50
517	925	24.82	699	1107	40.16
521	929	34.45	702	1110	104.30
534	942	4.20	713	1121	44.80
537	945	28.78	715	1123	14.33
538	946	66.17	725	1133	24.90
566	974	28.35	726	1134	109.40
569	977	20.68	770	1178	22.15

Example 3. *In vivo* inhibition of *MSH3* gene expression using di-siRNA sequence variants in mouse

In vivo administration of di-siRNA

12 siRNA sequences targeting *MSH3* were synthesized as di-siRNAs having the structure of Formula XVII. Test articles are shown in Table 6, below.

Table 6. *MSH3*-targeting siRNA molecules used for *in vivo* experiments

di-siRNA ID	Sense SEQ ID NO:	Antisense SEQ ID NO:
A	426	834
B	427	835
C	428	836
D	510	918
E	513	921
F	514	922
G	516	924
H	517	925
I	521	929
J	591	999
K	602	1010
L	604	1012

Di-siRNAs were formulated in PBS. siRNAs at the 20nmol dose were formulated as a divalent cation salt. In vivo testing was performed in FVB/NJ female mice with intracerebroventricular (ICV) dosing, in groups of 8 animals. On day 1, stereotactic injection was performed, wherein bilateral ICV injections of test article or PBS control (5 µL per side, 10 µL total) were performed at 0.5-2 µL/min after needle placement at the following coordinates from bregma: −0.45 mm or -0.25 mm anteriorposterior, +/- 1 mm mediolateral and −2.5 mm dorsoventral. Dose levels of 0.5 nmol, 1 nmol,

2.5 nmol, 5 nmol, and/or 20 nmol were utilized. At 28 days after injection, animals were perfused with cold 1X PBS and brains were collected and sliced. Tissue punches of fixed diameter and thickness were collected from different brain regions (motor cortex, hippocampus and striatum) and snap frozen on dry ice.

Protein expression analysis

To evaluate MSH3 protein expression levels, mouse brain tissue punches were homogenized in Cell Lysis Buffer with protease/phosphatase inhibitor cocktail (Cell Signaling Technologies) using a TissueLyser II. Tissue homogenate was centrifuged for 5 minutes at 1000 rpm to remove bubbles. Total protein content was normalized to using BCA (Pierce) to 0.125 mg/mL in 16 µL.

For MSH3 protein expression analysis, Western blot was performed using the Jess (Protein Simple) system and reagents as recommended by the manufacturer. The 12-230 kD separation cartridge was utilized, with Fluorescent Master Mix 1 and the anti-mouse detection module (all from Protein Simple). Samples were probed for mouse total MSH3 expression (MABE324 Antibody, EMD Millipore, 1:100 dilution) and were normalized against the multiplexed housekeeping protein reference mouse actin (MAB8929, R&D Systems, 1:20,000 dilution). Comparative analysis was performed for relative MSH3 quantitation against samples taken from PBS treated mice. Results are shown in Figures 1, 2, 3, 7, and 9.

RNA expression analysis

To evaluate MSH3 mRNA expression levels, total RNA was extracted from mouse brain tissue punches using phenol:chloroform extraction. This method was performed by first disrupting tissue samples in TRIzol reagent (Invitrogen) using a TissueLyser II (Qiagen) and adding chloroform to the homogenized samples at a ratio of 5:1 TRIzol:chloroform. Tubes were then shaken vigorously and spun at 12,000 x g for 15 mins and the resulting upper aqueous phase containing total RNA was carefully removed and added to a clean tube. An equal volume of 70% ethanol was added to each sample and mixed gently. The sample was further purified using Qiagen RNeasy column purification according to standard kit protocol. Samples were eluted in 40 µL RNase-free water. Following elution, RNA was analyzed on a TapeStation 4200 Bioanalyzer (Agilent) to assess concentration and quality. All samples were normalized for total RNA. cDNA synthesis was performed in a 20 µL reaction volume using the Applied Biosystems High-Capacity cDNA Reverse Transcription kit. Following RT-PCR, nuclease-free water was added to cDNA for a final sample volume of 50 µL.

For Htt gene expression analysis, qPCR was performed using TaqMan reagents on a QuantStudio7 Real-Time PCR instrument (Life Technologies). Samples were probed for mouse total MSH3 expression (assay ID Mm00487756_m1) and were normalized against the multiplexed housekeeping gene reference mouse TBP (Assay ID Mm01277042_m1). Comparative analysis was performed for relative MSH3 quantitation (DeltaDeltaCt) against samples taken from PBS treated mice. Results are shown in Figures 4, 5, 6, and 8.

Statistical assessment

Statistical significance between PBS control and each treatment group was determined using two-way ANOVA and Dunnett's multiple comparisons test, except for Figure 9, which utilized Sidak's multiple comparisons test.

Example 4. Generating *MSH3*-targeting siRNA Molecules

The siRNA molecules of the disclosure can be synthesized by standard methods known in the art as further discussed below, e.g., by use of an automated DNA synthesizer, such as are commercially available from, for example, Biosearch, Applied Biosystems, Inc.

The siRNA agent can be prepared using solution-phase or solid-phase organic synthesis or both. Organic synthesis offers the advantage that the oligonucleotide including unnatural or modified nucleotides can be easily prepared. Specific examples of siRNA molecules, with the nucleotide sequence of the sense and antisense strand, as well as the MutS Homolog 3 (*MSH3*) mRNA target sequence, are shown in Table 1A, above. It is appreciated that one of skill in the art could anneal the antisense (AS) strand to the corresponding sense (S) strand to yield a ds-siRNA molecule. Alternatively, one of skill in the art could derive a ss-siRNA molecule using antisense strand only.

Example 5. Optimizing *MSH3*-targeting siRNA Molecules

It is contemplated that for any small interfering RNA (siRNA) agent disclosed herein, modifications to the siRNA may further optimize the molecule's efficacy or biophysical properties (e.g., increasing serum stability or circulating half-life, increasing thermal stability, enhancing transmembrane delivery, and/or targeting to a particular location or cell type). Such optimization could be achieved by systematically either adding or removing linked nucleosides to generate longer or shorter sequences. Further siRNA optimization could include the incorporation of, for example, one or more alternative nucleosides, alternative 2' sugar moieties, and/or alternative internucleoside linkages. Further still, such optimized siRNA molecules may include the introduction of hydrophobic and/or stabilizing moieties at the 5' and/or 3' ends.

siRNA Optimization with Alternative Nucleosides

Optimization of the siRNA molecules of the disclosure may include one or more of the following nucleoside modifications: 5-methylcytosine (5-me-C), 5-hydroxymethyl cytosine, xanthine, hypoxanthine, 2-aminoadenine, 6-methyl and other alkyl derivatives of adenine and guanine, 2-propyl and other alkyl derivatives of adenine and guanine, 2-thiouracil, 2-thiothymine and 2-thiocytosine, 5-halouracil and cytosine, 5-propynyl (-C=C-CH3) uracil and cytosine and other alkynyl derivatives of pyrimidine bases, 6-azo uracil, cytosine and thymine, 5-uracil (pseudouracil), 4-thiouracil, 8-halo, 8-amino, 8-thiol, 8-thioalkyl, 8-hydroxyl and other 8-substituted adenines and guanines, 5-halo particularly 5-bromo, 5-trifluoromethyl and other 5-substituted uracils and cytosines, 7-methylguanine and 7-methyladenine, 2-F-adenine, 2-amino-adenine, 8-azaguanine and 8-azaadenine, 7-deazaguanine and 7-deazaadenine, and/or 3-deazaguanine and 3-deazaadenine. The siRNA molecules may also include nucleobases in which the purine or pyrimidine base is replaced with other heterocycles, for example 7-deaza-adenine, 7-deazaguanosine, 2-aminopyridine, and/or 2-pyridone.

Further optimization of the siRNA molecules of the disclosure may include nucleobases disclosed in US 3,687,808; Kroschwitz, J.I., ed. *The Concise Encyclopedia of Polymer Science and Engineering,* New York, John Wiley & Sons, 1990, pp. 858-859; Englisch et al., *Angewandte Chemie,* International Edition 30:613, 1991; and Sanghvi, Y.S., Chapter 16, *Antisense Research and Applications,* CRC Press, Gait, M.J. ed., 1993, pp. 289-302.

siRNA Optimization with Alternative Sugar Modifications

Optimization of the siRNA molecules of the disclosure may include one or more of the following 2' sugar modifications: 2'-O-methyl (2'-O-Me), 2'-methoxyethoxy (2'-O-$CH_2CH_2OCH_3$, also known as 2'-O-(2-methoxyethyl) or 2'-MOE), 2'-dimethylaminooxyethoxy, i.e., a $O(CH_2)_2ON(CH_3)_2$ group, also known as 2'-DMAOE, and/or 2'-dimethylaminoethoxyethoxy (also known in the art as 2'-O-dimethylamino-ethoxy-ethyl or 2'-DMAEOE), i.e., 2'-O-$CH_2OCH_2N(CH_3)_2$. Other possible 2'-modifications that can optimize the siRNA molecules of the disclosure include all possible orientations of OH; F; O-, S-, or N-alkyl; O-, S-, or N-alkenyl; O-, S- or N-alkynyl; or O-alkyl-O-alkyl, wherein the alkyl, alkenyl and alkynyl may be substituted or unsubstituted C1 to C10 alkyl or C2 to C10 alkenyl and alkynyl. Other potential sugar substituent groups include, e.g., aminopropoxy (-$OCH_2CH_2CH_2NH_2$), allyl (-CH_2-CH=CH_2), -O-allyl (-O-CH_2-CH=CH_2) and fluoro (F). 2'-sugar substituent groups may be in the arabino (up) position or ribo (down) position. In some embodiments, the 2'-arabino modification is 2'-F. Similar modifications may also be made at other positions on the siRNA molecule, particularly the 3' position of the sugar on the 3' terminal nucleoside or in 2'-5' linked oligonucleotides and the 5' position of 5' terminal nucleotide. Oligonucleotides may also have sugar mimetics such as cyclobutyl moieties in place of the pentofuranosyl sugar.

siRNA Optimization with Alternative Internucleoside Linkages

Optimization of the siRNA molecules of the disclosure may include one or more of the following internucleoside modifications: phosphorothioates, phosphorodithioates, phosphotriesters, aminoalkylphosphotriesters, methyl and other alkyl phosphonates including 3'-alkylene phosphonates, 5'-alkylene phosphonates, phosphinates, phosphoramidates including 3'-amino phosphoramidate and aminoalkylphosphoramidates, thionophosphoramidates, thionoalkylphosphonates, thionoalkylphosphotriesters, selenophosphates, and boranophosphates having normal 3'-5' linkages, 2'-5' linked analogs of these, and those having inverted polarity wherein one or more internucleotide linkages is a 3' to 3', 5' to 5' or 2' to 2' linkage.

siRNA Optimization with Hydrophobic Moieties

Optimization of the siRNA molecules of the disclosure may include hydrophobic moieties covalently attached to the 5' end or the 3' end. Non-limiting examples of hydrophobic moieties suitable for use with the siRNA molecules of the disclosure may include cholesterol, vitamin D, tocopherol, phosphatidylcholine (PC), docosahexaenoic acid, docosanoic acid, PC-docosanoic acid, eicosapentaenoic acid, lithocholic acid or any combination of the aforementioned hydrophobic moieties with PC.

siRNA Optimization with Stabilizing Moieties

Optimization of the siRNA molecules of the disclosure may include a 5'-phosphorous stabilizing moiety that protects the siRNA molecules from degradation. A 5′-phosphorus stabilizing moiety replaces the 5′-phosphate to prevent hydrolysis of the phosphate. Hydrolysis of the 5′-phosphate prevents binding to RISC, a necessary step in gene silencing. Any replacement for phosphate that does not impede binding to RISC is contemplated in this disclosure. In some embodiments, the replacement for the 5′-phosphate is also stable to *in vivo* hydrolysis. Each siRNA strand may independently and optionally employ any suitable 5′-phosphorus stabilizing moiety. Non-limiting examples of 5' stabilizing moieties suitable for use with the siRNA molecules of the disclosure may include those demonstrated by Formulas IX-XVI above.

siRNA Optimization with Branched siRNA

Optimization of the siRNA molecules of the disclosure may include the incorporation of branching patterns, such as, for example, di-branched, tri-branched, or tetra-branched siRNAs connected by way of a linker. Each main branch may be further branched to allow for 2, 3, 4, 5, 6, 7, or 8 separate RNA single- or double-strands. The branch points on the linker may stem from the same atom, or separate atoms along the linker. Some exemplary embodiments are listed in Table 2, above.

The siRNA composition of the disclosure may be optimized to be in the form of: di-branched siRNA molecules, as represented by any one of Formulas XVII-XIX; tri-branched siRNA molecules, as represented by any one of Formulas XX-XXIII; and/or tetra-branched siRNA molecules, as represented by any one of Formulas XXIV-XXVIII, wherein each RNA, independently, is an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety (e.g., phosphoroamidite, tosylated solketal, 1,3-diaminopropanol, pentaerythritol, or any one of the branch point moieties described in US 10,478,503).

Example 6. Preparation and Administrating *MSH3*-targeting siRNA Molecules

The siRNA molecules in the present disclosure may be formulated into a pharmaceutical composition for administration to a subject in a biologically compatible form suitable for administration *in vivo*. For example, the siRNA molecules of the disclosure may be administered in a suitable diluent, carrier, or excipient, and may further contain a preservative, e.g., to prevent the growth of microorganisms. Conventional procedures and ingredients for the selection and preparation of suitable formulations are described, for example, in Remington, J.P. *The Science and Practice of Pharmacy*, Easton, PA. Mack Publishers, 2012, 22nd ed. and in The United States Pharmacopeial Convention, *The National Formulary*, United States Pharmacopeial, 2015, USP 38 NF 33).

The method of the disclosure contemplates any route of administration to the subject that is tolerated by the siRNA compositions of the disclosure. Non-limiting examples of siRNA injections into the CNS include intrathecally, intracerebroventricularly, intrastriatally, intraparenchymally, or intra-cisterna magna injection by catheterization. Examples of systemic administration include intravenous, intramuscular, and subcutaneous injection. A physician having ordinary skill in the art can readily determine an effective route of administration.

Example 7. Methods for the Treatment of Microsatellite Repeat Expansion Diseases Using *MSH3*-targeting siRNA Molecules

A subject in need of treatment of a microsatellite repeat expansion disease, such as Huntington's Disease, is treated with a dosage of the siRNA molecule or siRNA composition of the disclosure, formulated as a salt, at frequency determined by a practitioner. A physician having ordinary skill in the art can readily determine an effective amount of the siRNA molecule for administration to a mammalian subject (e.g., a human) in need thereof. For example, a physician could start prescribing doses of one of the siRNA molecules of the disclosure at levels lower than that required to achieve the desired therapeutic effect and gradually increase the dosage until the desired effect is achieved. Alternatively, a physician may begin a treatment regimen by administering one of the siRNA molecules of the disclosure at a high dose and subsequently administer progressively lower doses until a minimum dose that produces a therapeutic effect (e.g., a reduction in expression of *MSH3* mRNA or suitable biomarker) is achieved. In general, a suitable daily dose of one of one of the siRNA molecules of the disclosure will be an amount which is the lowest dose effective to produce a therapeutic effect. The ss- or ds-siRNA molecules of the disclosure may be administered by injection, e.g., intrathecally, intracerebroventricularly, intrastriatally, intraparenchymally, intravenously, intramuscularly, subcutaneously, or by intra-cisterna magna injection via catheterization. A daily dose of a therapeutic composition of one of the siRNA molecules of the disclosure may be administered as a single dose or as two, three, four, five, six or more doses administered separately at appropriate intervals throughout the day, week, month, or year, optionally, in unit dosage forms. While it is possible for any of the siRNA molecules of the disclosure to be administered alone, it may also be administered as a pharmaceutical formulation in combination with excipients, carriers, and optionally, additional therapeutic agents. Dosage and frequency are determined based on the subject's height, weight, age, sex, and other disorders.

The siRNA molecule(s) of the disclosure is selected by the practitioner for compatibility with the subject. Single- or double-stranded siRNA molecules (e.g., non-branched siRNA, di-branched siRNA, tri-branched siRNA, tetra-branched siRNA) are available for selection. The siRNA molecule chosen has an antisense strand and may have a sense strand with a sequence and RNA modifications (e.g., natural and non-natural internucleoside linkages, modified sugars, 5′-phosphorus stabilizing moieties, hydrophobic moieties, and/or branching structures) best suited to the patient.

The siRNA molecule is delivered by the route best suited the patient (e.g., intrathecally, intracerebroventricularly, intrastriatally, intraparenchymally, intravenously, intramuscularly, subcutaneously, or by intra-cisterna magna injection via catheterization) and condition at a rate tolerable to the patient until the subject has reached a maximum tolerated dose, or until symptoms are ameliorated satisfactorily.

Other Embodiments

All publications, patents, and patent applications mentioned in this specification are incorporated herein by reference to the same extent as if each independent publication or patent application was specifically and individually indicated to be incorporated by reference.

While the invention has been described in connection with specific embodiments thereof, it will be understood that it is capable of further modifications and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the invention that come within known or customary practice within the art to which the invention pertains and may be applied to the essential features hereinbefore set forth, and follows in the scope of the claims.

Other embodiments are within the claims.

Claims

1. A small interfering RNA (siRNA) molecule comprising an antisense strand and sense strand having complementarity to the antisense strand, wherein the antisense strand is from 10 to 30 nucleotides in length and has complementarity sufficient to hybridize to a region within a MutS Homolog 3 (*MSH3*) mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

2. The siRNA molecule of claim 1, wherein the antisense strand has at least 70% complementarity to a region of 21 contiguous nucleobases within the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

3. The siRNA molecule of claim 2, wherein the antisense strand has at least 75% complementarity to a region of 21 contiguous nucleobases within the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408, optionally wherein the antisense strand has at least 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% complementarity to the region within the *MSH3* mRNA transcript having the nucleic acid sequence of any one of SEQ ID Nos: 1-408.

4. The siRNA molecule of any one of claims 1-3, wherein the antisense strand comprises at least 10, at least 11, at least 12, at least 13, at least 14, at least 15, at least 16, at least 17, at least 18, at least 19, at least 20, at least 21, at least 22, at least 23, at least 24, at least 25, at least 26, at least 27, at least 28, at least 29, or 30 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

5. The siRNA molecule of claim 4, wherein the antisense strand comprises from 10 to 30 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

6. The siRNA molecule of claim 5, wherein the antisense strand comprises from 12 to 30 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

7. The siRNA molecule of claim 6, wherein the antisense strand comprises from 15 to 30 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

8. The siRNA molecule of claim 7, wherein the antisense strand comprises from 18 to 30 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

9. The siRNA molecule of claim 8, wherein the antisense strand comprises from 18 to 25 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

10. The siRNA molecule of any one of claims 1-9, wherein the antisense strand comprises from 18 to 21 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

11. The siRNA molecule of claim 10, wherein the antisense strand comprises 21 contiguous nucleotides that are fully complementary to a contiguous polynucleotide segment of equal length within the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

12. The siRNA molecule of any one of claims 1-11, wherein the antisense strand comprises 9 or fewer nucleotide mismatches relative to a region of 21 contiguous nucleobases of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408, optionally wherein the antisense strand comprises 8 or fewer, 7 or fewer, 6 or fewer, 5 or fewer, 4 or fewer, 3 or fewer, 2 or fewer, or only 1 mismatch relative to the region of the *MSH3* RNA transcript having the nucleic acid sequence of any one of SEQ ID NOs: 1-408.

13. The siRNA molecule of any one of claims 1-12, wherein the region of the *MSH3* RNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 1-24, 40-84, 100, 118-139, 173-181, 193-205, 220-222, 240-242, 249-308, 319-330, 336-377, 384-386, and 398-408.

14. The siRNA molecule of any one of claims 1-12, wherein the region of the *MSH3* RNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 33, 42, 44, 102, 103, 105, 106, 108, 109, 113, 126, 129, 130, 158, 161, 166, 177, 183, 193, 194, 196, 197, 202, 209, 217, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362, optionally wherein the region of the *MSH3* RNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 102, 105, 106, 108, 109, 113, 183, 194, and 196.

15. The siRNA molecule of claim 14, wherein the region of the *MSH3* RNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 5, 17-20, 42, 44, 126, 129, 130, 158, 177, 183, 193, 194,

196, 197, 202, 209, 231, 271, 273, 291, 294, 305, 307, 317, 318, and 362, optionally wherein the region of the *MSH3* RNA transcript has the nucleic acid sequence of any one of SEQ ID NOs: 18-20, 183, 194, and 196.

16. The siRNA molecule of any one of claims 1-15, wherein the antisense strand has a nucleic acid sequence that is at least 85% identical to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224.

17. The siRNA molecule of claim 16, wherein the antisense strand has a nucleic acid sequence that is at least 90% identical to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224.

18. The siRNA molecule of claim 17, wherein the antisense strand has a nucleic acid sequence that is at least 95% identical to the nucleic acid sequence of SEQ ID NOs: 817-1224, optionally wherein the antisense strand has a nucleic acid sequence that is at least 96%, 97%, 98%, or 99% identical to the nucleic acid sequence of any one of SEQ ID NOs: 817-1224.

19. The siRNA molecule of claim 18, wherein the antisense strand has the nucleic acid sequence of any one of SEQ ID NOs: 817-1224.

20. The siRNA molecules of any one of claims 16-19, wherein the nucleic acid sequence is any one of SEQ ID NOs: 817-840, 856-900, 916, 934-955, 989-997, 1009-1021, 1036-1038, 1056-1058, 1065-1124, 1135-1146, 1152-1193, 1200-1202, and 1214-1224.

21. The siRNA molecule of any one of claims 16-19, wherein the nucleic acid sequence is any one of SEQ ID NOs: 821, 833-836, 849, 858, 860, 918, 919, 921, 922, 924, 925, 929, 942, 945, 946, 974, 977, 982, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1033, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134, optionally wherein the nucleic acid sequence is any one of SEQ ID NOs: 834-836, 918, 921, 922, 924, 925, 999, 1010, and 1012.

22. The siRNA molecule of claim 21, wherein the nucleic acid sequence is any one of SEQ ID NOs: 821, 833-836, 858, 860, 942, 945, 946, 974, 993, 999, 1009, 1010, 1012, 1013, 1018, 1025, 1047, 1087, 1089, 1107, 1110, 1121, 1123, 1133, and 1134, optionally wherein the nucleic acid sequence is any one of SEQ ID NOs: 834-836, 999, 1010, and 1012.

23. The siRNA molecule of any one of claims 1-22, wherein the sense strand has a nucleic acid sequence that is at least 85% identical to the nucleic acid sequence of any one of SEQ ID NOs: 409-816.

24. The siRNA molecule of claim 23, wherein the sense strand has a nucleic acid sequence that is at least 90% identical to the nucleic acid sequence of any one of SEQ ID NOs: 409-816.

25. The siRNA molecule of claim 24, wherein the sense strand has a nucleic acid sequence that is at least 95% identical to the nucleic acid sequence of SEQ ID NOs: 409-816, optionally wherein the sense strand has a nucleic acid sequence that is at least 96%, 97%, 98%, or 99% identical to the nucleic acid sequence of any one of SEQ ID NOs: 409-816.

26. The siRNA molecule of claim 25, wherein the sense strand has the nucleic acid sequence of any one of SEQ ID NOs: 409-816.

27. The siRNA molecule of any one of claims 23-26, wherein the nucleic acid sequence is any one of SEQ ID NOs: 409-432, 448-492, 508, 526-547, 581-589, 601-613, 628-630, 648-650, 657-716, 727-738, 744-785, 792-794, and 806-816.

28. The siRNA molecule of any one of claims 23-26, wherein the nucleic acid sequence is any one of SEQ ID NOs: 413, 425-428, 441, 450, 452, 510, 511, 513, 514, 516, 517, 521, 534, 537, 538, 566, 569, 574, 585, 591, 601, 602, 604, 605, 610, 617, 625, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770, optionally wherein the nucleic acid sequence is any one of SEQ ID NOs: 426-428, 513, 516, 514, 516, 517, 521, 591, 602, and 604.

29. The siRNA molecule of claim 28, wherein the nucleic acid sequence is any one of SEQ ID NOs: 413, 425-428, 450, 452, 534, 537, 538, 566, 585, 591, 601, 602, 604, 605, 610, 617, 639, 679, 681, 699, 702, 713, 715, 725, 726, and 770, optionally wherein the nucleic acid sequence is any one of SEQ ID NOs: 426-428, 591, 602, and 604.

30. The siRNA molecule of any one of claims 1-29, wherein the antisense strand comprises a structure represented by Formula I, wherein Formula I is, in the 5'-to-3' direction:

$$A\text{-}B\text{-}(A')_j\text{-}C\text{-}P^2\text{-}D\text{-}P^1\text{-}(C'\text{-}P^1)_k\text{-}C'$$

Formula I;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
B is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2$;
each C is a 2'-O-methyl (2'-O-Me) ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-fluoro (2'-F) ribonucleoside;
each D is a 2'-F ribonucleoside;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7; and
k is an integer from 1 to 7.

31. The siRNA molecule of claim 30, wherein the antisense strand comprises a structure represented by Formula A1, wherein Formula A1 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-B-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-B-S-A

Formula A1;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

32. The siRNA molecule of any one of claims 1-29, wherein the antisense strand comprises a structure represented by Formula II, wherein Formula II is, in the 5'-to-3' direction:

$$A\text{-}B\text{-}(A')_j\text{-}C\text{-}P^2\text{-}D\text{-}P^1\text{-}(C\text{-}P^1)_k\text{-}C'$$

Formula II;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
B is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2\text{-}D\text{-}P^2$;
each C is a 2'-O-methyl (2'-O-Me) ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-fluoro (2'-F) ribonucleoside;
each D is a 2'-F ribonucleoside;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7; and
k is an integer from 1 to 7.

33. The siRNA molecule of claim 32, wherein the antisense strand comprises a structure represented by Formula A2, wherein Formula A2 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-B-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-A-S-A

Formula A2;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

34. The siRNA molecule of any one of claims 1-33, wherein the sense strand comprises a structure represented by Formula III, wherein Formula III is, in the 5'-to-3' direction:

$$E\text{-}(A')_m\text{-}F$$

Formula III;

wherein E is represented by the formula $(C\text{-}P^1)_2$;
F is represented by the formula $(C\text{-}P^2)_3\text{-}D\text{-}P^1\text{-}C\text{-}P^1\text{-}C$, $(C\text{-}P^2)_3\text{-}D\text{-}P^2\text{-}C\text{-}P^2\text{-}C$, $(C\text{-}P^2)_3\text{-}D\text{-}P^1\text{-}C\text{-}P^1\text{-}D$, or $(C\text{-}P^2)_3\text{-}D\text{-}P^2\text{-}C\text{-}P^2\text{-}D$;
A', C, D, P^1, and P^2 are as defined in Formula II; and
m is an integer from 1 to 7.

35. The siRNA molecule of claim 34, wherein the sense strand comprises a structure represented by Formula S1, wherein Formula S1 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-S-A-S-A
Formula S1;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

36. The siRNA molecule of claim 34, wherein the sense strand comprises a structure represented by Formula S2, wherein Formula S2 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-O-A-O-A
Formula S2;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

37. The siRNA molecule of claim 34, wherein the sense strand comprises a structure represented by Formula S3, wherein Formula S3 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-S-A-S-B
Formula S3;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

38. The siRNA molecule of claim 34, wherein the sense strand comprises a structure represented by Formula S4, wherein Formula S4 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A-O-A-O-B-O-A-O-B
Formula S4;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

39. The siRNA molecule of any one of claims 1-32 and 34-38, wherein the antisense strand comprises a structure represented by Formula IV, wherein Formula IV is, in the 5'-to-3' direction:

$$A\text{-}(A')_j\text{-}C\text{-}P^2\text{-}B\text{-}(C\text{-}P^1)_k\text{-}C'$$

Formula IV;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
B is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1\text{-}D\text{-}P^1$;
each C is a 2'-O-Me ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-F ribonucleoside;
each D is a 2'-F ribonucleoside;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7; and
k is an integer from 1 to 7.

40. The siRNA molecule of claim 39, wherein the antisense strand comprises a structure represented by Formula A3, wherein Formula A3 is, in the 5'-to-3' direction:

A-S-B-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-B-S-A-S-A-S-A

Formula A3;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

41. The siRNA molecule of any one of claims 1-33, 39, and 40, wherein the sense strand comprises a structure represented by Formula V, wherein Formula V is, in the 5'-to-3' direction:

$$E\text{-}(A')_m\text{-}C\text{-}P^2\text{-}F$$

Formula V;

wherein E is represented by the formula $(C\text{-}P^1)_2$;
F is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1\text{-}C$, $D\text{-}P^2\text{-}C\text{-}P^2\text{-}C$, $D\text{-}P^1\text{-}C\text{-}P^1\text{-}D$, or $D\text{-}P^2\text{-}C\text{-}P^2\text{-}D$;
A', C, D, P^1 and P^2 are as defined in Formula IV; and
m is an integer from 1 to 7.

42. The siRNA molecule of claim 41, wherein the sense strand comprises a structure represented by Formula S5, wherein Formula S5 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-A

Formula S5;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

43. The siRNA molecule of claim 41, wherein the sense strand comprises a structure represented by Formula S6, wherein Formula S6 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-A

Formula S6;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

44. The siRNA molecule of claim 41, wherein the sense strand comprises a structure represented by Formula S7, wherein Formula S7 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-S-A-S-B

Formula S7;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

45. The siRNA molecule of claim 41, wherein the sense strand comprises a structure represented by Formula S8, wherein Formula S8 is, in the 5'-to-3' direction:

A-S-A-S-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B-O-A-O-B

Formula S8;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

46. The siRNA molecule of any one of claims 1-32, 34-38 and 41-45, wherein the antisense strand comprises a structure represented by Formula VI, wherein Formula VI is, in the 5'-to-3' direction:

$A\text{-}B_j\text{-}E\text{-}B_k\text{-}E\text{-}F\text{-}G_l\text{-}D\text{-}P^1\text{-}C'$

Formula VI;

wherein A is represented by the formula $C\text{-}P^1\text{-}D\text{-}P^1$;
each B is represented by the formula $C\text{-}P^2$;
each C is a 2'-O-Me ribonucleoside;
each C', independently, is a 2'-O-Me ribonucleoside or a 2'-F ribonucleoside;
each D is a 2'-F ribonucleoside;
each E is represented by the formula $D\text{-}P^2\text{-}C\text{-}P^2$;
F is represented by the formula $D\text{-}P^1\text{-}C\text{-}P^1$;
each G is represented by the formula $C\text{-}P^1$;
each P^1 is a phosphorothioate internucleoside linkage;
each P^2 is a phosphodiester internucleoside linkage;
j is an integer from 1 to 7;
k is an integer from 1 to 7; and
l is an integer from 1 to 7.

47. The siRNA molecule of claim 46, wherein the antisense strand comprises a structure represented by Formula A4, wherein Formula A4 is, in the 5'-to-3' direction:

A-S-B-S-A-O-A-O-A-O-B-O-A-O-A-O-A-O-A-O-A-O-A-O-A-O-A-O-B-O-A-O-B-S-A-S-A-S-A-S-B-S-A

Formula A4;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

48. The siRNA molecule of any one of claims 1-33, 39, 40, 46, and 47, wherein the sense strand comprises a structure represented by Formula VII, wherein Formula VII is, in the 5'-to-3' direction:

$H\text{-}B_m\text{-}I_n\text{-}A'\text{-}B_o\text{-}H\text{-}C$

Formula VII;

wherein A' is represented by the formula $C\text{-}P^2\text{-}D\text{-}P^2$;
each H is represented by the formula $(C\text{-}P^1)_2$;
each I is represented by the formula $(D\text{-}P^2)$;
B, C, D, P^1 and P^2 are as defined in Formula VI;
m is an integer from 1 to 7;
n is an integer from 1 to 7; and
o is an integer from 1 to 7.

49. The siRNA molecule of claim 48, wherein the sense strand comprises a structure represented by Formula S9, wherein Formula S9 is, in the 5'-to-3' direction:

A-S-A-S-A-O-A-O-A-O-B-O-B-O-B-O-A-O-B-O-A-O-A-O-A-O-A-S-A-S-A

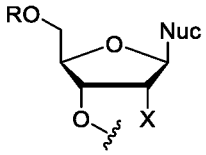
Formula S9;

wherein A represents a 2'-O-Me ribonucleoside, B represents a 2'-F ribonucleoside, O represents a phosphodiester internucleoside linkage, and S represents a phosphorothioate internucleoside linkage.

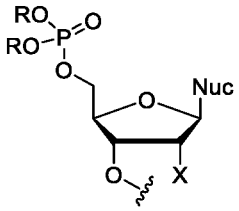
50. The siRNA molecule of any one of claims 1-49, wherein the antisense strand further comprises a 5' phosphorus stabilizing moiety at the 5' end of the antisense strand.

51. The siRNA molecule of any one of claims 1-50, wherein the sense strand further comprises a 5' phosphorus stabilizing moiety at the 5' end of the sense strand.

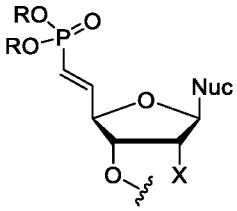
52. The siRNA molecule of claim 50 or 51, wherein each 5' phosphorus stabilizing moiety is, independently, represented by any one of Formulas IX-XVI:



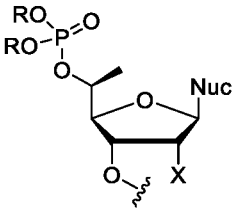
Formula IX



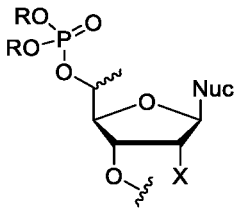
Formula X



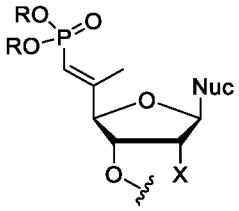
Formula XI



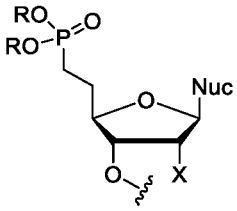
Formula XII



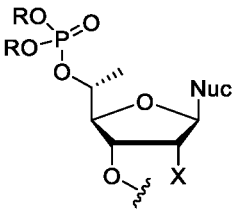
Formula XIII



Formula XIV



Formula XV



Formula XVI

wherein Nuc represents a nucleobase selected from the group consisting of adenine, uracil, guanine, thymine, and cytosine, and R represents an optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl, phenyl, benzyl, hydroxy, or hydrogen.

53. The siRNA molecule of claim 52, wherein the nucleobase is an adenine, uracil, guanine, thymine, or cytosine.

54. The siRNA molecule of any one of claims 50-53, wherein the 5' phosphorus stabilizing moiety is (E)-vinylphosphonate represented by Formula XI.

55. The siRNA molecule of any one of claims 1-54, wherein the siRNA molecule further comprises a hydrophobic moiety at the 5' or the 3' end of the siRNA molecule.

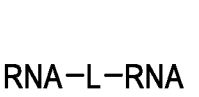
56. The siRNA molecule of claim 55, wherein the hydrophobic moiety is selected from a group consisting of cholesterol, vitamin D, or tocopherol.

57. The siRNA molecule of any one of claims 1-56, wherein the length of the sense strand is between 12 and 30 nucleotides.

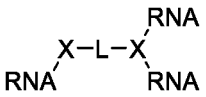
58. The siRNA molecule of any one of claims 1-57, wherein the siRNA molecule is a branched siRNA molecule.

59. The siRNA molecule of claim 58, wherein the branched siRNA molecule is di-branched, tri-branched, or tetra-branched.

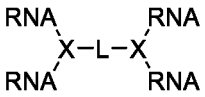
60. The siRNA molecule of claim 59, wherein the siRNA molecule is a di-branched siRNA molecule, optionally wherein the di-branched siRNA molecule is represented by any one of Formulas XVII-XIX:



Formula XVII;



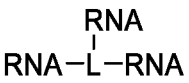
Formula XVIII;



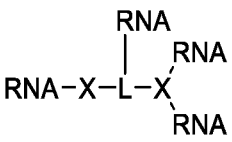
Formula XIX;

wherein each RNA is, independently, an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

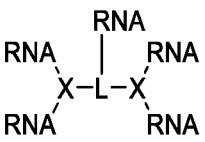
61. The siRNA molecule of claim 59, wherein the siRNA molecule is a tri-branched siRNA molecule, optionally wherein the tri-branched siRNA molecule is represented by any one of Formulas XX-XXIII:



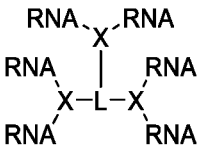
Formula XX;



Formula XXI;



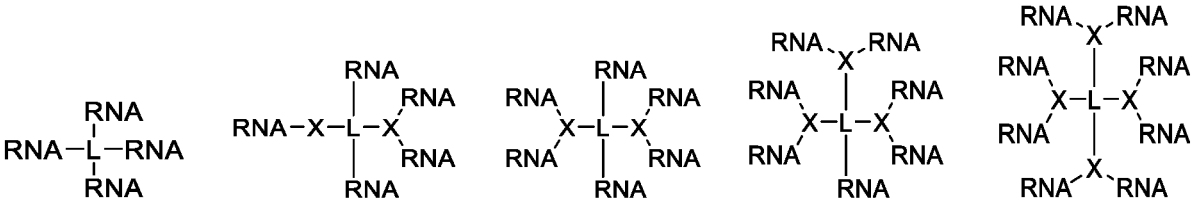
Formula XXII;



Formula XXIII;

wherein each RNA is, independently, an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

62. The siRNA molecule of claim 59, wherein the siRNA molecule is a tetra-branched siRNA molecule, optionally wherein the tetra-branched siRNA molecule is represented by any one of Formulas XXIV-XXVIII:



Formula XXIV; **Formula XXV;** **Formula XXVI;** **Formula XXVII;** **Formula XXVIII;**

wherein each RNA is, independently, an siRNA molecule, L is a linker, and each X, independently, represents a branch point moiety.

63. The siRNA molecule of any one of claims 60-62, wherein the linker is selected from a group consisting of one or more contiguous subunits of an ethylene glycol, alkyl, carbohydrate, block copolymer, peptide, RNA, and DNA.

64. The siRNA molecule of claim 63, wherein the one or more contiguous subunits is 2 to 20 contiguous subunits.

65. A pharmaceutical composition comprising the siRNA molecule of any one of claims 1-64 and a pharmaceutically acceptable excipient, carrier, or diluent.

66. A method of delivering an siRNA molecule to a subject diagnosed as having a microsatellite repeat expansion disorder, the method comprising administering a therapeutically effective amount of the siRNA molecule of any one of claims 1-64 or the pharmaceutical composition of claim 65 to the subject.

67. A method of treating a microsatellite repeat expansion disorder in a subject in need thereof, the method comprising administering a therapeutically effective amount of the siRNA molecule of any one of claims 1-64 or the pharmaceutical composition of claim 65 to the subject.

68. The method of claim 67, wherein the microsatellite repeat expansion disorder is Huntington's disease.

69. The method of claim 67, wherein the microsatellite repeat expansion disorder is a spinocerebellar ataxia.

70. The method of claim 67, wherein the microsatellite repeat expansion disorder is a Fragile X syndrome.

71. The method of claim 67, wherein the microsatellite repeat expansion disorder is a myotonic dystrophy.

72. A method of reducing *MSH3* expression in a subject in need thereof, the method comprising administering a therapeutically effective amount of the siRNA molecule of any one of claims 1-64 or the pharmaceutical composition of claim 65 to the subject.

73. The method of any one of claims 66-72, wherein the siRNA molecule or the pharmaceutical composition is administered to the subject by way of intracerebroventricular, intrastriatal, intraparenchymal, or intrathecal injection.

74. The method of any one of claims 66-73, wherein the siRNA molecule or the pharmaceutical composition is administered to the subject by way of intravenous, intramuscular, or subcutaneous injection.

75. The method of any one of claims 66-74, wherein the subject is a human.

76. A kit comprising the siRNA molecule of any one of claims 1-64, or the pharmaceutical composition of claim 65, and a package insert, wherein the package insert instructs a user of the kit to perform the method of any one of claims 66-75.

FIG. 1

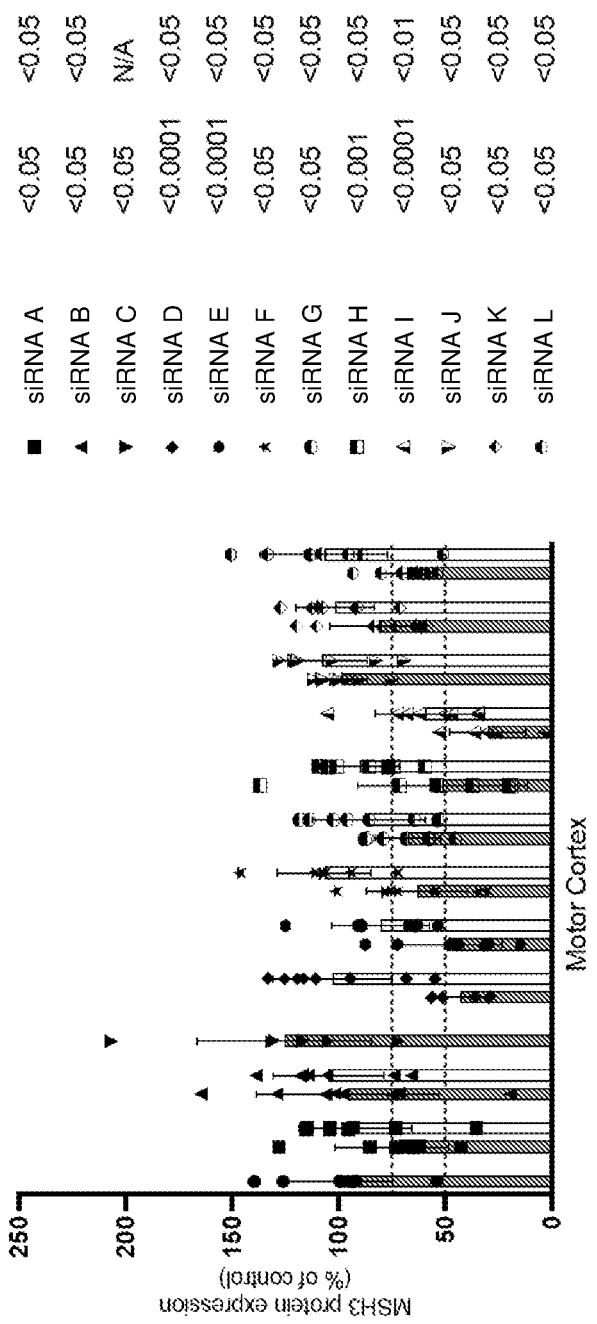

p value vs PBS:
5 nmol
1 nmol
PBS
siRNA A <0.05 <0.05
siRNA B <0.05 <0.05
siRNA C <0.05 N/A
siRNA D <0.0001 <0.05
siRNA E <0.0001 <0.05
siRNA F <0.05 <0.05
siRNA G <0.05 <0.05
siRNA H <0.001 <0.05
siRNA I <0.0001 <0.01
siRNA J <0.05 <0.05
siRNA K <0.05 <0.05
siRNA L <0.05 <0.05
MSH3 protein expression
(% of control)
250
200
150
100
50
0
Motor Cortex

FIG. 2

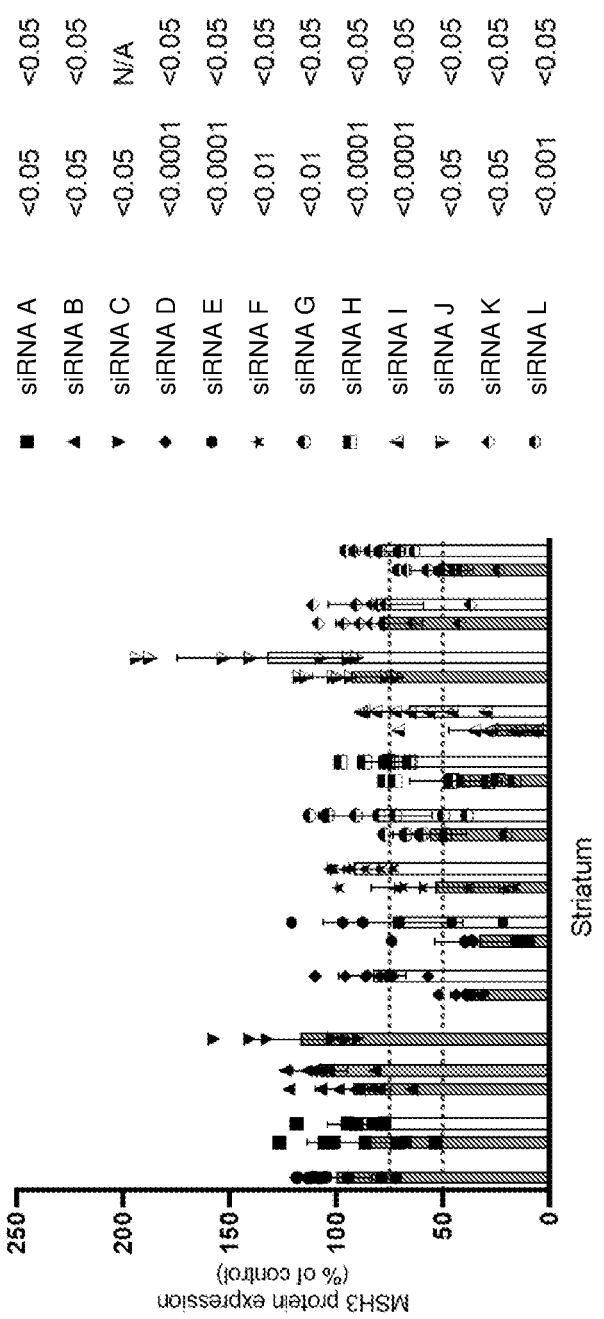

p value vs PBS:
5 nmol
1 nmol
PBS
siRNA A <0.05 <0.05
siRNA B <0.05 <0.05
siRNA C <0.05 N/A
siRNA D <0.0001 <0.05
siRNA E <0.0001 <0.05
siRNA F <0.01 <0.05
siRNA G <0.01 <0.05
siRNA H <0.0001 <0.05
siRNA I <0.0001 <0.05
siRNA J <0.05 <0.05
siRNA K <0.05 <0.05
siRNA L <0.001 <0.05
MSH3 protein expression
(% of control)
250
200
150
100
50
0
Striatum

FIG. 3

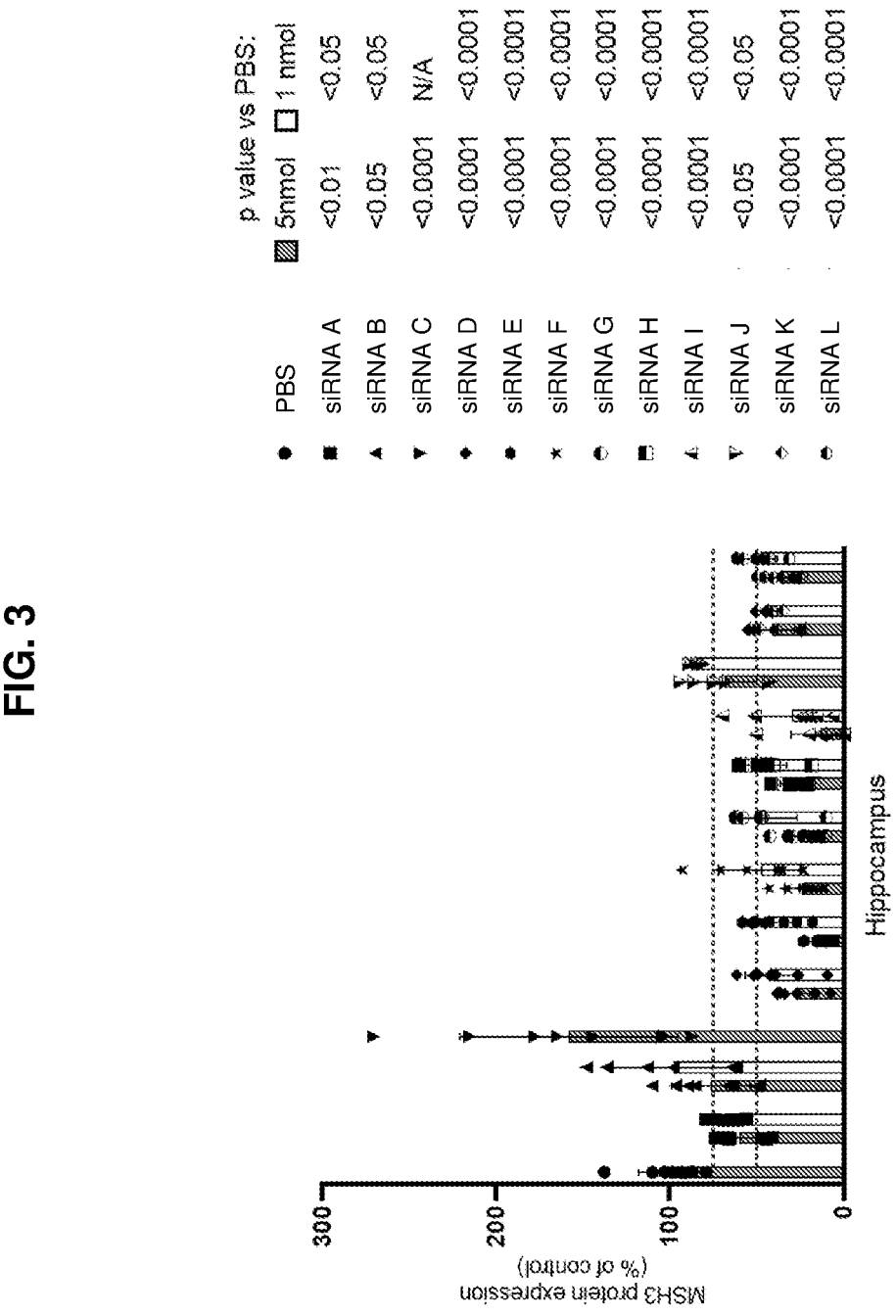

p value vs PBS:
5nmol
1 nmol
PBS
siRNA A <0.01 <0.05
siRNA B <0.05 <0.05
siRNA C <0.0001 N/A
siRNA D <0.0001 <0.0001
siRNA E <0.0001 <0.0001
siRNA F <0.0001 <0.0001
siRNA G <0.0001 <0.0001
siRNA H <0.0001 <0.0001
siRNA I <0.0001 <0.0001
siRNA J <0.05 <0.05
siRNA K <0.0001 <0.0001
siRNA L <0.0001 <0.0001
MSH3 protein expression
(% of control)
300
200
100
0
Hippocampus

FIG. 4

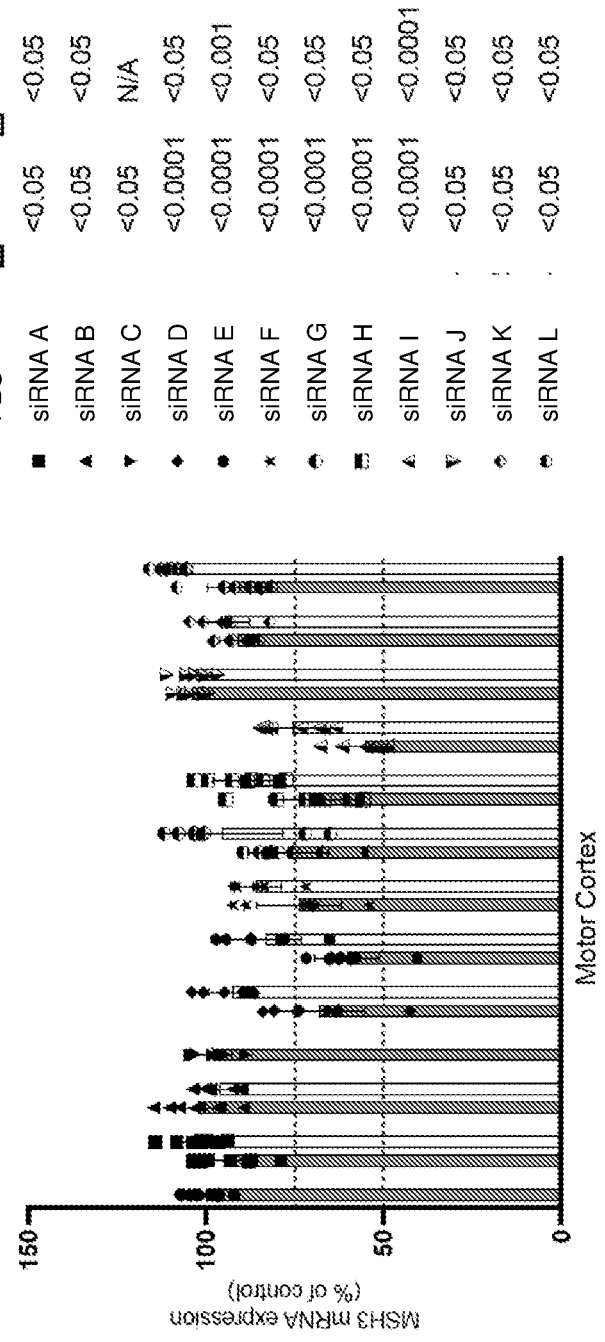

p value vs PBS:
5 nmol
1 nmol
PBS
siRNA A <0.05 <0.05
siRNA B <0.05 <0.05
siRNA C <0.05 N/A
siRNA D <0.0001 <0.05
siRNA E <0.0001 <0.001
siRNA F <0.0001 <0.05
siRNA G <0.0001 <0.05
siRNA H <0.0001 <0.05
siRNA I <0.0001 <0.0001
siRNA J <0.05 <0.05
siRNA K <0.05 <0.05
siRNA L <0.05 <0.05
MSH3 mRNA expression
(% of control)
150
100
50
0
Motor Cortex

FIG. 5

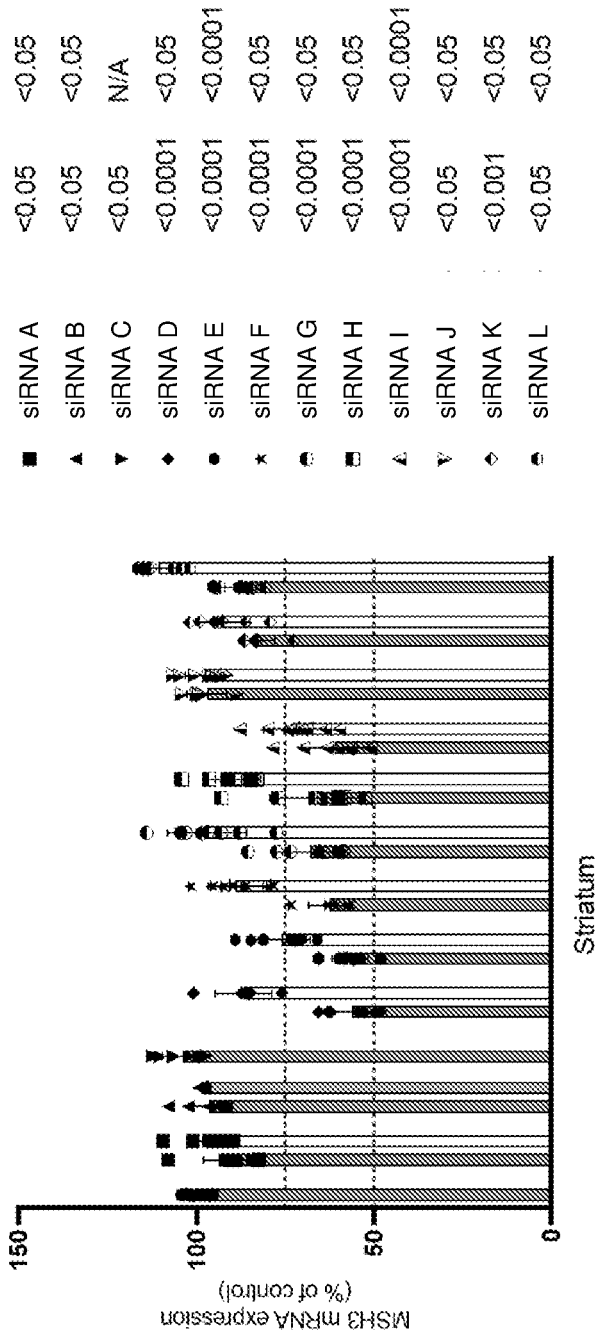

p value vs PBS:
5 nmol
1 nmol
PBS
siRNA A <0.05 <0.05
siRNA B <0.05 <0.05
siRNA C <0.05 N/A
siRNA D <0.0001 <0.05
siRNA E <0.0001 <0.0001
siRNA F <0.0001 <0.05
siRNA G <0.0001 <0.05
siRNA H <0.0001 <0.05
siRNA I <0.0001 <0.0001
siRNA J <0.05 <0.05
siRNA K <0.001 <0.05
siRNA L <0.05 <0.05
MSH3 mRNA expression
(% of control)
150
100
50
0
Striatum

FIG. 6

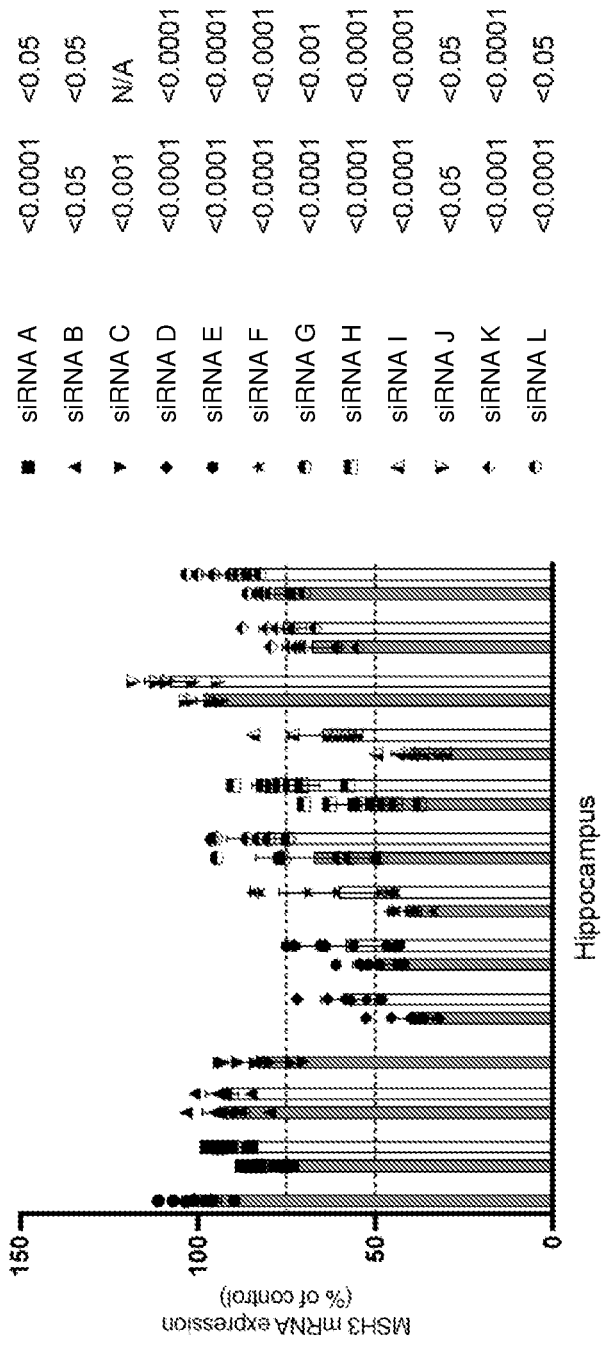

p value vs PBS:
5 nmol
1 nmol
PBS
siRNA A <0.0001 <0.05
siRNA B <0.05 <0.05
siRNA C <0.001 N/A
siRNA D <0.0001 <0.0001
siRNA E <0.0001 <0.0001
siRNA F <0.0001 <0.0001
siRNA G <0.0001 <0.001
siRNA H <0.0001 <0.0001
siRNA I <0.0001 <0.0001
siRNA J <0.05 <0.05
siRNA K <0.0001 <0.0001
siRNA L <0.0001 <0.05
MSH3 mRNA expression
(% of control)
150
100
50
0
Hippocampus

FIG. 7

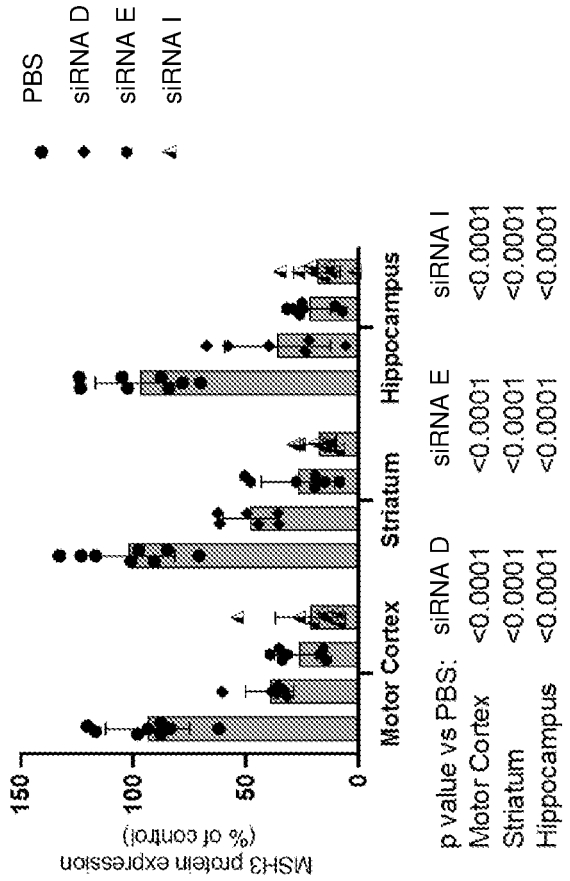
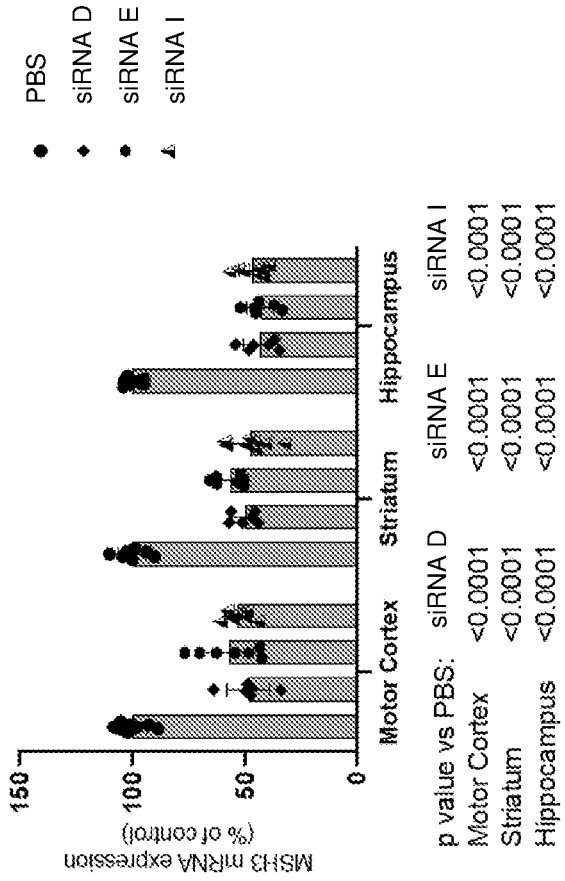
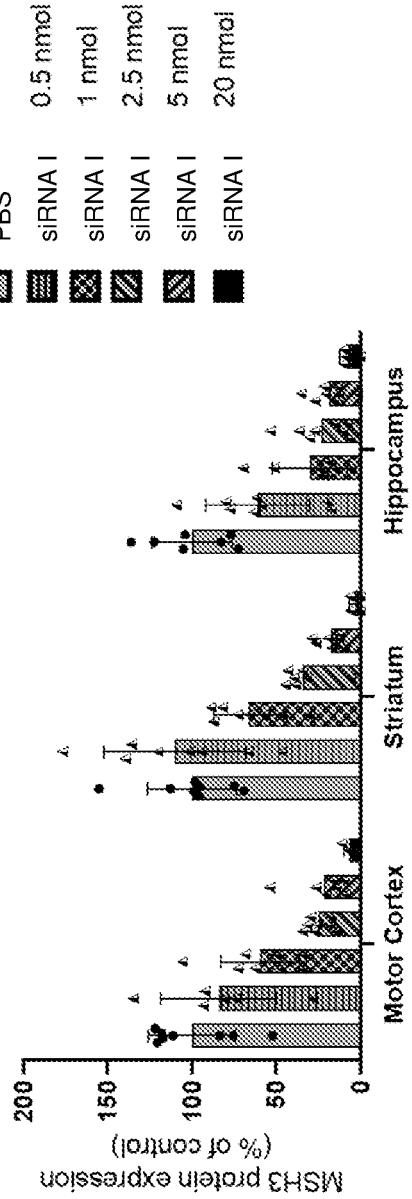

PBS
siRNA D
siRNA E
siRNA I
MSH3 protein expression
(% of control)
150
100
50
0
Motor Cortex
Striatum
Hippocampus
p value vs PBS: siRNA D siRNA E siRNA I
Motor Cortex <0.0001 <0.0001 <0.0001
Striatum <0.0001 <0.0001 <0.0001
Hippocampus <0.0001 <0.0001 <0.0001

FIG. 8



p value vs PBS:	siRNA D	siRNA E	siRNA I
Motor Cortex	<0.0001	<0.0001	<0.0001
Striatum	<0.0001	<0.0001	<0.0001
Hippocampus	<0.0001	<0.0001	<0.0001

FIG. 9



p value vs PBS:

	Motor cortex	Striatum	Hippocampus
20 nmol	<0.0001	<0.0001	<0.0001
5 nmol	<0.0001	<0.0001	<0.0001
2.5 nmol	<0.0001	<0.0001	<0.0001
1 nmol	<0.01	<0.05	<0.0001
0.5 nmol	ns	ns	<0.05

Sequence Listing

1	**Sequence Listing Information**	
1-1	File Name	51436-034WO2_Sequence_Listing_5_15_23.xml
1-2	DTD Version	V1_3
1-3	Software Name	WIPO Sequence
1-4	Software Version	2.3.0
1-5	Production Date	2023-05-15
1-6	Original free text language code	en
1-7	Non English free text language code	
2	**General Information**	
2-1	Current application: IP Office	
2-2	Current application: Application number	
2-3	Current application: Filing date	
2-4	Current application: Applicant file reference	51436-034WO2
2-5	Earliest priority application: IP Office	US
2-6	Earliest priority application: Application number	63/342,552
2-7	Earliest priority application: Filing date	2022-05-16
2-8en	Applicant name	Atalanta Therapeutics, Inc.
2-8	Applicant name: Name Latin	
2-9en	Inventor name	
2-9	Inventor name: Name Latin	
2-10en	Invention title	COMPOSITIONS AND METHODS FOR TREATMENT OF MICROSATELLITE DNA EXPANSION DISORDERS
2-11	Sequence Total Quantity	1224

3-1	**Sequences**		
3-1-1	Sequence Number [ID]	1	
3-1-2	Molecule Type	RNA	
3-1-3	Length	45	
3-1-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-1-5	Residues	gcgaggcaag cggttttgag ccgattcttc cagtctacgg gaagc	45
3-2	**Sequences**		
3-2-1	Sequence Number [ID]	2	
3-2-2	Molecule Type	RNA	
3-2-3	Length	45	
3-2-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-2-5	Residues	ccgattcttc cagtctacgg gaagcctgaa atccacctcc tcctc	45
3-3	**Sequences**		
3-3-1	Sequence Number [ID]	3	
3-3-2	Molecule Type	RNA	
3-3-3	Length	45	
3-3-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-3-5	Residues	cttccagtct acgggaagcc tgaaatccac ctcctcctcc acagg	45
3-4	**Sequences**		
3-4-1	Sequence Number [ID]	4	
3-4-2	Molecule Type	RNA	
3-4-3	Length	45	
3-4-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-4-5	Residues	agtctacggg aagcctgaaa tccacctcct cctccacagg tgcag	45
3-5	**Sequences**		
3-5-1	Sequence Number [ID]	5	
3-5-2	Molecule Type	RNA	
3-5-3	Length	45	
3-5-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-5-5	Residues	gccgcacata gctacagaaa ttgacagaag aaagaagaga ccatt	45
3-6	**Sequences**		
3-6-1	Sequence Number [ID]	6	
3-6-2	Molecule Type	RNA	
3-6-3	Length	45	
3-6-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-6-5	Residues	ccgcacatag ctacagaaat tgacagaaga aagaagagac cattg	45
3-7	**Sequences**		
3-7-1	Sequence Number [ID]	7	
3-7-2	Molecule Type	RNA	
3-7-3	Length	45	
3-7-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-7-5	Residues	cgcacatagc tacagaaatt gacagaagaa agaagagacc attgg	45
3-8	**Sequences**		

3-8-1	Sequence Number [ID]	8	
3-8-2	Molecule Type	RNA	
3-8-3	Length	45	
3-8-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-8-5	Residues	gcacatagct acagaaattg acagaagaaa gaagagacca ttgga	45
3-9	**Sequences**		
3-9-1	Sequence Number [ID]	9	
3-9-2	Molecule Type	RNA	
3-9-3	Length	45	
3-9-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-9-5	Residues	cacatagcta cagaaattga cagaagaaag aagagaccat tggaa	45
3-10	**Sequences**		
3-10-1	Sequence Number [ID]	10	
3-10-2	Molecule Type	RNA	
3-10-3	Length	45	
3-10-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-10-5	Residues	atagctacag aaattgacag aagaaagaag agaccattgg aaaat	45
3-11	**Sequences**		
3-11-1	Sequence Number [ID]	11	
3-11-2	Molecule Type	RNA	
3-11-3	Length	45	
3-11-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-11-5	Residues	aagaaagaag agaccattgg aaaatgatgg gcctgttaaa aagaa	45
3-12	**Sequences**		
3-12-1	Sequence Number [ID]	12	
3-12-2	Molecule Type	RNA	
3-12-3	Length	45	
3-12-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-12-5	Residues	agaaagaaga gaccattgga aaatgatggg cctgttaaaa agaaa	45
3-13	**Sequences**		
3-13-1	Sequence Number [ID]	13	
3-13-2	Molecule Type	RNA	
3-13-3	Length	45	
3-13-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-13-5	Residues	gaaagaagag accattggaa aatgatgggc ctgttaaaaa gaaag	45
3-14	**Sequences**		
3-14-1	Sequence Number [ID]	14	
3-14-2	Molecule Type	RNA	
3-14-3	Length	45	
3-14-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-14-5	Residues	aaagaagaga ccattggaaa atgatgggcc tgttaaaaag aaagt	45
3-15	**Sequences**		
3-15-1	Sequence Number [ID]	15	
3-15-2	Molecule Type	RNA	

3-15-3	Length	45	
3-15-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-15-5	Residues	aagaagagac cattggaaaa tgatgggcct gttaaaaaga aagta	45
3-16	**Sequences**		
3-16-1	Sequence Number [ID]	16	
3-16-2	Molecule Type	RNA	
3-16-3	Length	45	
3-16-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-16-5	Residues	gatctgggaa tgtctggcaa ctctgagcca aagaaatgtc tgagg	45
3-17	**Sequences**		
3-17-1	Sequence Number [ID]	17	
3-17-2	Molecule Type	RNA	
3-17-3	Length	45	
3-17-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-17-5	Residues	gaatgtctgg caactctgag ccaaagaaat gtctgaggac cagga	45
3-18	**Sequences**		
3-18-1	Sequence Number [ID]	18	
3-18-2	Molecule Type	RNA	
3-18-3	Length	45	
3-18-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-18-5	Residues	aatgtctggc aactctgagc caaagaaatg tctgaggacc aggaa	45
3-19	**Sequences**		
3-19-1	Sequence Number [ID]	19	
3-19-2	Molecule Type	RNA	
3-19-3	Length	45	
3-19-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-19-5	Residues	atgtctggca actctgagcc aaagaaatgt ctgaggacca ggaat	45
3-20	**Sequences**		
3-20-1	Sequence Number [ID]	20	
3-20-2	Molecule Type	RNA	
3-20-3	Length	45	
3-20-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-20-5	Residues	tgtctggcaa ctctgagcca aagaaatgtc tgaggaccag gaatg	45
3-21	**Sequences**		
3-21-1	Sequence Number [ID]	21	
3-21-2	Molecule Type	RNA	
3-21-3	Length	45	
3-21-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-21-5	Residues	gtctggcaac tctgagccaa agaaatgtct gaggaccagg aatgt	45
3-22	**Sequences**		
3-22-1	Sequence Number [ID]	22	
3-22-2	Molecule Type	RNA	
3-22-3	Length	45	

3-22-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-22-5	Residues	tctggcaact ctgagccaaa gaaatgtctg aggaccagga atgtt	45
3-23	**Sequences**		
3-23-1	Sequence Number [ID]	23	
3-23-2	Molecule Type	RNA	
3-23-3	Length	45	
3-23-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-23-5	Residues	ctggcaactc tgagccaaag aaatgtctga ggaccaggaa tgttt	45
3-24	**Sequences**		
3-24-1	Sequence Number [ID]	24	
3-24-2	Molecule Type	RNA	
3-24-3	Length	45	
3-24-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-24-5	Residues	ttgaaagaat tctgctgcga ttctgccctt cctcaaagta gagtc	45
3-25	**Sequences**		
3-25-1	Sequence Number [ID]	25	
3-25-2	Molecule Type	RNA	
3-25-3	Length	45	
3-25-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-25-5	Residues	tccagacaga atctctgcag gagagatttg cagttctgcc aaaat	45
3-26	**Sequences**		
3-26-1	Sequence Number [ID]	26	
3-26-2	Molecule Type	RNA	
3-26-3	Length	45	
3-26-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-26-5	Residues	ccagacagaa tctctgcagg agagatttgc agttctgcca aaatg	45
3-27	**Sequences**		
3-27-1	Sequence Number [ID]	27	
3-27-2	Molecule Type	RNA	
3-27-3	Length	45	
3-27-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-27-5	Residues	cagacagaat ctctgcagga gagatttgca gttctgccaa aatgt	45
3-28	**Sequences**		
3-28-1	Sequence Number [ID]	28	
3-28-2	Molecule Type	RNA	
3-28-3	Length	45	
3-28-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-28-5	Residues	agacagaatc tctgcaggag agatttgcag ttctgccaaa atgta	45
3-29	**Sequences**		
3-29-1	Sequence Number [ID]	29	
3-29-2	Molecule Type	RNA	
3-29-3	Length	45	
3-29-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-29-5	Residues	gacagaatct ctgcaggaga gatttgcagt tctgccaaaa tgtac	45
3-30	**Sequences**		
3-30-1	Sequence Number [ID]	30	
3-30-2	Molecule Type	RNA	
3-30-3	Length	45	
3-30-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-30-5	Residues	gcaggagaga tttgcagttc tgccaaaatg tactgatttt gatga	45
3-31	**Sequences**		
3-31-1	Sequence Number [ID]	31	
3-31-2	Molecule Type	RNA	
3-31-3	Length	45	
3-31-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-31-5	Residues	caggagagat ttgcagttct gccaaaatgt actgattttg atgat	45
3-32	**Sequences**		
3-32-1	Sequence Number [ID]	32	
3-32-2	Molecule Type	RNA	
3-32-3	Length	45	
3-32-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-32-5	Residues	aggagagatt tgcagttctg ccaaaatgta ctgattttga tgata	45
3-33	**Sequences**		
3-33-1	Sequence Number [ID]	33	
3-33-2	Molecule Type	RNA	
3-33-3	Length	45	
3-33-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-33-5	Residues	ggagagattt gcagttctgc caaaatgtac tgattttgat gatat	45
3-34	**Sequences**		
3-34-1	Sequence Number [ID]	34	
3-34-2	Molecule Type	RNA	
3-34-3	Length	45	
3-34-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-34-5	Residues	gagagatttg cagttctgcc aaaatgtact gattttgatg atatc	45
3-35	**Sequences**		
3-35-1	Sequence Number [ID]	35	
3-35-2	Molecule Type	RNA	
3-35-3	Length	45	
3-35-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-35-5	Residues	agagatttgc agttctgcca aaatgtactg attttgatga tatca	45
3-36	**Sequences**		
3-36-1	Sequence Number [ID]	36	
3-36-2	Molecule Type	RNA	
3-36-3	Length	45	
3-36-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-36-5	Residues	gagatttgca gttctgccaa aatgtactga ttttgatgat atcag	45
3-37	**Sequences**		
3-37-1	Sequence Number [ID]	37	
3-37-2	Molecule Type	RNA	
3-37-3	Length	45	
3-37-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-37-5	Residues	gattttgatg atatcagtct tctacacgca aagaatgcag tttct	45
3-38	**Sequences**		
3-38-1	Sequence Number [ID]	38	
3-38-2	Molecule Type	RNA	
3-38-3	Length	45	
3-38-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-38-5	Residues	attttgatga tatcagtctt ctacacgcaa agaatgcagt ttctt	45
3-39	**Sequences**		
3-39-1	Sequence Number [ID]	39	
3-39-2	Molecule Type	RNA	
3-39-3	Length	45	
3-39-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-39-5	Residues	atgatatcag tcttctacac gcaaagaatg cagtttcttc tgaag	45
3-40	**Sequences**		
3-40-1	Sequence Number [ID]	40	
3-40-2	Molecule Type	RNA	
3-40-3	Length	45	
3-40-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-40-5	Residues	tgatatcagt cttctacacg caaagaatgc agtttcttct gaaga	45
3-41	**Sequences**		
3-41-1	Sequence Number [ID]	41	
3-41-2	Molecule Type	RNA	
3-41-3	Length	45	
3-41-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-41-5	Residues	gatatcagtc ttctacacgc aaagaatgca gtttcttctg aagat	45
3-42	**Sequences**		
3-42-1	Sequence Number [ID]	42	
3-42-2	Molecule Type	RNA	
3-42-3	Length	45	
3-42-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-42-5	Residues	atatcagtct tctacacgca aagaatgcag tttcttctga agatt	45
3-43	**Sequences**		
3-43-1	Sequence Number [ID]	43	
3-43-2	Molecule Type	RNA	
3-43-3	Length	45	
3-43-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-43-5	Residues	tatcagtctt ctacacgcaa agaatgcagt ttcttctgaa gattc	45

3-44	**Sequences**		
3-44-1	Sequence Number [ID]	44	
3-44-2	Molecule Type	RNA	
3-44-3	Length	45	
3-44-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-44-5	Residues	atcagtcttc tacacgcaaa gaatgcagtt tcttctgaag attcg	45
3-45	**Sequences**		
3-45-1	Sequence Number [ID]	45	
3-45-2	Molecule Type	RNA	
3-45-3	Length	45	
3-45-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-45-5	Residues	tcagtcttct acacgcaaag aatgcagttt cttctgaaga ttcga	45
3-46	**Sequences**		
3-46-1	Sequence Number [ID]	46	
3-46-2	Molecule Type	RNA	
3-46-3	Length	45	
3-46-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-46-5	Residues	atgcagtttc ttctgaagat tcgaaacgtc aaattaatca aaagg	45
3-47	**Sequences**		
3-47-1	Sequence Number [ID]	47	
3-47-2	Molecule Type	RNA	
3-47-3	Length	45	
3-47-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-47-5	Residues	tttcttctga agattcgaaa cgtcaaatta atcaaaagga cacaa	45
3-48	**Sequences**		
3-48-1	Sequence Number [ID]	48	
3-48-2	Molecule Type	RNA	
3-48-3	Length	45	
3-48-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-48-5	Residues	aaggacacaa cacttttga tctcagtcag tttggatcat caaat	45
3-49	**Sequences**		
3-49-1	Sequence Number [ID]	49	
3-49-2	Molecule Type	RNA	
3-49-3	Length	45	
3-49-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-49-5	Residues	caacactttt tgatctcagt cagtttggat catcaaatac aagtc	45
3-50	**Sequences**		
3-50-1	Sequence Number [ID]	50	
3-50-2	Molecule Type	RNA	
3-50-3	Length	45	
3-50-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-50-5	Residues	acacttttg atctcagtca gtttggatca tcaaatacaa gtcat	45
3-51	**Sequences**		

3-51-1	Sequence Number [ID]	51	
3-51-2	Molecule Type	RNA	
3-51-3	Length	45	
3-51-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-51-5	Residues	`tttttgatct cagtcagttt ggatcatcaa atacaagtca tgaaa`	45
3-52	**Sequences**		
3-52-1	Sequence Number [ID]	52	
3-52-2	Molecule Type	RNA	
3-52-3	Length	45	
3-52-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-52-5	Residues	`tgatctcagt cagtttggat catcaaatac aagtcatgaa aattt`	45
3-53	**Sequences**		
3-53-1	Sequence Number [ID]	53	
3-53-2	Molecule Type	RNA	
3-53-3	Length	45	
3-53-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-53-5	Residues	`atacaagtca tgaaaattta cagaaaactg cttccaaatc agcta`	45
3-54	**Sequences**		
3-54-1	Sequence Number [ID]	54	
3-54-2	Molecule Type	RNA	
3-54-3	Length	45	
3-54-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-54-5	Residues	`agtcatgaaa atttacagaa aactgcttcc aaatcagcta acaaa`	45
3-55	**Sequences**		
3-55-1	Sequence Number [ID]	55	
3-55-2	Molecule Type	RNA	
3-55-3	Length	45	
3-55-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-55-5	Residues	`gtcatgaaaa tttacagaaa actgcttcca aatcagctaa caaac`	45
3-56	**Sequences**		
3-56-1	Sequence Number [ID]	56	
3-56-2	Molecule Type	RNA	
3-56-3	Length	45	
3-56-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-56-5	Residues	`tcatgaaaat ttacagaaaa ctgcttccaa atcagctaac aaacg`	45
3-57	**Sequences**		
3-57-1	Sequence Number [ID]	57	
3-57-2	Molecule Type	RNA	
3-57-3	Length	45	
3-57-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-57-5	Residues	`catgaaaatt tacagaaaac tgcttccaaa tcagctaaca aacgg`	45
3-58	**Sequences**		
3-58-1	Sequence Number [ID]	58	
3-58-2	Molecule Type	RNA	

3-58-3	Length	45	
3-58-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-58-5	Residues	atgaaaattt acagaaaact gcttccaaat cagctaacaa acggt	45
3-59	**Sequences**		
3-59-1	Sequence Number [ID]	59	
3-59-2	Molecule Type	RNA	
3-59-3	Length	45	
3-59-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-59-5	Residues	tttacagaaa actgcttcca aatcagctaa caaacggtcc aaaag	45
3-60	**Sequences**		
3-60-1	Sequence Number [ID]	60	
3-60-2	Molecule Type	RNA	
3-60-3	Length	45	
3-60-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-60-5	Residues	ttacagaaaa ctgcttccaa atcagctaac aaacggtcca aaagc	45
3-61	**Sequences**		
3-61-1	Sequence Number [ID]	61	
3-61-2	Molecule Type	RNA	
3-61-3	Length	45	
3-61-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-61-5	Residues	tacagaaaac tgcttccaaa tcagctaaca aacggtccaa aagca	45
3-62	**Sequences**		
3-62-1	Sequence Number [ID]	62	
3-62-2	Molecule Type	RNA	
3-62-3	Length	45	
3-62-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-62-5	Residues	acagaaaact gcttccaaat cagctaacaa acggtccaaa agcat	45
3-63	**Sequences**		
3-63-1	Sequence Number [ID]	63	
3-63-2	Molecule Type	RNA	
3-63-3	Length	45	
3-63-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-63-5	Residues	cagaaaactg cttccaaatc agctaacaaa cggtccaaaa gcatc	45
3-64	**Sequences**		
3-64-1	Sequence Number [ID]	64	
3-64-2	Molecule Type	RNA	
3-64-3	Length	45	
3-64-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-64-5	Residues	agaaaactgc ttccaaatca gctaacaaac ggtccaaaag catct	45
3-65	**Sequences**		
3-65-1	Sequence Number [ID]	65	
3-65-2	Molecule Type	RNA	
3-65-3	Length	45	

3-65-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-65-5	Residues	gaaaactgct tccaaatcag ctaacaaacg gtccaaaagc atcta	45
3-66	**Sequences**		
3-66-1	Sequence Number [ID]	66	
3-66-2	Molecule Type	RNA	
3-66-3	Length	45	
3-66-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-66-5	Residues	tgcttccaaa tcagctaaca aacggtccaa aagcatctat acgcc	45
3-67	**Sequences**		
3-67-1	Sequence Number [ID]	67	
3-67-2	Molecule Type	RNA	
3-67-3	Length	45	
3-67-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-67-5	Residues	cttccaaatc agctaacaaa cggtccaaaa gcatctatac gccgc	45
3-68	**Sequences**		
3-68-1	Sequence Number [ID]	68	
3-68-2	Molecule Type	RNA	
3-68-3	Length	45	
3-68-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-68-5	Residues	aatcagctaa caaacggtcc aaaagcatct atacgccgct agaat	45
3-69	**Sequences**		
3-69-1	Sequence Number [ID]	69	
3-69-2	Molecule Type	RNA	
3-69-3	Length	45	
3-69-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-69-5	Residues	atcagctaac aaacggtcca aaagcatcta tacgccgcta gaatt	45
3-70	**Sequences**		
3-70-1	Sequence Number [ID]	70	
3-70-2	Molecule Type	RNA	
3-70-3	Length	45	
3-70-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-70-5	Residues	tcagctaaca aacggtccaa aagcatctat acgccgctag aatta	45
3-71	**Sequences**		
3-71-1	Sequence Number [ID]	71	
3-71-2	Molecule Type	RNA	
3-71-3	Length	45	
3-71-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-71-5	Residues	cagctaacaa acggtccaaa agcatctata cgccgctaga attac	45
3-72	**Sequences**		
3-72-1	Sequence Number [ID]	72	
3-72-2	Molecule Type	RNA	
3-72-3	Length	45	
3-72-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-72-5	Residues	atagaaatga agcagcagca caaagatgca gttttgtgtg tggaa	45
3-73	**Sequences**		
3-73-1	Sequence Number [ID]	73	
3-73-2	Molecule Type	RNA	
3-73-3	Length	45	
3-73-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-73-5	Residues	tagaaatgaa gcagcagcac aaagatgcag ttttgtgtgt ggaat	45
3-74	**Sequences**		
3-74-1	Sequence Number [ID]	74	
3-74-2	Molecule Type	RNA	
3-74-3	Length	45	
3-74-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-74-5	Residues	caaagatgca gttttgtgtg tggaatgtgg atataagtat agatt	45
3-75	**Sequences**		
3-75-1	Sequence Number [ID]	75	
3-75-2	Molecule Type	RNA	
3-75-3	Length	45	
3-75-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-75-5	Residues	aaagatgcag ttttgtgtgt ggaatgtgga tataagtata gattc	45
3-76	**Sequences**		
3-76-1	Sequence Number [ID]	76	
3-76-2	Molecule Type	RNA	
3-76-3	Length	45	
3-76-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-76-5	Residues	aagatgcagt tttgtgtgtg gaatgtggat ataagtatag attct	45
3-77	**Sequences**		
3-77-1	Sequence Number [ID]	77	
3-77-2	Molecule Type	RNA	
3-77-3	Length	45	
3-77-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-77-5	Residues	agatgcagtt ttgtgtgtgg aatgtggata taagtataga ttctt	45
3-78	**Sequences**		
3-78-1	Sequence Number [ID]	78	
3-78-2	Molecule Type	RNA	
3-78-3	Length	45	
3-78-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-78-5	Residues	gatgcagttt tgtgtgtgga atgtggatat aagtatagat tcttt	45
3-79	**Sequences**		
3-79-1	Sequence Number [ID]	79	
3-79-2	Molecule Type	RNA	
3-79-3	Length	45	
3-79-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-79-5	Residues	atgcagtttt gtgtgtggaa tgtggatata agtatagatt ctttg	45
3-80	**Sequences**		
3-80-1	Sequence Number [ID]	80	
3-80-2	Molecule Type	RNA	
3-80-3	Length	45	
3-80-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-80-5	Residues	agttttgtgt gtggaatgtg gatataagta tagattcttt gggga	45
3-81	**Sequences**		
3-81-1	Sequence Number [ID]	81	
3-81-2	Molecule Type	RNA	
3-81-3	Length	45	
3-81-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-81-5	Residues	gttttgtgtg tggaatgtgg atataagtat agattctttg gggaa	45
3-82	**Sequences**		
3-82-1	Sequence Number [ID]	82	
3-82-2	Molecule Type	RNA	
3-82-3	Length	45	
3-82-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-82-5	Residues	ttttgtgtgt ggaatgtgga tataagtata gattctttgg ggaag	45
3-83	**Sequences**		
3-83-1	Sequence Number [ID]	83	
3-83-2	Molecule Type	RNA	
3-83-3	Length	45	
3-83-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-83-5	Residues	tttgtgtgtg gaatgtggat ataagtatag attctttggg gaaga	45
3-84	**Sequences**		
3-84-1	Sequence Number [ID]	84	
3-84-2	Molecule Type	RNA	
3-84-3	Length	45	
3-84-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-84-5	Residues	ttgtgtgtgg aatgtggata taagtataga ttctttgggg aagat	45
3-85	**Sequences**		
3-85-1	Sequence Number [ID]	85	
3-85-2	Molecule Type	RNA	
3-85-3	Length	45	
3-85-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-85-5	Residues	ccgagagctc aatatttatt gccatttaga tcacaacttt atgac	45
3-86	**Sequences**		
3-86-1	Sequence Number [ID]	86	
3-86-2	Molecule Type	RNA	
3-86-3	Length	45	
3-86-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-86-5	Residues	agagctcaat atttattgcc atttagatca caactttatg acagc	45

3-87	**Sequences**		
3-87-1	Sequence Number [ID]	87	
3-87-2	Molecule Type	RNA	
3-87-3	Length	45	
3-87-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-87-5	Residues	gagctcaata tttattgcca tttagatcac aactttatga cagca	45
3-88	**Sequences**		
3-88-1	Sequence Number [ID]	88	
3-88-2	Molecule Type	RNA	
3-88-3	Length	45	
3-88-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-88-5	Residues	agctcaatat ttattgccat ttagatcaca actttatgac agcaa	45
3-89	**Sequences**		
3-89-1	Sequence Number [ID]	89	
3-89-2	Molecule Type	RNA	
3-89-3	Length	45	
3-89-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-89-5	Residues	gctcaatatt tattgccatt tagatcacaa ctttatgaca gcaag	45
3-90	**Sequences**		
3-90-1	Sequence Number [ID]	90	
3-90-2	Molecule Type	RNA	
3-90-3	Length	45	
3-90-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-90-5	Residues	ctcaatattt attgccattt agatcacaac tttatgacag caagt	45
3-91	**Sequences**		
3-91-1	Sequence Number [ID]	91	
3-91-2	Molecule Type	RNA	
3-91-3	Length	45	
3-91-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-91-5	Residues	tcaatattta ttgccattta gatcacaact ttatgacagc aagta	45
3-92	**Sequences**		
3-92-1	Sequence Number [ID]	92	
3-92-2	Molecule Type	RNA	
3-92-3	Length	45	
3-92-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-92-5	Residues	caatatttat tgccatttag atcacaactt tatgacagca agtat	45
3-93	**Sequences**		
3-93-1	Sequence Number [ID]	93	
3-93-2	Molecule Type	RNA	
3-93-3	Length	45	
3-93-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-93-5	Residues	atttattgcc atttagatca caactttatg acagcaagta tacct	45
3-94	**Sequences**		

3-94-1	Sequence Number [ID]	94	
3-94-2	Molecule Type	RNA	
3-94-3	Length	45	
3-94-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-94-5	Residues	`tttattgcca tttagatcac aactttatga cagcaagtat accta`	45
3-95	**Sequences**		
3-95-1	Sequence Number [ID]	95	
3-95-2	Molecule Type	RNA	
3-95-3	Length	45	
3-95-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-95-5	Residues	`ttattgccat ttagatcaca actttatgac agcaagtata cctac`	45
3-96	**Sequences**		
3-96-1	Sequence Number [ID]	96	
3-96-2	Molecule Type	RNA	
3-96-3	Length	45	
3-96-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-96-5	Residues	`tattgccatt tagatcacaa ctttatgaca gcaagtatac ctact`	45
3-97	**Sequences**		
3-97-1	Sequence Number [ID]	97	
3-97-2	Molecule Type	RNA	
3-97-3	Length	45	
3-97-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-97-5	Residues	`attgccattt agatcacaac tttatgacag caagtatacc tactc`	45
3-98	**Sequences**		
3-98-1	Sequence Number [ID]	98	
3-98-2	Molecule Type	RNA	
3-98-3	Length	45	
3-98-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-98-5	Residues	`ttgccattta gatcacaact ttatgacagc aagtatacct actca`	45
3-99	**Sequences**		
3-99-1	Sequence Number [ID]	99	
3-99-2	Molecule Type	RNA	
3-99-3	Length	45	
3-99-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-99-5	Residues	`tgccatttag atcacaactt tatgacagca agtataccta ctcac`	45
3-100	**Sequences**		
3-100-1	Sequence Number [ID]	100	
3-100-2	Molecule Type	RNA	
3-100-3	Length	45	
3-100-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-100-5	Residues	`tttatgacag caagtatacc tactcacaga ctgtttgttc atgta`	45
3-101	**Sequences**		
3-101-1	Sequence Number [ID]	101	
3-101-2	Molecule Type	RNA	

3-101-3	Length	45	
3-101-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-101-5	Residues	gtggcaaaag gatataaggt gggagttgtg aagcaaactg aaact	45
3-102	**Sequences**		
3-102-1	Sequence Number [ID]	102	
3-102-2	Molecule Type	RNA	
3-102-3	Length	45	
3-102-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-102-5	Residues	tggcaaaagg atataaggtg ggagttgtga agcaaactga aactg	45
3-103	**Sequences**		
3-103-1	Sequence Number [ID]	103	
3-103-2	Molecule Type	RNA	
3-103-3	Length	45	
3-103-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-103-5	Residues	ggcaaaagga tataaggtgg gagttgtgaa gcaaactgaa actgc	45
3-104	**Sequences**		
3-104-1	Sequence Number [ID]	104	
3-104-2	Molecule Type	RNA	
3-104-3	Length	45	
3-104-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-104-5	Residues	caaaaggata taaggtggga gttgtgaagc aaactgaaac tgcag	45
3-105	**Sequences**		
3-105-1	Sequence Number [ID]	105	
3-105-2	Molecule Type	RNA	
3-105-3	Length	45	
3-105-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-105-5	Residues	aaaaggatat aaggtgggag ttgtgaagca aactgaaact gcagc	45
3-106	**Sequences**		
3-106-1	Sequence Number [ID]	106	
3-106-2	Molecule Type	RNA	
3-106-3	Length	45	
3-106-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-106-5	Residues	aaaggatata aggtgggagt tgtgaagcaa actgaaactg cagca	45
3-107	**Sequences**		
3-107-1	Sequence Number [ID]	107	
3-107-2	Molecule Type	RNA	
3-107-3	Length	45	
3-107-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-107-5	Residues	aaggatataa ggtgggagtt gtgaagcaaa ctgaaactgc agcat	45
3-108	**Sequences**		
3-108-1	Sequence Number [ID]	108	
3-108-2	Molecule Type	RNA	
3-108-3	Length	45	

3-108-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-108-5	Residues	aggatataag gtgggagttg tgaagcaaac tgaaactgca gcatt	45
3-109	**Sequences**		
3-109-1	Sequence Number [ID]	109	
3-109-2	Molecule Type	RNA	
3-109-3	Length	45	
3-109-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-109-5	Residues	ggatataagg tgggagttgt gaagcaaact gaaactgcag catta	45
3-110	**Sequences**		
3-110-1	Sequence Number [ID]	110	
3-110-2	Molecule Type	RNA	
3-110-3	Length	45	
3-110-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-110-5	Residues	gatataaggt gggagttgtg aagcaaactg aaactgcagc attaa	45
3-111	**Sequences**		
3-111-1	Sequence Number [ID]	111	
3-111-2	Molecule Type	RNA	
3-111-3	Length	45	
3-111-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-111-5	Residues	atataaggtg ggagttgtga agcaaactga aactgcagca ttaaa	45
3-112	**Sequences**		
3-112-1	Sequence Number [ID]	112	
3-112-2	Molecule Type	RNA	
3-112-3	Length	45	
3-112-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-112-5	Residues	tataaggtgg gagttgtgaa gcaaactgaa actgcagcat taaag	45
3-113	**Sequences**		
3-113-1	Sequence Number [ID]	113	
3-113-2	Molecule Type	RNA	
3-113-3	Length	45	
3-113-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-113-5	Residues	ataaggtggg agttgtgaag caaactgaaa ctgcagcatt aaagg	45
3-114	**Sequences**		
3-114-1	Sequence Number [ID]	114	
3-114-2	Molecule Type	RNA	
3-114-3	Length	45	
3-114-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-114-5	Residues	taaggtggga gttgtgaagc aaactgaaac tgcagcatta aaggc	45
3-115	**Sequences**		
3-115-1	Sequence Number [ID]	115	
3-115-2	Molecule Type	RNA	
3-115-3	Length	45	
3-115-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-115-5	Residues	aaggtgggag ttgtgaagca aactgaaact gcagcattaa aggcc	45
3-116	**Sequences**		
3-116-1	Sequence Number [ID]	116	
3-116-2	Molecule Type	RNA	
3-116-3	Length	45	
3-116-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-116-5	Residues	aggtgggagt tgtgaagcaa actgaaactg cagcattaaa ggcca	45
3-117	**Sequences**		
3-117-1	Sequence Number [ID]	117	
3-117-2	Molecule Type	RNA	
3-117-3	Length	45	
3-117-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-117-5	Residues	cagcattaaa ggccattgga gacaacagaa gttcactctt ttccc	45
3-118	**Sequences**		
3-118-1	Sequence Number [ID]	118	
3-118-2	Molecule Type	RNA	
3-118-3	Length	45	
3-118-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-118-5	Residues	gaagttcact cttttcccgg aaattgactg ccctttatac aaaat	45
3-119	**Sequences**		
3-119-1	Sequence Number [ID]	119	
3-119-2	Molecule Type	RNA	
3-119-3	Length	45	
3-119-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-119-5	Residues	ttcactcttt tcccggaaat tgactgccct ttatacaaaa tctac	45
3-120	**Sequences**		
3-120-1	Sequence Number [ID]	120	
3-120-2	Molecule Type	RNA	
3-120-3	Length	45	
3-120-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-120-5	Residues	tcttttcccg gaaattgact gcccttata caaaatctac actta	45
3-121	**Sequences**		
3-121-1	Sequence Number [ID]	121	
3-121-2	Molecule Type	RNA	
3-121-3	Length	45	
3-121-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-121-5	Residues	gtgaatcccc taatcaagct ggatgatgct gtaaatgttg atgag	45
3-122	**Sequences**		
3-122-1	Sequence Number [ID]	122	
3-122-2	Molecule Type	RNA	
3-122-3	Length	45	
3-122-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-122-5	Residues	ctggatgatg ctgtaaatgt tgatgagata atgactgata cttct	45
3-123	**Sequences**		
3-123-1	Sequence Number [ID]	123	
3-123-2	Molecule Type	RNA	
3-123-3	Length	45	
3-123-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-123-5	Residues	tgctgtaaat gttgatgaga taatgactga tacttctacc agcta	45
3-124	**Sequences**		
3-124-1	Sequence Number [ID]	124	
3-124-2	Molecule Type	RNA	
3-124-3	Length	45	
3-124-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-124-5	Residues	ttctaccagc tatcttctgt gcatctctga aaataaggaa aatgt	45
3-125	**Sequences**		
3-125-1	Sequence Number [ID]	125	
3-125-2	Molecule Type	RNA	
3-125-3	Length	45	
3-125-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-125-5	Residues	tctaccagct atcttctgtg catctctgaa aataaggaaa atgtt	45
3-126	**Sequences**		
3-126-1	Sequence Number [ID]	126	
3-126-2	Molecule Type	RNA	
3-126-3	Length	45	
3-126-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-126-5	Residues	ctaccagcta tcttctgtgc atctctgaaa ataaggaaaa tgtta	45
3-127	**Sequences**		
3-127-1	Sequence Number [ID]	127	
3-127-2	Molecule Type	RNA	
3-127-3	Length	45	
3-127-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-127-5	Residues	taccagctat cttctgtgca tctctgaaaa taaggaaaat gttag	45
3-128	**Sequences**		
3-128-1	Sequence Number [ID]	128	
3-128-2	Molecule Type	RNA	
3-128-3	Length	45	
3-128-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-128-5	Residues	accagctatc ttctgtgcat ctctgaaaat aaggaaaatg ttagg	45
3-129	**Sequences**		
3-129-1	Sequence Number [ID]	129	
3-129-2	Molecule Type	RNA	
3-129-3	Length	45	
3-129-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-129-5	Residues	ccagctatct tctgtgcatc tctgaaaata aggaaaatgt taggg	45

3-130	**Sequences**		
3-130-1	Sequence Number [ID]	130	
3-130-2	Molecule Type	RNA	
3-130-3	Length	45	
3-130-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-130-5	Residues	cagctatctt ctgtgcatct ctgaaaataa ggaaaatgtt aggga	45
3-131	**Sequences**		
3-131-1	Sequence Number [ID]	131	
3-131-2	Molecule Type	RNA	
3-131-3	Length	45	
3-131-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-131-5	Residues	agctatcttc tgtgcatctc tgaaaataag gaaaatgtta gggac	45
3-132	**Sequences**		
3-132-1	Sequence Number [ID]	132	
3-132-2	Molecule Type	RNA	
3-132-3	Length	45	
3-132-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-132-5	Residues	ctatcttctg tgcatctctg aaaataagga aaatgttagg gacaa	45
3-133	**Sequences**		
3-133-1	Sequence Number [ID]	133	
3-133-2	Molecule Type	RNA	
3-133-3	Length	45	
3-133-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-133-5	Residues	tatcttctgt gcatctctga aaataaggaa aatgttaggg acaaa	45
3-134	**Sequences**		
3-134-1	Sequence Number [ID]	134	
3-134-2	Molecule Type	RNA	
3-134-3	Length	45	
3-134-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-134-5	Residues	ctcgttcaga gctagaaacc cggatgtcaa gcctgcagcc agtag	45
3-135	**Sequences**		
3-135-1	Sequence Number [ID]	135	
3-135-2	Molecule Type	RNA	
3-135-3	Length	45	
3-135-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-135-5	Residues	tcagagctag aaacccggat gtcaagcctg cagccagtag agctg	45
3-136	**Sequences**		
3-136-1	Sequence Number [ID]	136	
3-136-2	Molecule Type	RNA	
3-136-3	Length	45	
3-136-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-136-5	Residues	ctagaaaccc ggatgtcaag cctgcagcca gtagagctgc tgctt	45
3-137	**Sequences**		

3-137-1	Sequence Number [ID]	137	
3-137-2	Molecule Type	RNA	
3-137-3	Length	45	
3-137-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-137-5	Residues	gtagagctgc tgcttccttc ggccttgtcc gagcaaacag aggcg	45
3-138	**Sequences**		
3-138-1	Sequence Number [ID]	138	
3-138-2	Molecule Type	RNA	
3-138-3	Length	45	
3-138-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-138-5	Residues	ttcggccttg tccgagcaaa cagaggcgct catccacaga gccac	45
3-139	**Sequences**		
3-139-1	Sequence Number [ID]	139	
3-139-2	Molecule Type	RNA	
3-139-3	Length	45	
3-139-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-139-5	Residues	agcaaacaga ggcgctcatc cacagagcca catctgttag tgtgc	45
3-140	**Sequences**		
3-140-1	Sequence Number [ID]	140	
3-140-2	Molecule Type	RNA	
3-140-3	Length	45	
3-140-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-140-5	Residues	gatggataac atttattttg aatacagcca tgctttccag gcagt	45
3-141	**Sequences**		
3-141-1	Sequence Number [ID]	141	
3-141-2	Molecule Type	RNA	
3-141-3	Length	45	
3-141-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-141-5	Residues	atggataaca tttattttga atacagccat gctttccagg cagtt	45
3-142	**Sequences**		
3-142-1	Sequence Number [ID]	142	
3-142-2	Molecule Type	RNA	
3-142-3	Length	45	
3-142-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-142-5	Residues	tggataacat ttattttgaa tacagccatg ctttccaggc agtta	45
3-143	**Sequences**		
3-143-1	Sequence Number [ID]	143	
3-143-2	Molecule Type	RNA	
3-143-3	Length	45	
3-143-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-143-5	Residues	ggataacatt tattttgaat acagccatgc tttccaggca gttac	45
3-144	**Sequences**		
3-144-1	Sequence Number [ID]	144	
3-144-2	Molecule Type	RNA	

3-144-3	Length	45	
3-144-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-144-5	Residues	gataacattt attttgaata cagccatgct ttccaggcag ttaca	45
3-145	**Sequences**		
3-145-1	Sequence Number [ID]	145	
3-145-2	Molecule Type	RNA	
3-145-3	Length	45	
3-145-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-145-5	Residues	ataacattta ttttgaatac agccatgctt tccaggcagt tacag	45
3-146	**Sequences**		
3-146-1	Sequence Number [ID]	146	
3-146-2	Molecule Type	RNA	
3-146-3	Length	45	
3-146-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-146-5	Residues	taacatttat tttgaataca gccatgcttt ccaggcagtt acaga	45
3-147	**Sequences**		
3-147-1	Sequence Number [ID]	147	
3-147-2	Molecule Type	RNA	
3-147-3	Length	45	
3-147-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-147-5	Residues	tgaatacagc catgctttcc aggcagttac agagttttat gcaaa	45
3-148	**Sequences**		
3-148-1	Sequence Number [ID]	148	
3-148-2	Molecule Type	RNA	
3-148-3	Length	45	
3-148-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-148-5	Residues	gaatacagcc atgctttcca ggcagttaca gagttttatg caaaa	45
3-149	**Sequences**		
3-149-1	Sequence Number [ID]	149	
3-149-2	Molecule Type	RNA	
3-149-3	Length	45	
3-149-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-149-5	Residues	aatacagcca tgctttccag gcagttacag agttttatgc aaaag	45
3-150	**Sequences**		
3-150-1	Sequence Number [ID]	150	
3-150-2	Molecule Type	RNA	
3-150-3	Length	45	
3-150-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-150-5	Residues	atacagccat gctttccagg cagttacaga gttttatgca aaaga	45
3-151	**Sequences**		
3-151-1	Sequence Number [ID]	151	
3-151-2	Molecule Type	RNA	
3-151-3	Length	45	

3-151-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-151-5	Residues	tacagccatg ctttccaggc agttacagag ttttatgcaa aagat	45
3-152	**Sequences**		
3-152-1	Sequence Number [ID]	152	
3-152-2	Molecule Type	RNA	
3-152-3	Length	45	
3-152-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-152-5	Residues	acagccatgc tttccaggca gttacagagt tttatgcaaa agata	45
3-153	**Sequences**		
3-153-1	Sequence Number [ID]	153	
3-153-2	Molecule Type	RNA	
3-153-3	Length	45	
3-153-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-153-5	Residues	cagccatgct ttccaggcag ttacagagtt ttatgcaaaa gatac	45
3-154	**Sequences**		
3-154-1	Sequence Number [ID]	154	
3-154-2	Molecule Type	RNA	
3-154-3	Length	45	
3-154-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-154-5	Residues	ggcagttaca gagttttatg caaaagatac agttgacatc aaagg	45
3-155	**Sequences**		
3-155-1	Sequence Number [ID]	155	
3-155-2	Molecule Type	RNA	
3-155-3	Length	45	
3-155-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-155-5	Residues	agttttatgc aaaagataca gttgacatca aaggttctca aatta	45
3-156	**Sequences**		
3-156-1	Sequence Number [ID]	156	
3-156-2	Molecule Type	RNA	
3-156-3	Length	45	
3-156-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-156-5	Residues	gttttatgca aaagatacag ttgacatcaa aggttctcaa attat	45
3-157	**Sequences**		
3-157-1	Sequence Number [ID]	157	
3-157-2	Molecule Type	RNA	
3-157-3	Length	45	
3-157-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-157-5	Residues	ttttatgcaa aagatacagt tgacatcaaa ggttctcaaa ttatt	45
3-158	**Sequences**		
3-158-1	Sequence Number [ID]	158	
3-158-2	Molecule Type	RNA	
3-158-3	Length	45	
3-158-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-158-5	Residues	tttatgcaaa agatacagtt gacatcaaag gttctcaaat tattt	45
3-159	**Sequences**		
3-159-1	Sequence Number [ID]	159	
3-159-2	Molecule Type	RNA	
3-159-3	Length	45	
3-159-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-159-5	Residues	ttatgcaaaa gatacagttg acatcaaagg ttctcaaatt atttc	45
3-160	**Sequences**		
3-160-1	Sequence Number [ID]	160	
3-160-2	Molecule Type	RNA	
3-160-3	Length	45	
3-160-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-160-5	Residues	tatgcaaaag atacagttga catcaaaggt tctcaaatta tttct	45
3-161	**Sequences**		
3-161-1	Sequence Number [ID]	161	
3-161-2	Molecule Type	RNA	
3-161-3	Length	45	
3-161-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-161-5	Residues	atgcaaaaga tacagttgac atcaaaggtt ctcaaattat ttctg	45
3-162	**Sequences**		
3-162-1	Sequence Number [ID]	162	
3-162-2	Molecule Type	RNA	
3-162-3	Length	45	
3-162-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-162-5	Residues	tgcaaaagat acagttgaca tcaaaggttc tcaaattatt tctgg	45
3-163	**Sequences**		
3-163-1	Sequence Number [ID]	163	
3-163-2	Molecule Type	RNA	
3-163-3	Length	45	
3-163-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-163-5	Residues	aaaggttctc aaattatttc tggcattgtt aacttagaga agcct	45
3-164	**Sequences**		
3-164-1	Sequence Number [ID]	164	
3-164-2	Molecule Type	RNA	
3-164-3	Length	45	
3-164-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-164-5	Residues	aaggttctca aattatttct ggcattgtta acttagagaa gcctg	45
3-165	**Sequences**		
3-165-1	Sequence Number [ID]	165	
3-165-2	Molecule Type	RNA	
3-165-3	Length	45	
3-165-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-165-5	Residues	aggttctcaa attatttctg gcattgttaa cttagagaag cctgt	45
3-166	**Sequences**		
3-166-1	Sequence Number [ID]	166	
3-166-2	Molecule Type	RNA	
3-166-3	Length	45	
3-166-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-166-5	Residues	ggttctcaaa ttatttctgg cattgttaac ttagagaagc ctgtg	45
3-167	**Sequences**		
3-167-1	Sequence Number [ID]	167	
3-167-2	Molecule Type	RNA	
3-167-3	Length	45	
3-167-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-167-5	Residues	gttctcaaat tatttctggc attgttaact tagagaagcc tgtga	45
3-168	**Sequences**		
3-168-1	Sequence Number [ID]	168	
3-168-2	Molecule Type	RNA	
3-168-3	Length	45	
3-168-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-168-5	Residues	ttctcaaatt atttctggca ttgttaactt agagaagcct gtgat	45
3-169	**Sequences**		
3-169-1	Sequence Number [ID]	169	
3-169-2	Molecule Type	RNA	
3-169-3	Length	45	
3-169-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-169-5	Residues	tctcaaatta tttctggcat tgttaactta gagaagcctg tgatt	45
3-170	**Sequences**		
3-170-1	Sequence Number [ID]	170	
3-170-2	Molecule Type	RNA	
3-170-3	Length	45	
3-170-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-170-5	Residues	atttctggca ttgttaactt agagaagcct gtgatttgct ctttg	45
3-171	**Sequences**		
3-171-1	Sequence Number [ID]	171	
3-171-2	Molecule Type	RNA	
3-171-3	Length	45	
3-171-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-171-5	Residues	ttagagaagc ctgtgatttg ctctttggct gccatcataa aatac	45
3-172	**Sequences**		
3-172-1	Sequence Number [ID]	172	
3-172-2	Molecule Type	RNA	
3-172-3	Length	45	
3-172-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-172-5	Residues	gaagcctgtg atttgctctt tggctgccat cataaaatac ctcaa	45

3-173	**Sequences**		
3-173-1	Sequence Number [ID]	173	
3-173-2	Molecule Type	RNA	
3-173-3	Length	45	
3-173-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-173-5	Residues	gtgatttgct ctttggctgc catcataaaa tacctcaaag aattc	45
3-174	**Sequences**		
3-174-1	Sequence Number [ID]	174	
3-174-2	Molecule Type	RNA	
3-174-3	Length	45	
3-174-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-174-5	Residues	gatttgctct ttggctgcca tcataaaata cctcaaagaa ttcaa	45
3-175	**Sequences**		
3-175-1	Sequence Number [ID]	175	
3-175-2	Molecule Type	RNA	
3-175-3	Length	45	
3-175-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-175-5	Residues	atttgctctt tggctgccat cataaaatac ctcaaagaat tcaac	45
3-176	**Sequences**		
3-176-1	Sequence Number [ID]	176	
3-176-2	Molecule Type	RNA	
3-176-3	Length	45	
3-176-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-176-5	Residues	tttgctcttt ggctgccatc ataaaatacc tcaaagaatt caact	45
3-177	**Sequences**		
3-177-1	Sequence Number [ID]	177	
3-177-2	Molecule Type	RNA	
3-177-3	Length	45	
3-177-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-177-5	Residues	ttgctctttg gctgccatca taaaatacct caaagaattc aactt	45
3-178	**Sequences**		
3-178-1	Sequence Number [ID]	178	
3-178-2	Molecule Type	RNA	
3-178-3	Length	45	
3-178-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-178-5	Residues	tgctctttgg ctgccatcat aaaatacctc aaagaattca acttg	45
3-179	**Sequences**		
3-179-1	Sequence Number [ID]	179	
3-179-2	Molecule Type	RNA	
3-179-3	Length	45	
3-179-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-179-5	Residues	gctctttggc tgccatcata aaatacctca aagaattcaa cttgg	45
3-180	**Sequences**		

3-180-1	Sequence Number [ID]	180	
3-180-2	Molecule Type	RNA	
3-180-3	Length	45	
3-180-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-180-5	Residues	ctctttggct gccatcataa aatacctcaa agaattcaac ttgga	45
3-181	**Sequences**		
3-181-1	Sequence Number [ID]	181	
3-181-2	Molecule Type	RNA	
3-181-3	Length	45	
3-181-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-181-5	Residues	catcataaaa tacctcaaag aattcaactt ggaaaagatg ctctc	45
3-182	**Sequences**		
3-182-1	Sequence Number [ID]	182	
3-182-2	Molecule Type	RNA	
3-182-3	Length	45	
3-182-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-182-5	Residues	atacctcaaa gaattcaact tggaaaagat gctctccaaa cctga	45
3-183	**Sequences**		
3-183-1	Sequence Number [ID]	183	
3-183-2	Molecule Type	RNA	
3-183-3	Length	45	
3-183-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-183-5	Residues	agatgctctc caaacctgag aattttaaac agctatcaag taaaa	45
3-184	**Sequences**		
3-184-1	Sequence Number [ID]	184	
3-184-2	Molecule Type	RNA	
3-184-3	Length	45	
3-184-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-184-5	Residues	gatgctctcc aaacctgaga attttaaaca gctatcaagt aaaat	45
3-185	**Sequences**		
3-185-1	Sequence Number [ID]	185	
3-185-2	Molecule Type	RNA	
3-185-3	Length	45	
3-185-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-185-5	Residues	atgctctcca aacctgagaa ttttaaacag ctatcaagta aaatg	45
3-186	**Sequences**		
3-186-1	Sequence Number [ID]	186	
3-186-2	Molecule Type	RNA	
3-186-3	Length	45	
3-186-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-186-5	Residues	tgctctccaa acctgagaat tttaaacagc tatcaagtaa aatgg	45
3-187	**Sequences**		
3-187-1	Sequence Number [ID]	187	
3-187-2	Molecule Type	RNA	

3-187-3	Length	45	
3-187-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-187-5	Residues	gctctccaaa cctgagaatt ttaaacagct atcaagtaaa atgga	45
3-188	**Sequences**		
3-188-1	Sequence Number [ID]	188	
3-188-2	Molecule Type	RNA	
3-188-3	Length	45	
3-188-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-188-5	Residues	tttatgacaa ttaatggaac aacattaagg aatctggaaa tccta	45
3-189	**Sequences**		
3-189-1	Sequence Number [ID]	189	
3-189-2	Molecule Type	RNA	
3-189-3	Length	45	
3-189-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-189-5	Residues	ttatgacaat taatggaaca acattaagga atctggaaat cctac	45
3-190	**Sequences**		
3-190-1	Sequence Number [ID]	190	
3-190-2	Molecule Type	RNA	
3-190-3	Length	45	
3-190-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-190-5	Residues	tatgacaatt aatggaacaa cattaaggaa tctggaaatc ctaca	45
3-191	**Sequences**		
3-191-1	Sequence Number [ID]	191	
3-191-2	Molecule Type	RNA	
3-191-3	Length	45	
3-191-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-191-5	Residues	atgacaatta atggaacaac attaaggaat ctggaaatcc tacag	45
3-192	**Sequences**		
3-192-1	Sequence Number [ID]	192	
3-192-2	Molecule Type	RNA	
3-192-3	Length	45	
3-192-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-192-5	Residues	tgacaattaa tggaacaaca ttaaggaatc tggaaatcct acaga	45
3-193	**Sequences**		
3-193-1	Sequence Number [ID]	193	
3-193-2	Molecule Type	RNA	
3-193-3	Length	45	
3-193-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-193-5	Residues	aggaatctgg aaatcctaca gaatcagact gatatgaaaa ccaaa	45
3-194	**Sequences**		
3-194-1	Sequence Number [ID]	194	
3-194-2	Molecule Type	RNA	
3-194-3	Length	45	

3-194-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-194-5	Residues	ggaatctgga aatcctacag aatcagactg atatgaaaac caaag	45
3-195	**Sequences**		
3-195-1	Sequence Number [ID]	195	
3-195-2	Molecule Type	RNA	
3-195-3	Length	45	
3-195-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-195-5	Residues	gaatctggaa atcctacaga atcagactga tatgaaaacc aaagg	45
3-196	**Sequences**		
3-196-1	Sequence Number [ID]	196	
3-196-2	Molecule Type	RNA	
3-196-3	Length	45	
3-196-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-196-5	Residues	aatctggaaa tcctacagaa tcagactgat atgaaaacca aagga	45
3-197	**Sequences**		
3-197-1	Sequence Number [ID]	197	
3-197-2	Molecule Type	RNA	
3-197-3	Length	45	
3-197-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-197-5	Residues	atctggaaat cctacagaat cagactgata tgaaaaccaa aggaa	45
3-198	**Sequences**		
3-198-1	Sequence Number [ID]	198	
3-198-2	Molecule Type	RNA	
3-198-3	Length	45	
3-198-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-198-5	Residues	tctggaaatc ctacagaatc agactgatat gaaaaccaaa ggaag	45
3-199	**Sequences**		
3-199-1	Sequence Number [ID]	199	
3-199-2	Molecule Type	RNA	
3-199-3	Length	45	
3-199-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-199-5	Residues	tggaaatcct acagaatcag actgatatga aaaccaaagg aagtt	45
3-200	**Sequences**		
3-200-1	Sequence Number [ID]	200	
3-200-2	Molecule Type	RNA	
3-200-3	Length	45	
3-200-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-200-5	Residues	aaatcctaca gaatcagact gatatgaaaa ccaaaggaag tttgc	45
3-201	**Sequences**		
3-201-1	Sequence Number [ID]	201	
3-201-2	Molecule Type	RNA	
3-201-3	Length	45	
3-201-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-201-5	Residues	caaaggaagt ttgctgtggg ttttagacca cactaaaact tcatt	45
3-202	**Sequences**		
3-202-1	Sequence Number [ID]	202	
3-202-2	Molecule Type	RNA	
3-202-3	Length	45	
3-202-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-202-5	Residues	aaaggaagtt tgctgtgggt tttagaccac actaaaactt cattt	45
3-203	**Sequences**		
3-203-1	Sequence Number [ID]	203	
3-203-2	Molecule Type	RNA	
3-203-3	Length	45	
3-203-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-203-5	Residues	aaggaagttt gctgtgggtt ttagaccaca ctaaaacttc atttg	45
3-204	**Sequences**		
3-204-1	Sequence Number [ID]	204	
3-204-2	Molecule Type	RNA	
3-204-3	Length	45	
3-204-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-204-5	Residues	accacactaa aacttcattt gggagacgga agttaaagaa gtggg	45
3-205	**Sequences**		
3-205-1	Sequence Number [ID]	205	
3-205-2	Molecule Type	RNA	
3-205-3	Length	45	
3-205-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-205-5	Residues	ttaaagaagt gggtgaccca gccactcctt aaattaaggg aaata	45
3-206	**Sequences**		
3-206-1	Sequence Number [ID]	206	
3-206-2	Molecule Type	RNA	
3-206-3	Length	45	
3-206-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-206-5	Residues	gaaataaatg cccggcttga tgctgtatcg gaagttctcc attca	45
3-207	**Sequences**		
3-207-1	Sequence Number [ID]	207	
3-207-2	Molecule Type	RNA	
3-207-3	Length	45	
3-207-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-207-5	Residues	aaataaatgc ccggcttgat gctgtatcgg aagttctcca ttcag	45
3-208	**Sequences**		
3-208-1	Sequence Number [ID]	208	
3-208-2	Molecule Type	RNA	
3-208-3	Length	45	
3-208-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-208-5	Residues	aataaatgcc cggcttgatg ctgtatcgga agttctccat tcaga	45
3-209	**Sequences**		
3-209-1	Sequence Number [ID]	209	
3-209-2	Molecule Type	RNA	
3-209-3	Length	45	
3-209-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-209-5	Residues	ataaatgccc ggcttgatgc tgtatcggaa gttctccatt cagaa	45
3-210	**Sequences**		
3-210-1	Sequence Number [ID]	210	
3-210-2	Molecule Type	RNA	
3-210-3	Length	45	
3-210-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-210-5	Residues	taaatgcccg gcttgatgct gtatcggaag ttctccattc agaat	45
3-211	**Sequences**		
3-211-1	Sequence Number [ID]	211	
3-211-2	Molecule Type	RNA	
3-211-3	Length	45	
3-211-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-211-5	Residues	aaatgcccgg cttgatgctg tatcggaagt tctccattca gaatc	45
3-212	**Sequences**		
3-212-1	Sequence Number [ID]	212	
3-212-2	Molecule Type	RNA	
3-212-3	Length	45	
3-212-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-212-5	Residues	aatgcccggc ttgatgctgt atcggaagtt ctccattcag aatct	45
3-213	**Sequences**		
3-213-1	Sequence Number [ID]	213	
3-213-2	Molecule Type	RNA	
3-213-3	Length	45	
3-213-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-213-5	Residues	cattcagaat ctagtgtgtt tggtcagata gaaaatcatc tacgt	45
3-214	**Sequences**		
3-214-1	Sequence Number [ID]	214	
3-214-2	Molecule Type	RNA	
3-214-3	Length	45	
3-214-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-214-5	Residues	ttcagaatct agtgtgtttg gtcagataga aaatcatcta cgtaa	45
3-215	**Sequences**		
3-215-1	Sequence Number [ID]	215	
3-215-2	Molecule Type	RNA	
3-215-3	Length	45	
3-215-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-215-5	Residues	tcagaatcta gtgtgtttgg tcagatagaa aatcatctac gtaaa	45

3-216	**Sequences**		
3-216-1	Sequence Number [ID]	216	
3-216-2	Molecule Type	RNA	
3-216-3	Length	45	
3-216-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-216-5	Residues	cagaatctag tgtgtttggt cagatagaaa atcatctacg taaat	45
3-217	**Sequences**		
3-217-1	Sequence Number [ID]	217	
3-217-2	Molecule Type	RNA	
3-217-3	Length	45	
3-217-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-217-5	Residues	agaatctagt gtgtttggtc agatagaaaa tcatctacgt aaatt	45
3-218	**Sequences**		
3-218-1	Sequence Number [ID]	218	
3-218-2	Molecule Type	RNA	
3-218-3	Length	45	
3-218-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-218-5	Residues	gaatctagtg tgtttggtca gatagaaaat catctacgta aattg	45
3-219	**Sequences**		
3-219-1	Sequence Number [ID]	219	
3-219-2	Molecule Type	RNA	
3-219-3	Length	45	
3-219-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-219-5	Residues	gaaaatcatc tacgtaaatt gcccgacata gagaggggac tctgt	45
3-220	**Sequences**		
3-220-1	Sequence Number [ID]	220	
3-220-2	Molecule Type	RNA	
3-220-3	Length	45	
3-220-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-220-5	Residues	gacatagaga ggggactctg tagcatttat cacaaaaaat gttct	45
3-221	**Sequences**		
3-221-1	Sequence Number [ID]	221	
3-221-2	Molecule Type	RNA	
3-221-3	Length	45	
3-221-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-221-5	Residues	acatagagag gggactctgt agcatttatc acaaaaaatg ttcta	45
3-222	**Sequences**		
3-222-1	Sequence Number [ID]	222	
3-222-2	Molecule Type	RNA	
3-222-3	Length	45	
3-222-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-222-5	Residues	catagagagg ggactctgta gcatttatca caaaaaatgt tctac	45
3-223	**Sequences**		

3-223-1	Sequence Number [ID]	223	
3-223-2	Molecule Type	RNA	
3-223-3	Length	45	
3-223-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-223-5	Residues	atttatcaca aaaaatgttc tacccaagag ttcttcttga ttgtc	45
3-224	**Sequences**		
3-224-1	Sequence Number [ID]	224	
3-224-2	Molecule Type	RNA	
3-224-3	Length	45	
3-224-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-224-5	Residues	ttatcacaaa aaatgttcta cccaagagtt cttcttgatt gtcaa	45
3-225	**Sequences**		
3-225-1	Sequence Number [ID]	225	
3-225-2	Molecule Type	RNA	
3-225-3	Length	45	
3-225-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-225-5	Residues	tatcacaaaa aatgttctac ccaagagttc ttcttgattg tcaaa	45
3-226	**Sequences**		
3-226-1	Sequence Number [ID]	226	
3-226-2	Molecule Type	RNA	
3-226-3	Length	45	
3-226-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-226-5	Residues	atcacaaaaa atgttctacc caagagttct tcttgattgt caaaa	45
3-227	**Sequences**		
3-227-1	Sequence Number [ID]	227	
3-227-2	Molecule Type	RNA	
3-227-3	Length	45	
3-227-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-227-5	Residues	tcacaaaaaa tgttctaccc aagagttctt cttgattgtc aaaac	45
3-228	**Sequences**		
3-228-1	Sequence Number [ID]	228	
3-228-2	Molecule Type	RNA	
3-228-3	Length	45	
3-228-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-228-5	Residues	cacaaaaaat gttctaccca agagttcttc ttgattgtca aaact	45
3-229	**Sequences**		
3-229-1	Sequence Number [ID]	229	
3-229-2	Molecule Type	RNA	
3-229-3	Length	45	
3-229-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-229-5	Residues	acaaaaaatg ttctacccaa gagttcttct tgattgtcaa aactt	45
3-230	**Sequences**		
3-230-1	Sequence Number [ID]	230	
3-230-2	Molecule Type	RNA	

3-230-3	Length	45	
3-230-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-230-5	Residues	ttctacccaa gagttcttct tgattgtcaa aactttatat cacct	45
3-231	**Sequences**		
3-231-1	Sequence Number [ID]	231	
3-231-2	Molecule Type	RNA	
3-231-3	Length	45	
3-231-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-231-5	Residues	ttgtcaaaac tttatatcac ctaaagtcag aatttcaagc aataa	45
3-232	**Sequences**		
3-232-1	Sequence Number [ID]	232	
3-232-2	Molecule Type	RNA	
3-232-3	Length	45	
3-232-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-232-5	Residues	tgtcaaaact ttatatcacc taaagtcaga atttcaagca ataat	45
3-233	**Sequences**		
3-233-1	Sequence Number [ID]	233	
3-233-2	Molecule Type	RNA	
3-233-3	Length	45	
3-233-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-233-5	Residues	gtcaaaactt tatatcacct aaagtcagaa tttcaagcaa taata	45
3-234	**Sequences**		
3-234-1	Sequence Number [ID]	234	
3-234-2	Molecule Type	RNA	
3-234-3	Length	45	
3-234-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-234-5	Residues	tcaaaacttt atatcaccta aagtcagaat ttcaagcaat aatac	45
3-235	**Sequences**		
3-235-1	Sequence Number [ID]	235	
3-235-2	Molecule Type	RNA	
3-235-3	Length	45	
3-235-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-235-5	Residues	caaaacttta tatcacctaa agtcagaatt tcaagcaata atacc	45
3-236	**Sequences**		
3-236-1	Sequence Number [ID]	236	
3-236-2	Molecule Type	RNA	
3-236-3	Length	45	
3-236-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-236-5	Residues	cctaaagtca gaatttcaag caataatacc tgctgttaat tccca	45
3-237	**Sequences**		
3-237-1	Sequence Number [ID]	237	
3-237-2	Molecule Type	RNA	
3-237-3	Length	45	

3-237-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-237-5	Residues	gaatttcaag caataatacc tgctgttaat tcccacattc agtca	45
3-238	**Sequences**		
3-238-1	Sequence Number [ID]	238	
3-238-2	Molecule Type	RNA	
3-238-3	Length	45	
3-238-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-238-5	Residues	atttcaagca ataatacctg ctgttaattc ccacattcag tcaga	45
3-239	**Sequences**		
3-239-1	Sequence Number [ID]	239	
3-239-2	Molecule Type	RNA	
3-239-3	Length	45	
3-239-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-239-5	Residues	ttaattccca cattcagtca gacttgctcc ggaccgttat tttag	45
3-240	**Sequences**		
3-240-1	Sequence Number [ID]	240	
3-240-2	Molecule Type	RNA	
3-240-3	Length	45	
3-240-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-240-5	Residues	attttagaaa ttcctgaact cctcagtcca gtggagcatt actta	45
3-241	**Sequences**		
3-241-1	Sequence Number [ID]	241	
3-241-2	Molecule Type	RNA	
3-241-3	Length	45	
3-241-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-241-5	Residues	ttcctgaact cctcagtcca gtggagcatt acttaaagat actca	45
3-242	**Sequences**		
3-242-1	Sequence Number [ID]	242	
3-242-2	Molecule Type	RNA	
3-242-3	Length	45	
3-242-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-242-5	Residues	cctgaactcc tcagtccagt ggagcattac ttaaagatac tcaat	45
3-243	**Sequences**		
3-243-1	Sequence Number [ID]	243	
3-243-2	Molecule Type	RNA	
3-243-3	Length	45	
3-243-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-243-5	Residues	aaaactgaat tatttaaaga cctttctgac ttccctttaa taaaa	45
3-244	**Sequences**		
3-244-1	Sequence Number [ID]	244	
3-244-2	Molecule Type	RNA	
3-244-3	Length	45	
3-244-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-244-5	Residues	gaattattta aagacctttc tgacttccct ttaataaaaa agagg	45
3-245	**Sequences**		
3-245-1	Sequence Number [ID]	245	
3-245-2	Molecule Type	RNA	
3-245-3	Length	45	
3-245-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-245-5	Residues	aattatttaa agacctttct gacttccctt taataaaaaa gagga	45
3-246	**Sequences**		
3-246-1	Sequence Number [ID]	246	
3-246-2	Molecule Type	RNA	
3-246-3	Length	45	
3-246-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-246-5	Residues	attatttaaa gacctttctg acttcccttt aataaaaaag aggaa	45
3-247	**Sequences**		
3-247-1	Sequence Number [ID]	247	
3-247-2	Molecule Type	RNA	
3-247-3	Length	45	
3-247-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-247-5	Residues	ttatttaaag acctttctga cttcccttta ataaaaaaga ggaag	45
3-248	**Sequences**		
3-248-1	Sequence Number [ID]	248	
3-248-2	Molecule Type	RNA	
3-248-3	Length	45	
3-248-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-248-5	Residues	tatttaaaga cctttctgac ttcccttaa taaaaaagag gaagg	45
3-249	**Sequences**		
3-249-1	Sequence Number [ID]	249	
3-249-2	Molecule Type	RNA	
3-249-3	Length	45	
3-249-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-249-5	Residues	gaaattcaag gtgttattga cgagatccga atgcatttgc aagaa	45
3-250	**Sequences**		
3-250-1	Sequence Number [ID]	250	
3-250-2	Molecule Type	RNA	
3-250-3	Length	45	
3-250-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-250-5	Residues	gtgttattga cgagatccga atgcatttgc aagaaatacg aaaaa	45
3-251	**Sequences**		
3-251-1	Sequence Number [ID]	251	
3-251-2	Molecule Type	RNA	
3-251-3	Length	45	
3-251-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-251-5	Residues	tgttattgac gagatccgaa tgcatttgca agaaatacga aaaat	45
3-252	**Sequences**		
3-252-1	Sequence Number [ID]	252	
3-252-2	Molecule Type	RNA	
3-252-3	Length	45	
3-252-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-252-5	Residues	gttattgacg agatccgaat gcatttgcaa gaaatacgaa aaata	45
3-253	**Sequences**		
3-253-1	Sequence Number [ID]	253	
3-253-2	Molecule Type	RNA	
3-253-3	Length	45	
3-253-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-253-5	Residues	ttattgacga gatccgaatg catttgcaag aaatacgaaa aatac	45
3-254	**Sequences**		
3-254-1	Sequence Number [ID]	254	
3-254-2	Molecule Type	RNA	
3-254-3	Length	45	
3-254-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-254-5	Residues	tattgacgag atccgaatgc atttgcaaga aatacgaaaa atact	45
3-255	**Sequences**		
3-255-1	Sequence Number [ID]	255	
3-255-2	Molecule Type	RNA	
3-255-3	Length	45	
3-255-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-255-5	Residues	gacgagatcc gaatgcattt gcaagaaata cgaaaaatac taaaa	45
3-256	**Sequences**		
3-256-1	Sequence Number [ID]	256	
3-256-2	Molecule Type	RNA	
3-256-3	Length	45	
3-256-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-256-5	Residues	ttctgcacaa tatgtgacag tatcaggaca ggagtttatg ataga	45
3-257	**Sequences**		
3-257-1	Sequence Number [ID]	257	
3-257-2	Molecule Type	RNA	
3-257-3	Length	45	
3-257-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-257-5	Residues	tctgcacaat atgtgacagt atcaggacag gagtttatga tagaa	45
3-258	**Sequences**		
3-258-1	Sequence Number [ID]	258	
3-258-2	Molecule Type	RNA	
3-258-3	Length	45	
3-258-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-258-5	Residues	ctgcacaata tgtgacagta tcaggacagg agtttatgat agaaa	45

3-259	**Sequences**		
3-259-1	Sequence Number [ID]	259	
3-259-2	Molecule Type	RNA	
3-259-3	Length	45	
3-259-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-259-5	Residues	tgcacaatat gtgacagtat caggacagga gtttatgata gaaat	45
3-260	**Sequences**		
3-260-1	Sequence Number [ID]	260	
3-260-2	Molecule Type	RNA	
3-260-3	Length	45	
3-260-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-260-5	Residues	gcacaatatg tgacagtatc aggacaggag tttatgatag aaata	45
3-261	**Sequences**		
3-261-1	Sequence Number [ID]	261	
3-261-2	Molecule Type	RNA	
3-261-3	Length	45	
3-261-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-261-5	Residues	cacaatatgt gacagtatca ggacaggagt ttatgataga aataa	45
3-262	**Sequences**		
3-262-1	Sequence Number [ID]	262	
3-262-2	Molecule Type	RNA	
3-262-3	Length	45	
3-262-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-262-5	Residues	acaatatgtg acagtatcag gacaggagtt tatgatagaa ataaa	45
3-263	**Sequences**		
3-263-1	Sequence Number [ID]	263	
3-263-2	Molecule Type	RNA	
3-263-3	Length	45	
3-263-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-263-5	Residues	tcaggacagg agtttatgat agaaataaag aactctgctg tatct	45
3-264	**Sequences**		
3-264-1	Sequence Number [ID]	264	
3-264-2	Molecule Type	RNA	
3-264-3	Length	45	
3-264-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-264-5	Residues	caggacagga gtttatgata gaaataaaga actctgctgt atctt	45
3-265	**Sequences**		
3-265-1	Sequence Number [ID]	265	
3-265-2	Molecule Type	RNA	
3-265-3	Length	45	
3-265-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-265-5	Residues	aggacaggag tttatgatag aaataaagaa ctctgctgta tcttg	45
3-266	**Sequences**		

3-266-1	Sequence Number [ID]	266	
3-266-2	Molecule Type	RNA	
3-266-3	Length	45	
3-266-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-266-5	Residues	ggacaggagt ttatgataga aataaagaac tctgctgtat cttgt	45
3-267	**Sequences**		
3-267-1	Sequence Number [ID]	267	
3-267-2	Molecule Type	RNA	
3-267-3	Length	45	
3-267-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-267-5	Residues	gacaggagtt tatgatagaa ataaagaact ctgctgtatc ttgta	45
3-268	**Sequences**		
3-268-1	Sequence Number [ID]	268	
3-268-2	Molecule Type	RNA	
3-268-3	Length	45	
3-268-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-268-5	Residues	taaagaactc tgctgtatct tgtataccaa ctgattgggt aaagg	45
3-269	**Sequences**		
3-269-1	Sequence Number [ID]	269	
3-269-2	Molecule Type	RNA	
3-269-3	Length	45	
3-269-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-269-5	Residues	taccaactga ttgggtaaag gttggaagca caaaagctgt gagcc	45
3-270	**Sequences**		
3-270-1	Sequence Number [ID]	270	
3-270-2	Molecule Type	RNA	
3-270-3	Length	45	
3-270-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-270-5	Residues	tgattgggta aaggttggaa gcacaaaagc tgtgagccgc tttca	45
3-271	**Sequences**		
3-271-1	Sequence Number [ID]	271	
3-271-2	Molecule Type	RNA	
3-271-3	Length	45	
3-271-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-271-5	Residues	gattgggtaa aggttggaag cacaaaagct gtgagccgct ttcac	45
3-272	**Sequences**		
3-272-1	Sequence Number [ID]	272	
3-272-2	Molecule Type	RNA	
3-272-3	Length	45	
3-272-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-272-5	Residues	attgggtaaa ggttggaagc acaaaagctg tgagccgctt tcact	45
3-273	**Sequences**		
3-273-1	Sequence Number [ID]	273	
3-273-2	Molecule Type	RNA	

3-273-3	Length	45	
3-273-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-273-5	Residues	ttgggtaaag gttggaagca caaaagctgt gagccgcttt cactc	45
3-274	**Sequences**		
3-274-1	Sequence Number [ID]	274	
3-274-2	Molecule Type	RNA	
3-274-3	Length	45	
3-274-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-274-5	Residues	tgggtaaagg ttggaagcac aaaagctgtg agccgctttc actct	45
3-275	**Sequences**		
3-275-1	Sequence Number [ID]	275	
3-275-2	Molecule Type	RNA	
3-275-3	Length	45	
3-275-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-275-5	Residues	gggtaaaggt tggaagcaca aaagctgtga gccgctttca ctctc	45
3-276	**Sequences**		
3-276-1	Sequence Number [ID]	276	
3-276-2	Molecule Type	RNA	
3-276-3	Length	45	
3-276-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-276-5	Residues	ggtaaaggtt ggaagcacaa aagctgtgag ccgctttcac tctcc	45
3-277	**Sequences**		
3-277-1	Sequence Number [ID]	277	
3-277-2	Molecule Type	RNA	
3-277-3	Length	45	
3-277-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-277-5	Residues	gaagcacaaa agctgtgagc cgctttcact ctccttttat tgtag	45
3-278	**Sequences**		
3-278-1	Sequence Number [ID]	278	
3-278-2	Molecule Type	RNA	
3-278-3	Length	45	
3-278-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-278-5	Residues	aagcacaaaa gctgtgagcc gctttcactc tcctttatt gtaga	45
3-279	**Sequences**		
3-279-1	Sequence Number [ID]	279	
3-279-2	Molecule Type	RNA	
3-279-3	Length	45	
3-279-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-279-5	Residues	agcacaaaag ctgtgagccg ctttcactct ccttttattg tagaa	45
3-280	**Sequences**		
3-280-1	Sequence Number [ID]	280	
3-280-2	Molecule Type	RNA	
3-280-3	Length	45	

3-280-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-280-5	Residues	gcacaaaagc tgtgagccgc tttcactctc cttttattgt agaaa	45
3-281	**Sequences**		
3-281-1	Sequence Number [ID]	281	
3-281-2	Molecule Type	RNA	
3-281-3	Length	45	
3-281-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-281-5	Residues	cacaaaagct gtgagccgct ttcactctcc ttttattgta gaaaa	45
3-282	**Sequences**		
3-282-1	Sequence Number [ID]	282	
3-282-2	Molecule Type	RNA	
3-282-3	Length	45	
3-282-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-282-5	Residues	acaaaagctg tgagccgctt tcactctcct tttattgtag aaaat	45
3-283	**Sequences**		
3-283-1	Sequence Number [ID]	283	
3-283-2	Molecule Type	RNA	
3-283-3	Length	45	
3-283-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-283-5	Residues	agctagtcct tgactgcagt gctgaatggc ttgattttct agaga	45
3-284	**Sequences**		
3-284-1	Sequence Number [ID]	284	
3-284-2	Molecule Type	RNA	
3-284-3	Length	45	
3-284-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-284-5	Residues	gctagtcctt gactgcagtg ctgaatggct tgattttcta gagaa	45
3-285	**Sequences**		
3-285-1	Sequence Number [ID]	285	
3-285-2	Molecule Type	RNA	
3-285-3	Length	45	
3-285-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-285-5	Residues	ctagtccttg actgcagtgc tgaatggctt gattttctag agaaa	45
3-286	**Sequences**		
3-286-1	Sequence Number [ID]	286	
3-286-2	Molecule Type	RNA	
3-286-3	Length	45	
3-286-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-286-5	Residues	tagtccttga ctgcagtgct gaatggcttg attttctaga gaaat	45
3-287	**Sequences**		
3-287-1	Sequence Number [ID]	287	
3-287-2	Molecule Type	RNA	
3-287-3	Length	45	
3-287-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-287-5	Residues	agtccttgac tgcagtgctg aatggcttga ttttctagag aaatt	45
3-288	**Sequences**		
3-288-1	Sequence Number [ID]	288	
3-288-2	Molecule Type	RNA	
3-288-3	Length	45	
3-288-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-288-5	Residues	ccttgactgc agtgctgaat ggcttgattt tctagagaaa ttcag	45
3-289	**Sequences**		
3-289-1	Sequence Number [ID]	289	
3-289-2	Molecule Type	RNA	
3-289-3	Length	45	
3-289-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-289-5	Residues	cttgactgca gtgctgaatg gcttgatttt ctagagaaat tcagt	45
3-290	**Sequences**		
3-290-1	Sequence Number [ID]	290	
3-290-2	Molecule Type	RNA	
3-290-3	Length	45	
3-290-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-290-5	Residues	ttgactgcag tgctgaatgg cttgattttc tagagaaatt cagtg	45
3-291	**Sequences**		
3-291-1	Sequence Number [ID]	291	
3-291-2	Molecule Type	RNA	
3-291-3	Length	45	
3-291-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-291-5	Residues	tgactgcagt gctgaatggc ttgattttct agagaaattc agtga	45
3-292	**Sequences**		
3-292-1	Sequence Number [ID]	292	
3-292-2	Molecule Type	RNA	
3-292-3	Length	45	
3-292-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-292-5	Residues	gactgcagtg ctgaatggct tgattttcta gagaaattca gtgaa	45
3-293	**Sequences**		
3-293-1	Sequence Number [ID]	293	
3-293-2	Molecule Type	RNA	
3-293-3	Length	45	
3-293-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-293-5	Residues	actgcagtgc tgaatggctt gattttctag agaaattcag tgaac	45
3-294	**Sequences**		
3-294-1	Sequence Number [ID]	294	
3-294-2	Molecule Type	RNA	
3-294-3	Length	45	
3-294-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-294-5	Residues	ctgcagtgct gaatggcttg attttctaga gaaattcagt gaaca	45
3-295	**Sequences**		
3-295-1	Sequence Number [ID]	295	
3-295-2	Molecule Type	RNA	
3-295-3	Length	45	
3-295-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-295-5	Residues	agtgctgaat ggcttgattt tctagagaaa ttcagtgaac attat	45
3-296	**Sequences**		
3-296-1	Sequence Number [ID]	296	
3-296-2	Molecule Type	RNA	
3-296-3	Length	45	
3-296-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-296-5	Residues	ctgaatggct tgattttcta gagaaattca gtgaacatta tcact	45
3-297	**Sequences**		
3-297-1	Sequence Number [ID]	297	
3-297-2	Molecule Type	RNA	
3-297-3	Length	45	
3-297-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-297-5	Residues	attttctaga gaaattcagt gaacattatc actccttgtg taaag	45
3-298	**Sequences**		
3-298-1	Sequence Number [ID]	298	
3-298-2	Molecule Type	RNA	
3-298-3	Length	45	
3-298-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-298-5	Residues	tttctagaga aattcagtga acattatcac tccttgtgta aagca	45
3-299	**Sequences**		
3-299-1	Sequence Number [ID]	299	
3-299-2	Molecule Type	RNA	
3-299-3	Length	45	
3-299-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-299-5	Residues	ccttgtgtaa agcagtgcat cacctagcaa ctgttgactg cattt	45
3-300	**Sequences**		
3-300-1	Sequence Number [ID]	300	
3-300-2	Molecule Type	RNA	
3-300-3	Length	45	
3-300-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-300-5	Residues	catcacctag caactgttga ctgcattttc tccctggcca aggtc	45
3-301	**Sequences**		
3-301-1	Sequence Number [ID]	301	
3-301-2	Molecule Type	RNA	
3-301-3	Length	45	
3-301-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-301-5	Residues	attttctccc tggccaaggt cgctaagcaa ggagattact gcaga	45

3-302	**Sequences**		
3-302-1	Sequence Number [ID]	302	
3-302-2	Molecule Type	RNA	
3-302-3	Length	45	
3-302-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-302-5	Residues	cctggccaag gtcgctaagc aaggagatta ctgcagacca actgt	45
3-303	**Sequences**		
3-303-1	Sequence Number [ID]	303	
3-303-2	Molecule Type	RNA	
3-303-3	Length	45	
3-303-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-303-5	Residues	tgtcccaaat aatacagatt tatcagagga ctcagagaga gtaat	45
3-304	**Sequences**		
3-304-1	Sequence Number [ID]	304	
3-304-2	Molecule Type	RNA	
3-304-3	Length	45	
3-304-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-304-5	Residues	aatacagatt tatcagagga ctcagagaga gtaatgataa ttacc	45
3-305	**Sequences**		
3-305-1	Sequence Number [ID]	305	
3-305-2	Molecule Type	RNA	
3-305-3	Length	45	
3-305-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-305-5	Residues	gatttatcag aggactcaga gagagtaatg ataattaccg gacca	45
3-306	**Sequences**		
3-306-1	Sequence Number [ID]	306	
3-306-2	Molecule Type	RNA	
3-306-3	Length	45	
3-306-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-306-5	Residues	atttatcaga ggactcagag agagtaatga taattaccgg accaa	45
3-307	**Sequences**		
3-307-1	Sequence Number [ID]	307	
3-307-2	Molecule Type	RNA	
3-307-3	Length	45	
3-307-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-307-5	Residues	tttatcagag gactcagaga gagtaatgat aattaccgga ccaaa	45
3-308	**Sequences**		
3-308-1	Sequence Number [ID]	308	
3-308-2	Molecule Type	RNA	
3-308-3	Length	45	
3-308-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-308-5	Residues	ttatcagagg actcagagag agtaatgata attaccggac caaac	45
3-309	**Sequences**		

3-309-1	Sequence Number [ID]	309	
3-309-2	Molecule Type	RNA	
3-309-3	Length	45	
3-309-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-309-5	Residues	ccggaccaaa catgggtgga aagagctcct acataaaaca agttg	45
3-310	**Sequences**		
3-310-1	Sequence Number [ID]	310	
3-310-2	Molecule Type	RNA	
3-310-3	Length	45	
3-310-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-310-5	Residues	ccaaacatgg gtggaaagag ctcctacata aaacaagttg cattg	45
3-311	**Sequences**		
3-311-1	Sequence Number [ID]	311	
3-311-2	Molecule Type	RNA	
3-311-3	Length	45	
3-311-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-311-5	Residues	caaacatggg tggaaagagc tcctacataa aacaagttgc attga	45
3-312	**Sequences**		
3-312-1	Sequence Number [ID]	312	
3-312-2	Molecule Type	RNA	
3-312-3	Length	45	
3-312-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-312-5	Residues	aacatgggtg gaaagagctc ctacataaaa caagttgcat tgatt	45
3-313	**Sequences**		
3-313-1	Sequence Number [ID]	313	
3-313-2	Molecule Type	RNA	
3-313-3	Length	45	
3-313-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-313-5	Residues	acatgggtgg aaagagctcc tacataaaac aagttgcatt gatta	45
3-314	**Sequences**		
3-314-1	Sequence Number [ID]	314	
3-314-2	Molecule Type	RNA	
3-314-3	Length	45	
3-314-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-314-5	Residues	catgggtgga aagagctcct acataaaaca agttgcattg attac	45
3-315	**Sequences**		
3-315-1	Sequence Number [ID]	315	
3-315-2	Molecule Type	RNA	
3-315-3	Length	45	
3-315-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-315-5	Residues	atgggtggaa agagctccta cataaaacaa gttgcattga ttacc	45
3-316	**Sequences**		
3-316-1	Sequence Number [ID]	316	
3-316-2	Molecule Type	RNA	

3-316-3	Length	45	
3-316-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-316-5	Residues	tgggtggaaa gagctcctac ataaaacaag ttgcattgat tacca	45
3-317	**Sequences**		
3-317-1	Sequence Number [ID]	317	
3-317-2	Molecule Type	RNA	
3-317-3	Length	45	
3-317-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-317-5	Residues	gggtggaaag agctcctaca taaaacaagt tgcattgatt accat	45
3-318	**Sequences**		
3-318-1	Sequence Number [ID]	318	
3-318-2	Molecule Type	RNA	
3-318-3	Length	45	
3-318-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-318-5	Residues	ggtggaaaga gctcctacat aaaacaagtt gcattgatta ccatc	45
3-319	**Sequences**		
3-319-1	Sequence Number [ID]	319	
3-319-2	Molecule Type	RNA	
3-319-3	Length	45	
3-319-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-319-5	Residues	cgacaattgg gattgtggat ggcattttca caaggatggg tgctg	45
3-320	**Sequences**		
3-320-1	Sequence Number [ID]	320	
3-320-2	Molecule Type	RNA	
3-320-3	Length	45	
3-320-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-320-5	Residues	gacaattggg attgtggatg gcattttcac aaggatgggt gctgc	45
3-321	**Sequences**		
3-321-1	Sequence Number [ID]	321	
3-321-2	Molecule Type	RNA	
3-321-3	Length	45	
3-321-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-321-5	Residues	acaattggga ttgtggatgg cattttcaca aggatgggtg ctgca	45
3-322	**Sequences**		
3-322-1	Sequence Number [ID]	322	
3-322-2	Molecule Type	RNA	
3-322-3	Length	45	
3-322-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-322-5	Residues	caattgggat tgtggatggc attttcacaa ggatgggtgc tgcag	45
3-323	**Sequences**		
3-323-1	Sequence Number [ID]	323	
3-323-2	Molecule Type	RNA	
3-323-3	Length	45	

3-323-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-323-5	Residues	aattgggatt gtggatggca ttttcacaag gatgggtgct gcaga	45
3-324	**Sequences**		
3-324-1	Sequence Number [ID]	324	
3-324-2	Molecule Type	RNA	
3-324-3	Length	45	
3-324-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-324-5	Residues	tggcattttc acaaggatgg gtgctgcaga caatatatat aaagg	45
3-325	**Sequences**		
3-325-1	Sequence Number [ID]	325	
3-325-2	Molecule Type	RNA	
3-325-3	Length	45	
3-325-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-325-5	Residues	gcattttcac aaggatgggt gctgcagaca atatatataa aggac	45
3-326	**Sequences**		
3-326-1	Sequence Number [ID]	326	
3-326-2	Molecule Type	RNA	
3-326-3	Length	45	
3-326-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-326-5	Residues	cattttcaca aggatgggtg ctgcagacaa tatatataaa ggaca	45
3-327	**Sequences**		
3-327-1	Sequence Number [ID]	327	
3-327-2	Molecule Type	RNA	
3-327-3	Length	45	
3-327-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-327-5	Residues	attttcacaa ggatgggtgc tgcagacaat atatataaag gacag	45
3-328	**Sequences**		
3-328-1	Sequence Number [ID]	328	
3-328-2	Molecule Type	RNA	
3-328-3	Length	45	
3-328-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-328-5	Residues	ttttcacaag gatgggtgct gcagacaata tatataaagg acaga	45
3-329	**Sequences**		
3-329-1	Sequence Number [ID]	329	
3-329-2	Molecule Type	RNA	
3-329-3	Length	45	
3-329-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-329-5	Residues	tttcacaagg atgggtgctg cagacaatat atataaagga cagag	45
3-330	**Sequences**		
3-330-1	Sequence Number [ID]	330	
3-330-2	Molecule Type	RNA	
3-330-3	Length	45	
3-330-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-330-5	Residues	tataaaggac agagtacatt tatggaagaa ctgactgaca cagca	45
3-331	**Sequences**		
3-331-1	Sequence Number [ID]	331	
3-331-2	Molecule Type	RNA	
3-331-3	Length	45	
3-331-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-331-5	Residues	tttatggaag aactgactga cacagcagaa ataatcagaa aagca	45
3-332	**Sequences**		
3-332-1	Sequence Number [ID]	332	
3-332-2	Molecule Type	RNA	
3-332-3	Length	45	
3-332-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-332-5	Residues	agaaataatc agaaaagcaa catcacagtc cttggttatc ttgga	45
3-333	**Sequences**		
3-333-1	Sequence Number [ID]	333	
3-333-2	Molecule Type	RNA	
3-333-3	Length	45	
3-333-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-333-5	Residues	atcagaaaag caacatcaca gtccttggtt atcttggatg aacta	45
3-334	**Sequences**		
3-334-1	Sequence Number [ID]	334	
3-334-2	Molecule Type	RNA	
3-334-3	Length	45	
3-334-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-334-5	Residues	acatcacagt ccttggttat cttggatgaa ctaggaagag ggacg	45
3-335	**Sequences**		
3-335-1	Sequence Number [ID]	335	
3-335-2	Molecule Type	RNA	
3-335-3	Length	45	
3-335-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-335-5	Residues	tcacagtcct tggttatctt ggatgaacta ggaagaggga cgagc	45
3-336	**Sequences**		
3-336-1	Sequence Number [ID]	336	
3-336-2	Molecule Type	RNA	
3-336-3	Length	45	
3-336-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-336-5	Residues	actcatgatg gaattgccat tgcctatgct acacttgagt atttc	45
3-337	**Sequences**		
3-337-1	Sequence Number [ID]	337	
3-337-2	Molecule Type	RNA	
3-337-3	Length	45	
3-337-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-337-5	Residues	cctatgctac acttgagtat ttcatcagag atgtgaaatc cttaa	45
3-338	**Sequences**		
3-338-1	Sequence Number [ID]	338	
3-338-2	Molecule Type	RNA	
3-338-3	Length	45	
3-338-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-338-5	Residues	tatgctacac ttgagtattt catcagagat gtgaaatcct taacc	45
3-339	**Sequences**		
3-339-1	Sequence Number [ID]	339	
3-339-2	Molecule Type	RNA	
3-339-3	Length	45	
3-339-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-339-5	Residues	gtatttcatc agagatgtga aatccttaac cctgtttgtc accca	45
3-340	**Sequences**		
3-340-1	Sequence Number [ID]	340	
3-340-2	Molecule Type	RNA	
3-340-3	Length	45	
3-340-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-340-5	Residues	tgtgaaatcc ttaaccctgt ttgtcaccca ttatccgcca gtttg	45
3-341	**Sequences**		
3-341-1	Sequence Number [ID]	341	
3-341-2	Molecule Type	RNA	
3-341-3	Length	45	
3-341-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-341-5	Residues	ccttaaccct gtttgtcacc cattatccgc cagtttgtga actag	45
3-342	**Sequences**		
3-342-1	Sequence Number [ID]	342	
3-342-2	Molecule Type	RNA	
3-342-3	Length	45	
3-342-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-342-5	Residues	gtttgtcacc cattatccgc cagtttgtga actagaaaaa aatta	45
3-343	**Sequences**		
3-343-1	Sequence Number [ID]	343	
3-343-2	Molecule Type	RNA	
3-343-3	Length	45	
3-343-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-343-5	Residues	gtcacccatt atccgccagt ttgtgaacta gaaaaaaatt actca	45
3-344	**Sequences**		
3-344-1	Sequence Number [ID]	344	
3-344-2	Molecule Type	RNA	
3-344-3	Length	45	
3-344-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-344-5	Residues	ttaccacatg ggattcttgg tcagtgagga tgaaagcaaa ctgga	45

3-345	**Sequences**		
3-345-1	Sequence Number [ID]	345	
3-345-2	Molecule Type	RNA	
3-345-3	Length	45	
3-345-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-345-5	Residues	agaacaagtc cctgattttg tcaccttcct ttaccaaata actag	45
3-346	**Sequences**		
3-346-1	Sequence Number [ID]	346	
3-346-2	Molecule Type	RNA	
3-346-3	Length	45	
3-346-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-346-5	Residues	gaacaagtcc ctgattttgt caccttcctt taccaaataa ctaga	45
3-347	**Sequences**		
3-347-1	Sequence Number [ID]	347	
3-347-2	Molecule Type	RNA	
3-347-3	Length	45	
3-347-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-347-5	Residues	aagtccctga ttttgtcacc ttcctttacc aaataactag aggaa	45
3-348	**Sequences**		
3-348-1	Sequence Number [ID]	348	
3-348-2	Molecule Type	RNA	
3-348-3	Length	45	
3-348-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-348-5	Residues	agtccctgat tttgtcacct tcctttacca aataactaga ggaat	45
3-349	**Sequences**		
3-349-1	Sequence Number [ID]	349	
3-349-2	Molecule Type	RNA	
3-349-3	Length	45	
3-349-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-349-5	Residues	gtccctgatt ttgtcacctt cctttaccaa ataactagag gaatt	45
3-350	**Sequences**		
3-350-1	Sequence Number [ID]	350	
3-350-2	Molecule Type	RNA	
3-350-3	Length	45	
3-350-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-350-5	Residues	tccctgattt tgtcaccttc ctttaccaaa taactagagg aattg	45
3-351	**Sequences**		
3-351-1	Sequence Number [ID]	351	
3-351-2	Molecule Type	RNA	
3-351-3	Length	45	
3-351-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-351-5	Residues	ttgtcacctt cctttaccaa ataactagag gaattgcagc aagga	45
3-352	**Sequences**		

3-352-1	Sequence Number [ID]	352	
3-352-2	Molecule Type	RNA	
3-352-3	Length	45	
3-352-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-352-5	Residues	`ctttaccaaa taactagagg aattgcagca aggagttatg gatta`	45
3-353	**Sequences**		
3-353-1	Sequence Number [ID]	353	
3-353-2	Molecule Type	RNA	
3-353-3	Length	45	
3-353-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-353-5	Residues	`ccaaataact agaggaattg cagcaaggag ttatggatta aatgt`	45
3-354	**Sequences**		
3-354-1	Sequence Number [ID]	354	
3-354-2	Molecule Type	RNA	
3-354-3	Length	45	
3-354-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-354-5	Residues	`aataactaga ggaattgcag caaggagtta tggattaaat gtggc`	45
3-355	**Sequences**		
3-355-1	Sequence Number [ID]	355	
3-355-2	Molecule Type	RNA	
3-355-3	Length	45	
3-355-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-355-5	Residues	`ataactagag gaattgcagc aaggagttat ggattaaatg tggct`	45
3-356	**Sequences**		
3-356-1	Sequence Number [ID]	356	
3-356-2	Molecule Type	RNA	
3-356-3	Length	45	
3-356-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-356-5	Residues	`actagaggaa ttgcagcaag gagttatgga ttaaatgtgg ctaaa`	45
3-357	**Sequences**		
3-357-1	Sequence Number [ID]	357	
3-357-2	Molecule Type	RNA	
3-357-3	Length	45	
3-357-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-357-5	Residues	`aggagttatg gattaaatgt ggctaaacta gcagatgttc ctgga`	45
3-358	**Sequences**		
3-358-1	Sequence Number [ID]	358	
3-358-2	Molecule Type	RNA	
3-358-3	Length	45	
3-358-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-358-5	Residues	`cctggagaaa ttttgaagaa agcagctcac aagtcaaaag agctg`	45
3-359	**Sequences**		
3-359-1	Sequence Number [ID]	359	
3-359-2	Molecule Type	RNA	

3-359-3	Length	45	
3-359-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-359-5	Residues	taaatacgaa aagaaagaga ctcaagtatt ttgcaaagtt atgga	45
3-360	**Sequences**		
3-360-1	Sequence Number [ID]	360	
3-360-2	Molecule Type	RNA	
3-360-3	Length	45	
3-360-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-360-5	Residues	aaatacgaaa agaaagagac tcaagtattt tgcaaagtta tggac	45
3-361	**Sequences**		
3-361-1	Sequence Number [ID]	361	
3-361-2	Molecule Type	RNA	
3-361-3	Length	45	
3-361-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-361-5	Residues	aatacgaaaa gaaagagact caagtatttt gcaaagttat ggacg	45
3-362	**Sequences**		
3-362-1	Sequence Number [ID]	362	
3-362-2	Molecule Type	RNA	
3-362-3	Length	45	
3-362-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-362-5	Residues	atacgaaaag aaagagactc aagtattttg caaagttatg gacga	45
3-363	**Sequences**		
3-363-1	Sequence Number [ID]	363	
3-363-2	Molecule Type	RNA	
3-363-3	Length	45	
3-363-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-363-5	Residues	tacgaaaaga aagagactca agtattttgc aaagttatgg acgat	45
3-364	**Sequences**		
3-364-1	Sequence Number [ID]	364	
3-364-2	Molecule Type	RNA	
3-364-3	Length	45	
3-364-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-364-5	Residues	gagactcaag tattttgcaa agttatggac gatgcataat gcaca	45
3-365	**Sequences**		
3-365-1	Sequence Number [ID]	365	
3-365-2	Molecule Type	RNA	
3-365-3	Length	45	
3-365-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-365-5	Residues	agaagtggac agaggagttc aacatggaag aaacacagac ttctc	45
3-366	**Sequences**		
3-366-1	Sequence Number [ID]	366	
3-366-2	Molecule Type	RNA	
3-366-3	Length	45	

3-366-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-366-5	Residues	gaagtggaca gaggagttca acatggaaga aacacagact tctct	45
3-367	**Sequences**		
3-367-1	Sequence Number [ID]	367	
3-367-2	Molecule Type	RNA	
3-367-3	Length	45	
3-367-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-367-5	Residues	aagtggacag aggagttcaa catggaagaa acacagactt ctctt	45
3-368	**Sequences**		
3-368-1	Sequence Number [ID]	368	
3-368-2	Molecule Type	RNA	
3-368-3	Length	45	
3-368-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-368-5	Residues	agtggacaga ggagttcaac atggaagaaa cacagacttc tcttc	45
3-369	**Sequences**		
3-369-1	Sequence Number [ID]	369	
3-369-2	Molecule Type	RNA	
3-369-3	Length	45	
3-369-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-369-5	Residues	gtggacagag gagttcaaca tggaagaaac acagacttct cttct	45
3-370	**Sequences**		
3-370-1	Sequence Number [ID]	370	
3-370-2	Molecule Type	RNA	
3-370-3	Length	45	
3-370-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-370-5	Residues	agaggagttc aacatggaag aaacacagac ttctcttctt catta	45
3-371	**Sequences**		
3-371-1	Sequence Number [ID]	371	
3-371-2	Molecule Type	RNA	
3-371-3	Length	45	
3-371-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-371-5	Residues	gttcaacatg gaagaaacac agacttctct tcttcattaa aatga	45
3-372	**Sequences**		
3-372-1	Sequence Number [ID]	372	
3-372-2	Molecule Type	RNA	
3-372-3	Length	45	
3-372-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-372-5	Residues	cttcattaaa atgaagacta catttgtgaa caaaaaatgg agaat	45
3-373	**Sequences**		
3-373-1	Sequence Number [ID]	373	
3-373-2	Molecule Type	RNA	
3-373-3	Length	45	
3-373-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	

		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-373-5	Residues	attaaaaata ccaactgtac aaaataactc tccagtaaca gccta	45
3-374	**Sequences**		
3-374-1	Sequence Number [ID]	374	
3-374-2	Molecule Type	RNA	
3-374-3	Length	45	
3-374-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-374-5	Residues	ttaaaaatac caactgtaca aaataactct ccagtaacag cctat	45
3-375	**Sequences**		
3-375-1	Sequence Number [ID]	375	
3-375-2	Molecule Type	RNA	
3-375-3	Length	45	
3-375-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-375-5	Residues	tgtacaaaat aactctccag taacagccta tctttgtgtg acatg	45
3-376	**Sequences**		
3-376-1	Sequence Number [ID]	376	
3-376-2	Molecule Type	RNA	
3-376-3	Length	45	
3-376-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-376-5	Residues	agtaacagcc tatctttgtg tgacatgtga gcataaaatt atgac	45
3-377	**Sequences**		
3-377-1	Sequence Number [ID]	377	
3-377-2	Molecule Type	RNA	
3-377-3	Length	45	
3-377-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-377-5	Residues	aacagcctat ctttgtgtga catgtgagca taaaattatg accat	45
3-378	**Sequences**		
3-378-1	Sequence Number [ID]	378	
3-378-2	Molecule Type	RNA	
3-378-3	Length	45	
3-378-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-378-5	Residues	atctttgtgt gacatgtgag cataaaatta tgaccatggt atatt	45
3-379	**Sequences**		
3-379-1	Sequence Number [ID]	379	
3-379-2	Molecule Type	RNA	
3-379-3	Length	45	
3-379-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-379-5	Residues	atgtgagcat aaaattatga ccatggtata ttcctattgg aaaca	45
3-380	**Sequences**		
3-380-1	Sequence Number [ID]	380	
3-380-2	Molecule Type	RNA	
3-380-3	Length	45	
3-380-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		

3-380-5	Residues	tgtgagcata aaattatgac catggtatat tcctattgga aacag	45
3-381	**Sequences**		
3-381-1	Sequence Number [ID]	381	
3-381-2	Molecule Type	RNA	
3-381-3	Length	45	
3-381-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-381-5	Residues	aattatgacc atggtatatt cctattggaa acagagaggt ttttc	45
3-382	**Sequences**		
3-382-1	Sequence Number [ID]	382	
3-382-2	Molecule Type	RNA	
3-382-3	Length	45	
3-382-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-382-5	Residues	tatgaccatg gtatattcct attggaaaca gagaggtttt tctga	45
3-383	**Sequences**		
3-383-1	Sequence Number [ID]	383	
3-383-2	Molecule Type	RNA	
3-383-3	Length	45	
3-383-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-383-5	Residues	ccatggtata ttcctattgg aaacagagag gtttttctga agaca	45
3-384	**Sequences**		
3-384-1	Sequence Number [ID]	384	
3-384-2	Molecule Type	RNA	
3-384-3	Length	45	
3-384-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-384-5	Residues	gtctttttca agtttctgtc ttcctaactt ttctacgtat aaaca	45
3-385	**Sequences**		
3-385-1	Sequence Number [ID]	385	
3-385-2	Molecule Type	RNA	
3-385-3	Length	45	
3-385-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-385-5	Residues	ttttcaagtt tctgtcttcc taacttttct acgtataaac actct	45
3-386	**Sequences**		
3-386-1	Sequence Number [ID]	386	
3-386-2	Molecule Type	RNA	
3-386-3	Length	45	
3-386-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-386-5	Residues	tttcaagttt ctgtcttcct aacttttcta cgtataaaca ctctt	45
3-387	**Sequences**		
3-387-1	Sequence Number [ID]	387	
3-387-2	Molecule Type	RNA	
3-387-3	Length	45	
3-387-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-387-5	Residues	ctgtcttcct aacttttcta cgtataaaca ctcttgaata gactt	45

3-388	**Sequences**		
3-388-1	Sequence Number [ID]	388	
3-388-2	Molecule Type	RNA	
3-388-3	Length	45	
3-388-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-388-5	Residues	tgtcttccta acttttctac gtataaacac tcttgaatag acttc	45
3-389	**Sequences**		
3-389-1	Sequence Number [ID]	389	
3-389-2	Molecule Type	RNA	
3-389-3	Length	45	
3-389-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-389-5	Residues	tcttcctaac ttttctacgt ataaacactc ttgaatagac ttcca	45
3-390	**Sequences**		
3-390-1	Sequence Number [ID]	390	
3-390-2	Molecule Type	RNA	
3-390-3	Length	45	
3-390-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-390-5	Residues	ttttctacgt ataaacactc ttgaatagac ttccactttg taatt	45
3-391	**Sequences**		
3-391-1	Sequence Number [ID]	391	
3-391-2	Molecule Type	RNA	
3-391-3	Length	45	
3-391-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-391-5	Residues	tacgtataaa cactcttgaa tagacttcca ctttgtaatt agaaa	45
3-392	**Sequences**		
3-392-1	Sequence Number [ID]	392	
3-392-2	Molecule Type	RNA	
3-392-3	Length	45	
3-392-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-392-5	Residues	acgtataaac actcttgaat agacttccac tttgtaatta gaaaa	45
3-393	**Sequences**		
3-393-1	Sequence Number [ID]	393	
3-393-2	Molecule Type	RNA	
3-393-3	Length	45	
3-393-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-393-5	Residues	tataaacact cttgaataga cttccacttt gtaattagaa aattt	45
3-394	**Sequences**		
3-394-1	Sequence Number [ID]	394	
3-394-2	Molecule Type	RNA	
3-394-3	Length	45	
3-394-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-394-5	Residues	aaacactctt gaatagactt ccactttgta attagaaaat tttat	45
3-395	**Sequences**		

3-395-1	Sequence Number [ID]	395	
3-395-2	Molecule Type	RNA	
3-395-3	Length	45	
3-395-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-395-5	Residues	aacactcttg aatagacttc cactttgtaa ttagaaaatt ttatg	45
3-396	**Sequences**		
3-396-1	Sequence Number [ID]	396	
3-396-2	Molecule Type	RNA	
3-396-3	Length	45	
3-396-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-396-5	Residues	aattttatgg acagtaagtc cagtaaagcc ttaagtggca gaata	45
3-397	**Sequences**		
3-397-1	Sequence Number [ID]	397	
3-397-2	Molecule Type	RNA	
3-397-3	Length	45	
3-397-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-397-5	Residues	agtaagtcca gtaaagcctt aagtggcaga atataattcc caagc	45
3-398	**Sequences**		
3-398-1	Sequence Number [ID]	398	
3-398-2	Molecule Type	RNA	
3-398-3	Length	45	
3-398-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-398-5	Residues	tccagtaaag ccttaagtgg cagaatataa ttcccaagct tttgg	45
3-399	**Sequences**		
3-399-1	Sequence Number [ID]	399	
3-399-2	Molecule Type	RNA	
3-399-3	Length	45	
3-399-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-399-5	Residues	tggcaactgg gtgaatctgg caggaatcta tccattgaac taaaa	45
3-400	**Sequences**		
3-400-1	Sequence Number [ID]	400	
3-400-2	Molecule Type	RNA	
3-400-3	Length	45	
3-400-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-400-5	Residues	ctgggtgaat ctggcaggaa tctatccatt gaactaaaat aattt	45
3-401	**Sequences**		
3-401-1	Sequence Number [ID]	401	
3-401-2	Molecule Type	RNA	
3-401-3	Length	45	
3-401-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-401-5	Residues	aaaataattt tattatgcaa ccagtttatc caccaagaac ataag	45
3-402	**Sequences**		
3-402-1	Sequence Number [ID]	402	
3-402-2	Molecule Type	RNA	

3-402-3	Length	45	
3-402-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-402-5	Residues	attttattat gcaaccagtt tatccaccaa gaacataaga atttt	45
3-403	**Sequences**		
3-403-1	Sequence Number [ID]	403	
3-403-2	Molecule Type	RNA	
3-403-3	Length	45	
3-403-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-403-5	Residues	tatgcaacca gtttatccac caagaacata agaatttttt ataag	45
3-404	**Sequences**		
3-404-1	Sequence Number [ID]	404	
3-404-2	Molecule Type	RNA	
3-404-3	Length	45	
3-404-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-404-5	Residues	aagcttttaa aaactagagc acagaaggaa taaggtcatg aaatt	45
3-405	**Sequences**		
3-405-1	Sequence Number [ID]	405	
3-405-2	Molecule Type	RNA	
3-405-3	Length	45	
3-405-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-405-5	Residues	ttttaaaaac tagagcacag aaggaataag gtcatgaaat ttaaa	45
3-406	**Sequences**		
3-406-1	Sequence Number [ID]	406	
3-406-2	Molecule Type	RNA	
3-406-3	Length	45	
3-406-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-406-5	Residues	tttaaaaact agagcacaga aggaataagg tcatgaaatt taaaa	45
3-407	**Sequences**		
3-407-1	Sequence Number [ID]	407	
3-407-2	Molecule Type	RNA	
3-407-3	Length	45	
3-407-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-407-5	Residues	aaggttaaat attgtcatag gattaagcag tttaaagatt gttgg	45
3-408	**Sequences**		
3-408-1	Sequence Number [ID]	408	
3-408-2	Molecule Type	RNA	
3-408-3	Length	45	
3-408-4	Features Location/	**source 1..45**	
	Qualifiers	mol_type=mRNA	
		organism=Homo sapiens	
	NonEnglishQualifier Value		
3-408-5	Residues	tattgtcata ggattaagca gtttaaagat tgttggatga aatta	45
3-409	**Sequences**		
3-409-1	Sequence Number [ID]	409	
3-409-2	Molecule Type	RNA	
3-409-3	Length	16	

3-409-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-409-5	Residues	gccgattctt ccagta	16
3-410	**Sequences**		
3-410-1	Sequence Number [ID]	410	
3-410-2	Molecule Type	RNA	
3-410-3	Length	16	
3-410-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-410-5	Residues	ggaagcctga aatcca	16
3-411	**Sequences**		
3-411-1	Sequence Number [ID]	411	
3-411-2	Molecule Type	RNA	
3-411-3	Length	16	
3-411-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-411-5	Residues	ctgaaatcca cctcca	16
3-412	**Sequences**		
3-412-1	Sequence Number [ID]	412	
3-412-2	Molecule Type	RNA	
3-412-3	Length	16	
3-412-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-412-5	Residues	atccacctcc tcctca	16
3-413	**Sequences**		
3-413-1	Sequence Number [ID]	413	
3-413-2	Molecule Type	RNA	
3-413-3	Length	16	
3-413-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-413-5	Residues	attgacagaa gaaaga	16
3-414	**Sequences**		
3-414-1	Sequence Number [ID]	414	
3-414-2	Molecule Type	RNA	
3-414-3	Length	16	
3-414-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-414-5	Residues	ttgacagaag aaagaa	16
3-415	**Sequences**		
3-415-1	Sequence Number [ID]	415	
3-415-2	Molecule Type	RNA	
3-415-3	Length	16	
3-415-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-415-5	Residues	tgacagaaga aagaaa	16
3-416	**Sequences**		
3-416-1	Sequence Number [ID]	416	
3-416-2	Molecule Type	RNA	
3-416-3	Length	16	
3-416-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-416-5	Residues	gacagaagaa agaaga	16
3-417	**Sequences**		
3-417-1	Sequence Number [ID]	417	
3-417-2	Molecule Type	RNA	
3-417-3	Length	16	
3-417-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-417-5	Residues	acagaagaaa gaagaa	16
3-418	**Sequences**		
3-418-1	Sequence Number [ID]	418	
3-418-2	Molecule Type	RNA	
3-418-3	Length	16	
3-418-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-418-5	Residues	gaagaaagaa gagaca	16
3-419	**Sequences**		
3-419-1	Sequence Number [ID]	419	
3-419-2	Molecule Type	RNA	
3-419-3	Length	16	
3-419-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-419-5	Residues	gaaaatgatg ggccta	16
3-420	**Sequences**		
3-420-1	Sequence Number [ID]	420	
3-420-2	Molecule Type	RNA	
3-420-3	Length	16	
3-420-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-420-5	Residues	aaaatgatgg gcctga	16
3-421	**Sequences**		
3-421-1	Sequence Number [ID]	421	
3-421-2	Molecule Type	RNA	
3-421-3	Length	16	
3-421-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-421-5	Residues	aaatgatggg cctgta	16
3-422	**Sequences**		
3-422-1	Sequence Number [ID]	422	
3-422-2	Molecule Type	RNA	
3-422-3	Length	16	
3-422-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-422-5	Residues	aatgatgggc ctgtta	16
3-423	**Sequences**		
3-423-1	Sequence Number [ID]	423	
3-423-2	Molecule Type	RNA	
3-423-3	Length	16	
3-423-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-423-5	Residues	atgatgggcc tgttaa	16
3-424	**Sequences**		
3-424-1	Sequence Number [ID]	424	
3-424-2	Molecule Type	RNA	
3-424-3	Length	16	
3-424-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-424-5	Residues	actctgagcc aaagaa	16
3-425	**Sequences**		
3-425-1	Sequence Number [ID]	425	
3-425-2	Molecule Type	RNA	
3-425-3	Length	16	
3-425-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-425-5	Residues	gccaaagaaa tgtcta	16
3-426	**Sequences**		
3-426-1	Sequence Number [ID]	426	
3-426-2	Molecule Type	RNA	
3-426-3	Length	16	
3-426-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-426-5	Residues	ccaaagaaat gtctga	16
3-427	**Sequences**		
3-427-1	Sequence Number [ID]	427	
3-427-2	Molecule Type	RNA	
3-427-3	Length	16	
3-427-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-427-5	Residues	caaagaaatg tctgaa	16
3-428	**Sequences**		
3-428-1	Sequence Number [ID]	428	
3-428-2	Molecule Type	RNA	
3-428-3	Length	16	
3-428-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-428-5	Residues	aaagaaatgt ctgaga	16
3-429	**Sequences**		
3-429-1	Sequence Number [ID]	429	
3-429-2	Molecule Type	RNA	
3-429-3	Length	16	
3-429-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-429-5	Residues	aagaaatgtc tgagga	16
3-430	**Sequences**		
3-430-1	Sequence Number [ID]	430	
3-430-2	Molecule Type	RNA	
3-430-3	Length	16	
3-430-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-430-5	Residues	agaaatgtct gaggaa	16

3-431	**Sequences**		
3-431-1	Sequence Number [ID]	431	
3-431-2	Molecule Type	RNA	
3-431-3	Length	16	
3-431-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-431-5	Residues	gaaatgtctg aggaca	16
3-432	**Sequences**		
3-432-1	Sequence Number [ID]	432	
3-432-2	Molecule Type	RNA	
3-432-3	Length	16	
3-432-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-432-5	Residues	attctgccct tcctca	16
3-433	**Sequences**		
3-433-1	Sequence Number [ID]	433	
3-433-2	Molecule Type	RNA	
3-433-3	Length	16	
3-433-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-433-5	Residues	ggagagattt gcagta	16
3-434	**Sequences**		
3-434-1	Sequence Number [ID]	434	
3-434-2	Molecule Type	RNA	
3-434-3	Length	16	
3-434-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-434-5	Residues	gagagatttg cagtta	16
3-435	**Sequences**		
3-435-1	Sequence Number [ID]	435	
3-435-2	Molecule Type	RNA	
3-435-3	Length	16	
3-435-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-435-5	Residues	agagatttgc agttca	16
3-436	**Sequences**		
3-436-1	Sequence Number [ID]	436	
3-436-2	Molecule Type	RNA	
3-436-3	Length	16	
3-436-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-436-5	Residues	gagatttgca gttcta	16
3-437	**Sequences**		
3-437-1	Sequence Number [ID]	437	
3-437-2	Molecule Type	RNA	
3-437-3	Length	16	
3-437-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-437-5	Residues	agatttgcag ttctga	16
3-438	**Sequences**		

3-438-1	Sequence Number [ID]	438	
3-438-2	Molecule Type	RNA	
3-438-3	Length	16	
3-438-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-438-5	Residues	ctgccaaaat gtacta	16
3-439	**Sequences**		
3-439-1	Sequence Number [ID]	439	
3-439-2	Molecule Type	RNA	
3-439-3	Length	16	
3-439-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-439-5	Residues	tgccaaaatg tactga	16
3-440	**Sequences**		
3-440-1	Sequence Number [ID]	440	
3-440-2	Molecule Type	RNA	
3-440-3	Length	16	
3-440-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-440-5	Residues	gccaaaatgt actgaa	16
3-441	**Sequences**		
3-441-1	Sequence Number [ID]	441	
3-441-2	Molecule Type	RNA	
3-441-3	Length	16	
3-441-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-441-5	Residues	ccaaaatgta ctgata	16
3-442	**Sequences**		
3-442-1	Sequence Number [ID]	442	
3-442-2	Molecule Type	RNA	
3-442-3	Length	16	
3-442-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-442-5	Residues	caaaatgtac tgatta	16
3-443	**Sequences**		
3-443-1	Sequence Number [ID]	443	
3-443-2	Molecule Type	RNA	
3-443-3	Length	16	
3-443-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-443-5	Residues	aaaatgtact gattta	16
3-444	**Sequences**		
3-444-1	Sequence Number [ID]	444	
3-444-2	Molecule Type	RNA	
3-444-3	Length	16	
3-444-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-444-5	Residues	aaatgtactg atttta	16
3-445	**Sequences**		
3-445-1	Sequence Number [ID]	445	
3-445-2	Molecule Type	RNA	

3-445-3	Length	16	
3-445-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-445-5	Residues	ttctacacgc aaagaa	16
3-446	**Sequences**		
3-446-1	Sequence Number [ID]	446	
3-446-2	Molecule Type	RNA	
3-446-3	Length	16	
3-446-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-446-5	Residues	tctacacgca aagaaa	16
3-447	**Sequences**		
3-447-1	Sequence Number [ID]	447	
3-447-2	Molecule Type	RNA	
3-447-3	Length	16	
3-447-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-447-5	Residues	cgcaaagaat gcagta	16
3-448	**Sequences**		
3-448-1	Sequence Number [ID]	448	
3-448-2	Molecule Type	RNA	
3-448-3	Length	16	
3-448-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-448-5	Residues	gcaaagaatg cagtta	16
3-449	**Sequences**		
3-449-1	Sequence Number [ID]	449	
3-449-2	Molecule Type	RNA	
3-449-3	Length	16	
3-449-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-449-5	Residues	caaagaatgc agttta	16
3-450	**Sequences**		
3-450-1	Sequence Number [ID]	450	
3-450-2	Molecule Type	RNA	
3-450-3	Length	16	
3-450-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-450-5	Residues	aaagaatgca gtttca	16
3-451	**Sequences**		
3-451-1	Sequence Number [ID]	451	
3-451-2	Molecule Type	RNA	
3-451-3	Length	16	
3-451-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-451-5	Residues	aagaatgcag tttcta	16
3-452	**Sequences**		
3-452-1	Sequence Number [ID]	452	
3-452-2	Molecule Type	RNA	
3-452-3	Length	16	

3-452-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-452-5	Residues	agaatgcagt ttctta	16
3-453	**Sequences**		
3-453-1	Sequence Number [ID]	453	
3-453-2	Molecule Type	RNA	
3-453-3	Length	16	
3-453-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-453-5	Residues	gaatgcagtt tcttca	16
3-454	**Sequences**		
3-454-1	Sequence Number [ID]	454	
3-454-2	Molecule Type	RNA	
3-454-3	Length	16	
3-454-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-454-5	Residues	ttcgaaacgt caaata	16
3-455	**Sequences**		
3-455-1	Sequence Number [ID]	455	
3-455-2	Molecule Type	RNA	
3-455-3	Length	16	
3-455-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-455-5	Residues	acgtcaaatt aatcaa	16
3-456	**Sequences**		
3-456-1	Sequence Number [ID]	456	
3-456-2	Molecule Type	RNA	
3-456-3	Length	16	
3-456-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-456-5	Residues	atctcagtca gtttga	16
3-457	**Sequences**		
3-457-1	Sequence Number [ID]	457	
3-457-2	Molecule Type	RNA	
3-457-3	Length	16	
3-457-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-457-5	Residues	tcagtttgga tcatca	16
3-458	**Sequences**		
3-458-1	Sequence Number [ID]	458	
3-458-2	Molecule Type	RNA	
3-458-3	Length	16	
3-458-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-458-5	Residues	agtttggatc atcaaa	16
3-459	**Sequences**		
3-459-1	Sequence Number [ID]	459	
3-459-2	Molecule Type	RNA	
3-459-3	Length	16	
3-459-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-459-5	Residues	tggatcatca aataca	16
3-460	**Sequences**		
3-460-1	Sequence Number [ID]	460	
3-460-2	Molecule Type	RNA	
3-460-3	Length	16	
3-460-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-460-5	Residues	tcatcaaata caagta	16
3-461	**Sequences**		
3-461-1	Sequence Number [ID]	461	
3-461-2	Molecule Type	RNA	
3-461-3	Length	16	
3-461-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-461-5	Residues	acagaaaact gcttca	16
3-462	**Sequences**		
3-462-1	Sequence Number [ID]	462	
3-462-2	Molecule Type	RNA	
3-462-3	Length	16	
3-462-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-462-5	Residues	aaactgcttc caaata	16
3-463	**Sequences**		
3-463-1	Sequence Number [ID]	463	
3-463-2	Molecule Type	RNA	
3-463-3	Length	16	
3-463-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-463-5	Residues	aactgcttcc aaatca	16
3-464	**Sequences**		
3-464-1	Sequence Number [ID]	464	
3-464-2	Molecule Type	RNA	
3-464-3	Length	16	
3-464-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-464-5	Residues	actgcttcca aatcaa	16
3-465	**Sequences**		
3-465-1	Sequence Number [ID]	465	
3-465-2	Molecule Type	RNA	
3-465-3	Length	16	
3-465-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-465-5	Residues	ctgcttccaa atcaga	16
3-466	**Sequences**		
3-466-1	Sequence Number [ID]	466	
3-466-2	Molecule Type	RNA	
3-466-3	Length	16	
3-466-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-466-5	Residues	tgcttccaaa tcagca	16
3-467	**Sequences**		
3-467-1	Sequence Number [ID]	467	
3-467-2	Molecule Type	RNA	
3-467-3	Length	16	
3-467-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-467-5	Residues	aaatcagcta acaaaa	16
3-468	**Sequences**		
3-468-1	Sequence Number [ID]	468	
3-468-2	Molecule Type	RNA	
3-468-3	Length	16	
3-468-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-468-5	Residues	aatcagctaa caaaca	16
3-469	**Sequences**		
3-469-1	Sequence Number [ID]	469	
3-469-2	Molecule Type	RNA	
3-469-3	Length	16	
3-469-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-469-5	Residues	atcagctaac aaacga	16
3-470	**Sequences**		
3-470-1	Sequence Number [ID]	470	
3-470-2	Molecule Type	RNA	
3-470-3	Length	16	
3-470-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-470-5	Residues	tcagctaaca aacgga	16
3-471	**Sequences**		
3-471-1	Sequence Number [ID]	471	
3-471-2	Molecule Type	RNA	
3-471-3	Length	16	
3-471-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-471-5	Residues	cagctaacaa acggta	16
3-472	**Sequences**		
3-472-1	Sequence Number [ID]	472	
3-472-2	Molecule Type	RNA	
3-472-3	Length	16	
3-472-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-472-5	Residues	agctaacaaa cggtca	16
3-473	**Sequences**		
3-473-1	Sequence Number [ID]	473	
3-473-2	Molecule Type	RNA	
3-473-3	Length	16	
3-473-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-473-5	Residues	gctaacaaac ggtcca	16

3-474	**Sequences**		
3-474-1	Sequence Number [ID]	474	
3-474-2	Molecule Type	RNA	
3-474-3	Length	16	
3-474-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-474-5	Residues	aaacggtcca aaagca	16
3-475	**Sequences**		
3-475-1	Sequence Number [ID]	475	
3-475-2	Molecule Type	RNA	
3-475-3	Length	16	
3-475-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-475-5	Residues	acggtccaaa agcata	16
3-476	**Sequences**		
3-476-1	Sequence Number [ID]	476	
3-476-2	Molecule Type	RNA	
3-476-3	Length	16	
3-476-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-476-5	Residues	caaaagcatc tataca	16
3-477	**Sequences**		
3-477-1	Sequence Number [ID]	477	
3-477-2	Molecule Type	RNA	
3-477-3	Length	16	
3-477-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-477-5	Residues	aaaagcatct atacga	16
3-478	**Sequences**		
3-478-1	Sequence Number [ID]	478	
3-478-2	Molecule Type	RNA	
3-478-3	Length	16	
3-478-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-478-5	Residues	aaagcatcta tacgca	16
3-479	**Sequences**		
3-479-1	Sequence Number [ID]	479	
3-479-2	Molecule Type	RNA	
3-479-3	Length	16	
3-479-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-479-5	Residues	aagcatctat acgcca	16
3-480	**Sequences**		
3-480-1	Sequence Number [ID]	480	
3-480-2	Molecule Type	RNA	
3-480-3	Length	16	
3-480-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-480-5	Residues	acaaagatgc agttta	16
3-481	**Sequences**		

3-481-1	Sequence Number [ID]	481	
3-481-2	Molecule Type	RNA	
3-481-3	Length	16	
3-481-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-481-5	Residues	caaagatgca gtttta	16
3-482	**Sequences**		
3-482-1	Sequence Number [ID]	482	
3-482-2	Molecule Type	RNA	
3-482-3	Length	16	
3-482-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-482-5	Residues	gtggaatgtg gatata	16
3-483	**Sequences**		
3-483-1	Sequence Number [ID]	483	
3-483-2	Molecule Type	RNA	
3-483-3	Length	16	
3-483-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-483-5	Residues	tggaatgtgg atataa	16
3-484	**Sequences**		
3-484-1	Sequence Number [ID]	484	
3-484-2	Molecule Type	RNA	
3-484-3	Length	16	
3-484-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-484-5	Residues	ggaatgtgga tataaa	16
3-485	**Sequences**		
3-485-1	Sequence Number [ID]	485	
3-485-2	Molecule Type	RNA	
3-485-3	Length	16	
3-485-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-485-5	Residues	gaatgtggat ataaga	16
3-486	**Sequences**		
3-486-1	Sequence Number [ID]	486	
3-486-2	Molecule Type	RNA	
3-486-3	Length	16	
3-486-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-486-5	Residues	aatgtggata taagta	16
3-487	**Sequences**		
3-487-1	Sequence Number [ID]	487	
3-487-2	Molecule Type	RNA	
3-487-3	Length	16	
3-487-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-487-5	Residues	atgtggatat aagtaa	16
3-488	**Sequences**		
3-488-1	Sequence Number [ID]	488	
3-488-2	Molecule Type	RNA	

3-488-3	Length	16	
3-488-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-488-5	Residues	ggatataagt atagaa	16
3-489	**Sequences**		
3-489-1	Sequence Number [ID]	489	
3-489-2	Molecule Type	RNA	
3-489-3	Length	16	
3-489-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-489-5	Residues	gatataagta tagata	16
3-490	**Sequences**		
3-490-1	Sequence Number [ID]	490	
3-490-2	Molecule Type	RNA	
3-490-3	Length	16	
3-490-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-490-5	Residues	atataagtat agatta	16
3-491	**Sequences**		
3-491-1	Sequence Number [ID]	491	
3-491-2	Molecule Type	RNA	
3-491-3	Length	16	
3-491-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-491-5	Residues	tataagtata gattca	16
3-492	**Sequences**		
3-492-1	Sequence Number [ID]	492	
3-492-2	Molecule Type	RNA	
3-492-3	Length	16	
3-492-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-492-5	Residues	ataagtatag attcta	16
3-493	**Sequences**		
3-493-1	Sequence Number [ID]	493	
3-493-2	Molecule Type	RNA	
3-493-3	Length	16	
3-493-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-493-5	Residues	tgccatttag atcaca	16
3-494	**Sequences**		
3-494-1	Sequence Number [ID]	494	
3-494-2	Molecule Type	RNA	
3-494-3	Length	16	
3-494-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-494-5	Residues	catttagatc acaaca	16
3-495	**Sequences**		
3-495-1	Sequence Number [ID]	495	
3-495-2	Molecule Type	RNA	
3-495-3	Length	16	

3-495-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-495-5	Residues	atttagatca caacta	16
3-496	**Sequences**		
3-496-1	Sequence Number [ID]	496	
3-496-2	Molecule Type	RNA	
3-496-3	Length	16	
3-496-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-496-5	Residues	tttagatcac aactta	16
3-497	**Sequences**		
3-497-1	Sequence Number [ID]	497	
3-497-2	Molecule Type	RNA	
3-497-3	Length	16	
3-497-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-497-5	Residues	ttagatcaca acttta	16
3-498	**Sequences**		
3-498-1	Sequence Number [ID]	498	
3-498-2	Molecule Type	RNA	
3-498-3	Length	16	
3-498-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-498-5	Residues	tagatcacaa ctttaa	16
3-499	**Sequences**		
3-499-1	Sequence Number [ID]	499	
3-499-2	Molecule Type	RNA	
3-499-3	Length	16	
3-499-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-499-5	Residues	agatcacaac tttata	16
3-500	**Sequences**		
3-500-1	Sequence Number [ID]	500	
3-500-2	Molecule Type	RNA	
3-500-3	Length	16	
3-500-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-500-5	Residues	gatcacaact ttatga	16
3-501	**Sequences**		
3-501-1	Sequence Number [ID]	501	
3-501-2	Molecule Type	RNA	
3-501-3	Length	16	
3-501-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-501-5	Residues	acaactttat gacaga	16
3-502	**Sequences**		
3-502-1	Sequence Number [ID]	502	
3-502-2	Molecule Type	RNA	
3-502-3	Length	16	
3-502-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-502-5	Residues	caactttatg acagca	16
3-503	**Sequences**		
3-503-1	Sequence Number [ID]	503	
3-503-2	Molecule Type	RNA	
3-503-3	Length	16	
3-503-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-503-5	Residues	aactttatga cagcaa	16
3-504	**Sequences**		
3-504-1	Sequence Number [ID]	504	
3-504-2	Molecule Type	RNA	
3-504-3	Length	16	
3-504-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-504-5	Residues	actttatgac agcaaa	16
3-505	**Sequences**		
3-505-1	Sequence Number [ID]	505	
3-505-2	Molecule Type	RNA	
3-505-3	Length	16	
3-505-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-505-5	Residues	ctttatgaca gcaaga	16
3-506	**Sequences**		
3-506-1	Sequence Number [ID]	506	
3-506-2	Molecule Type	RNA	
3-506-3	Length	16	
3-506-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-506-5	Residues	tttatgacag caagta	16
3-507	**Sequences**		
3-507-1	Sequence Number [ID]	507	
3-507-2	Molecule Type	RNA	
3-507-3	Length	16	
3-507-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-507-5	Residues	ttatgacagc aagtaa	16
3-508	**Sequences**		
3-508-1	Sequence Number [ID]	508	
3-508-2	Molecule Type	RNA	
3-508-3	Length	16	
3-508-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-508-5	Residues	ctactcacag actgta	16
3-509	**Sequences**		
3-509-1	Sequence Number [ID]	509	
3-509-2	Molecule Type	RNA	
3-509-3	Length	16	
3-509-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-509-5	Residues	tgggagttgt gaagca	16
3-510	**Sequences**		
3-510-1	Sequence Number [ID]	510	
3-510-2	Molecule Type	RNA	
3-510-3	Length	16	
3-510-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-510-5	Residues	gggagttgtg aagcaa	16
3-511	**Sequences**		
3-511-1	Sequence Number [ID]	511	
3-511-2	Molecule Type	RNA	
3-511-3	Length	16	
3-511-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-511-5	Residues	ggagttgtga agcaaa	16
3-512	**Sequences**		
3-512-1	Sequence Number [ID]	512	
3-512-2	Molecule Type	RNA	
3-512-3	Length	16	
3-512-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-512-5	Residues	agttgtgaag caaaca	16
3-513	**Sequences**		
3-513-1	Sequence Number [ID]	513	
3-513-2	Molecule Type	RNA	
3-513-3	Length	16	
3-513-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-513-5	Residues	gttgtgaagc aaacta	16
3-514	**Sequences**		
3-514-1	Sequence Number [ID]	514	
3-514-2	Molecule Type	RNA	
3-514-3	Length	16	
3-514-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-514-5	Residues	ttgtgaagca aactga	16
3-515	**Sequences**		
3-515-1	Sequence Number [ID]	515	
3-515-2	Molecule Type	RNA	
3-515-3	Length	16	
3-515-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-515-5	Residues	tgtgaagcaa actgaa	16
3-516	**Sequences**		
3-516-1	Sequence Number [ID]	516	
3-516-2	Molecule Type	RNA	
3-516-3	Length	16	
3-516-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-516-5	Residues	gtgaagcaaa ctgaaa	16

3-517	**Sequences**		
3-517-1	Sequence Number [ID]	517	
3-517-2	Molecule Type	RNA	
3-517-3	Length	16	
3-517-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-517-5	Residues	tgaagcaaac tgaaaa	16
3-518	**Sequences**		
3-518-1	Sequence Number [ID]	518	
3-518-2	Molecule Type	RNA	
3-518-3	Length	16	
3-518-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-518-5	Residues	gaagcaaact gaaaca	16
3-519	**Sequences**		
3-519-1	Sequence Number [ID]	519	
3-519-2	Molecule Type	RNA	
3-519-3	Length	16	
3-519-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-519-5	Residues	aagcaaactg aaacta	16
3-520	**Sequences**		
3-520-1	Sequence Number [ID]	520	
3-520-2	Molecule Type	RNA	
3-520-3	Length	16	
3-520-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-520-5	Residues	agcaaactga aactga	16
3-521	**Sequences**		
3-521-1	Sequence Number [ID]	521	
3-521-2	Molecule Type	RNA	
3-521-3	Length	16	
3-521-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-521-5	Residues	gcaaactgaa actgca	16
3-522	**Sequences**		
3-522-1	Sequence Number [ID]	522	
3-522-2	Molecule Type	RNA	
3-522-3	Length	16	
3-522-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-522-5	Residues	caaactgaaa ctgcaa	16
3-523	**Sequences**		
3-523-1	Sequence Number [ID]	523	
3-523-2	Molecule Type	RNA	
3-523-3	Length	16	
3-523-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-523-5	Residues	aaactgaaac tgcaga	16
3-524	**Sequences**		

3-524-1	Sequence Number [ID]	524	
3-524-2	Molecule Type	RNA	
3-524-3	Length	16	
3-524-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-524-5	Residues	aactgaaact gcagca	16
3-525	**Sequences**		
3-525-1	Sequence Number [ID]	525	
3-525-2	Molecule Type	RNA	
3-525-3	Length	16	
3-525-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-525-5	Residues	agacaacaga agttca	16
3-526	**Sequences**		
3-526-1	Sequence Number [ID]	526	
3-526-2	Molecule Type	RNA	
3-526-3	Length	16	
3-526-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-526-5	Residues	gaaattgact gcccta	16
3-527	**Sequences**		
3-527-1	Sequence Number [ID]	527	
3-527-2	Molecule Type	RNA	
3-527-3	Length	16	
3-527-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-527-5	Residues	ttgactgccc tttata	16
3-528	**Sequences**		
3-528-1	Sequence Number [ID]	528	
3-528-2	Molecule Type	RNA	
3-528-3	Length	16	
3-528-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-528-5	Residues	tgcccttat acaaaa	16
3-529	**Sequences**		
3-529-1	Sequence Number [ID]	529	
3-529-2	Molecule Type	RNA	
3-529-3	Length	16	
3-529-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-529-5	Residues	tggatgatgc tgtaaa	16
3-530	**Sequences**		
3-530-1	Sequence Number [ID]	530	
3-530-2	Molecule Type	RNA	
3-530-3	Length	16	
3-530-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-530-5	Residues	ttgatgagat aatgaa	16
3-531	**Sequences**		
3-531-1	Sequence Number [ID]	531	
3-531-2	Molecule Type	RNA	

3-531-3	Length	16	
3-531-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-531-5	Residues	ataatgactg atacta	16
3-532	**Sequences**		
3-532-1	Sequence Number [ID]	532	
3-532-2	Molecule Type	RNA	
3-532-3	Length	16	
3-532-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-532-5	Residues	tgcatctctg aaaata	16
3-533	**Sequences**		
3-533-1	Sequence Number [ID]	533	
3-533-2	Molecule Type	RNA	
3-533-3	Length	16	
3-533-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-533-5	Residues	gcatctctga aaataa	16
3-534	**Sequences**		
3-534-1	Sequence Number [ID]	534	
3-534-2	Molecule Type	RNA	
3-534-3	Length	16	
3-534-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-534-5	Residues	catctctgaa aataaa	16
3-535	**Sequences**		
3-535-1	Sequence Number [ID]	535	
3-535-2	Molecule Type	RNA	
3-535-3	Length	16	
3-535-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-535-5	Residues	atctctgaaa ataaga	16
3-536	**Sequences**		
3-536-1	Sequence Number [ID]	536	
3-536-2	Molecule Type	RNA	
3-536-3	Length	16	
3-536-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-536-5	Residues	tctctgaaaa taagga	16
3-537	**Sequences**		
3-537-1	Sequence Number [ID]	537	
3-537-2	Molecule Type	RNA	
3-537-3	Length	16	
3-537-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-537-5	Residues	ctctgaaaat aaggaa	16
3-538	**Sequences**		
3-538-1	Sequence Number [ID]	538	
3-538-2	Molecule Type	RNA	
3-538-3	Length	16	

3-538-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-538-5	Residues	tctgaaaata aggaaa	16
3-539	**Sequences**		
3-539-1	Sequence Number [ID]	539	
3-539-2	Molecule Type	RNA	
3-539-3	Length	16	
3-539-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-539-5	Residues	ctgaaaataa ggaaaa	16
3-540	**Sequences**		
3-540-1	Sequence Number [ID]	540	
3-540-2	Molecule Type	RNA	
3-540-3	Length	16	
3-540-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-540-5	Residues	gaaaataagg aaaata	16
3-541	**Sequences**		
3-541-1	Sequence Number [ID]	541	
3-541-2	Molecule Type	RNA	
3-541-3	Length	16	
3-541-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-541-5	Residues	aaaataagga aaatga	16
3-542	**Sequences**		
3-542-1	Sequence Number [ID]	542	
3-542-2	Molecule Type	RNA	
3-542-3	Length	16	
3-542-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-542-5	Residues	ccggatgtca agccta	16
3-543	**Sequences**		
3-543-1	Sequence Number [ID]	543	
3-543-2	Molecule Type	RNA	
3-543-3	Length	16	
3-543-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-543-5	Residues	tgtcaagcct gcagca	16
3-544	**Sequences**		
3-544-1	Sequence Number [ID]	544	
3-544-2	Molecule Type	RNA	
3-544-3	Length	16	
3-544-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-544-5	Residues	gcctgcagcc agtaga	16
3-545	**Sequences**		
3-545-1	Sequence Number [ID]	545	
3-545-2	Molecule Type	RNA	
3-545-3	Length	16	
3-545-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-545-5	Residues	cggccttgtc cgagca	16
3-546	**Sequences**		
3-546-1	Sequence Number [ID]	546	
3-546-2	Molecule Type	RNA	
3-546-3	Length	16	
3-546-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-546-5	Residues	acagaggcgc tcatca	16
3-547	**Sequences**		
3-547-1	Sequence Number [ID]	547	
3-547-2	Molecule Type	RNA	
3-547-3	Length	16	
3-547-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-547-5	Residues	ccacagagcc acatca	16
3-548	**Sequences**		
3-548-1	Sequence Number [ID]	548	
3-548-2	Molecule Type	RNA	
3-548-3	Length	16	
3-548-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-548-5	Residues	gaatacagcc atgcta	16
3-549	**Sequences**		
3-549-1	Sequence Number [ID]	549	
3-549-2	Molecule Type	RNA	
3-549-3	Length	16	
3-549-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-549-5	Residues	aatacagcca tgctta	16
3-550	**Sequences**		
3-550-1	Sequence Number [ID]	550	
3-550-2	Molecule Type	RNA	
3-550-3	Length	16	
3-550-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-550-5	Residues	atacagccat gcttta	16
3-551	**Sequences**		
3-551-1	Sequence Number [ID]	551	
3-551-2	Molecule Type	RNA	
3-551-3	Length	16	
3-551-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-551-5	Residues	tacagccatg ctttca	16
3-552	**Sequences**		
3-552-1	Sequence Number [ID]	552	
3-552-2	Molecule Type	RNA	
3-552-3	Length	16	
3-552-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-552-5	Residues	acagccatgc tttcca	16
3-553	**Sequences**		
3-553-1	Sequence Number [ID]	553	
3-553-2	Molecule Type	RNA	
3-553-3	Length	16	
3-553-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-553-5	Residues	cagccatgct ttccaa	16
3-554	**Sequences**		
3-554-1	Sequence Number [ID]	554	
3-554-2	Molecule Type	RNA	
3-554-3	Length	16	
3-554-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-554-5	Residues	agccatgctt tccaga	16
3-555	**Sequences**		
3-555-1	Sequence Number [ID]	555	
3-555-2	Molecule Type	RNA	
3-555-3	Length	16	
3-555-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-555-5	Residues	caggcagtta cagaga	16
3-556	**Sequences**		
3-556-1	Sequence Number [ID]	556	
3-556-2	Molecule Type	RNA	
3-556-3	Length	16	
3-556-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-556-5	Residues	aggcagttac agagta	16
3-557	**Sequences**		
3-557-1	Sequence Number [ID]	557	
3-557-2	Molecule Type	RNA	
3-557-3	Length	16	
3-557-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-557-5	Residues	ggcagttaca gagtta	16
3-558	**Sequences**		
3-558-1	Sequence Number [ID]	558	
3-558-2	Molecule Type	RNA	
3-558-3	Length	16	
3-558-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-558-5	Residues	gcagttacag agttta	16
3-559	**Sequences**		
3-559-1	Sequence Number [ID]	559	
3-559-2	Molecule Type	RNA	
3-559-3	Length	16	
3-559-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-559-5	Residues	cagttacaga gtttta	16

3-560	**Sequences**		
3-560-1	Sequence Number [ID]	560	
3-560-2	Molecule Type	RNA	
3-560-3	Length	16	
3-560-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-560-5	Residues	agttacagag ttttaa	16
3-561	**Sequences**		
3-561-1	Sequence Number [ID]	561	
3-561-2	Molecule Type	RNA	
3-561-3	Length	16	
3-561-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-561-5	Residues	gttacagagt tttata	16
3-562	**Sequences**		
3-562-1	Sequence Number [ID]	562	
3-562-2	Molecule Type	RNA	
3-562-3	Length	16	
3-562-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-562-5	Residues	gcaaaagata cagtta	16
3-563	**Sequences**		
3-563-1	Sequence Number [ID]	563	
3-563-2	Molecule Type	RNA	
3-563-3	Length	16	
3-563-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-563-5	Residues	agttgacatc aaagga	16
3-564	**Sequences**		
3-564-1	Sequence Number [ID]	564	
3-564-2	Molecule Type	RNA	
3-564-3	Length	16	
3-564-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-564-5	Residues	gttgacatca aaggta	16
3-565	**Sequences**		
3-565-1	Sequence Number [ID]	565	
3-565-2	Molecule Type	RNA	
3-565-3	Length	16	
3-565-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-565-5	Residues	ttgacatcaa aggtta	16
3-566	**Sequences**		
3-566-1	Sequence Number [ID]	566	
3-566-2	Molecule Type	RNA	
3-566-3	Length	16	
3-566-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-566-5	Residues	tgacatcaaa ggttca	16
3-567	**Sequences**		

3-567-1	Sequence Number [ID]	567	
3-567-2	Molecule Type	RNA	
3-567-3	Length	16	
3-567-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-567-5	Residues	gacatcaaag gttcta	16
3-568	**Sequences**		
3-568-1	Sequence Number [ID]	568	
3-568-2	Molecule Type	RNA	
3-568-3	Length	16	
3-568-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-568-5	Residues	acatcaaagg ttctca	16
3-569	**Sequences**		
3-569-1	Sequence Number [ID]	569	
3-569-2	Molecule Type	RNA	
3-569-3	Length	16	
3-569-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-569-5	Residues	catcaaaggt tctcaa	16
3-570	**Sequences**		
3-570-1	Sequence Number [ID]	570	
3-570-2	Molecule Type	RNA	
3-570-3	Length	16	
3-570-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-570-5	Residues	atcaaaggtt ctcaaa	16
3-571	**Sequences**		
3-571-1	Sequence Number [ID]	571	
3-571-2	Molecule Type	RNA	
3-571-3	Length	16	
3-571-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-571-5	Residues	ctggcattgt taacta	16
3-572	**Sequences**		
3-572-1	Sequence Number [ID]	572	
3-572-2	Molecule Type	RNA	
3-572-3	Length	16	
3-572-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-572-5	Residues	tggcattgtt aactta	16
3-573	**Sequences**		
3-573-1	Sequence Number [ID]	573	
3-573-2	Molecule Type	RNA	
3-573-3	Length	16	
3-573-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-573-5	Residues	ggcattgtta acttaa	16
3-574	**Sequences**		
3-574-1	Sequence Number [ID]	574	
3-574-2	Molecule Type	RNA	

3-574-3	Length	16	
3-574-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-574-5	Residues	gcattgttaa cttaga	16
3-575	**Sequences**		
3-575-1	Sequence Number [ID]	575	
3-575-2	Molecule Type	RNA	
3-575-3	Length	16	
3-575-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-575-5	Residues	cattgttaac ttagaa	16
3-576	**Sequences**		
3-576-1	Sequence Number [ID]	576	
3-576-2	Molecule Type	RNA	
3-576-3	Length	16	
3-576-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-576-5	Residues	attgttaact tagaga	16
3-577	**Sequences**		
3-577-1	Sequence Number [ID]	577	
3-577-2	Molecule Type	RNA	
3-577-3	Length	16	
3-577-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-577-5	Residues	ttgttaactt agagaa	16
3-578	**Sequences**		
3-578-1	Sequence Number [ID]	578	
3-578-2	Molecule Type	RNA	
3-578-3	Length	16	
3-578-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-578-5	Residues	tagagaagcc tgtgaa	16
3-579	**Sequences**		
3-579-1	Sequence Number [ID]	579	
3-579-2	Molecule Type	RNA	
3-579-3	Length	16	
3-579-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-579-5	Residues	gctctttggc tgccaa	16
3-580	**Sequences**		
3-580-1	Sequence Number [ID]	580	
3-580-2	Molecule Type	RNA	
3-580-3	Length	16	
3-580-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-580-5	Residues	ttggctgcca tcataa	16
3-581	**Sequences**		
3-581-1	Sequence Number [ID]	581	
3-581-2	Molecule Type	RNA	
3-581-3	Length	16	

3-581-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-581-5	Residues	ccatcataaa atacca	16
3-582	**Sequences**		
3-582-1	Sequence Number [ID]	582	
3-582-2	Molecule Type	RNA	
3-582-3	Length	16	
3-582-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-582-5	Residues	atcataaaat acctca	16
3-583	**Sequences**		
3-583-1	Sequence Number [ID]	583	
3-583-2	Molecule Type	RNA	
3-583-3	Length	16	
3-583-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-583-5	Residues	tcataaaata cctcaa	16
3-584	**Sequences**		
3-584-1	Sequence Number [ID]	584	
3-584-2	Molecule Type	RNA	
3-584-3	Length	16	
3-584-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-584-5	Residues	cataaaatac ctcaaa	16
3-585	**Sequences**		
3-585-1	Sequence Number [ID]	585	
3-585-2	Molecule Type	RNA	
3-585-3	Length	16	
3-585-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-585-5	Residues	ataaaatacc tcaaaa	16
3-586	**Sequences**		
3-586-1	Sequence Number [ID]	586	
3-586-2	Molecule Type	RNA	
3-586-3	Length	16	
3-586-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-586-5	Residues	taaaatacct caaaga	16
3-587	**Sequences**		
3-587-1	Sequence Number [ID]	587	
3-587-2	Molecule Type	RNA	
3-587-3	Length	16	
3-587-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-587-5	Residues	aaaatacctc aaagaa	16
3-588	**Sequences**		
3-588-1	Sequence Number [ID]	588	
3-588-2	Molecule Type	RNA	
3-588-3	Length	16	
3-588-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-588-5	Residues	aaatacctca aagaaa	16
3-589	**Sequences**		
3-589-1	Sequence Number [ID]	589	
3-589-2	Molecule Type	RNA	
3-589-3	Length	16	
3-589-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-589-5	Residues	gaattcaact tggaaa	16
3-590	**Sequences**		
3-590-1	Sequence Number [ID]	590	
3-590-2	Molecule Type	RNA	
3-590-3	Length	16	
3-590-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-590-5	Residues	ttggaaaaga tgctca	16
3-591	**Sequences**		
3-591-1	Sequence Number [ID]	591	
3-591-2	Molecule Type	RNA	
3-591-3	Length	16	
3-591-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-591-5	Residues	gaattttaaa cagcta	16
3-592	**Sequences**		
3-592-1	Sequence Number [ID]	592	
3-592-2	Molecule Type	RNA	
3-592-3	Length	16	
3-592-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-592-5	Residues	aattttaaac agctaa	16
3-593	**Sequences**		
3-593-1	Sequence Number [ID]	593	
3-593-2	Molecule Type	RNA	
3-593-3	Length	16	
3-593-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-593-5	Residues	attttaaaca gctata	16
3-594	**Sequences**		
3-594-1	Sequence Number [ID]	594	
3-594-2	Molecule Type	RNA	
3-594-3	Length	16	
3-594-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-594-5	Residues	ttttaaacag ctatca	16
3-595	**Sequences**		
3-595-1	Sequence Number [ID]	595	
3-595-2	Molecule Type	RNA	
3-595-3	Length	16	
3-595-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-595-5	Residues	tttaaacagc tatcaa	16
3-596	**Sequences**		
3-596-1	Sequence Number [ID]	596	
3-596-2	Molecule Type	RNA	
3-596-3	Length	16	
3-596-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-596-5	Residues	caacattaag gaatca	16
3-597	**Sequences**		
3-597-1	Sequence Number [ID]	597	
3-597-2	Molecule Type	RNA	
3-597-3	Length	16	
3-597-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-597-5	Residues	aacattaagg aatcta	16
3-598	**Sequences**		
3-598-1	Sequence Number [ID]	598	
3-598-2	Molecule Type	RNA	
3-598-3	Length	16	
3-598-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-598-5	Residues	acattaagga atctga	16
3-599	**Sequences**		
3-599-1	Sequence Number [ID]	599	
3-599-2	Molecule Type	RNA	
3-599-3	Length	16	
3-599-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-599-5	Residues	cattaaggaa tctgga	16
3-600	**Sequences**		
3-600-1	Sequence Number [ID]	600	
3-600-2	Molecule Type	RNA	
3-600-3	Length	16	
3-600-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-600-5	Residues	attaaggaat ctggaa	16
3-601	**Sequences**		
3-601-1	Sequence Number [ID]	601	
3-601-2	Molecule Type	RNA	
3-601-3	Length	16	
3-601-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-601-5	Residues	agaatcagac tgataa	16
3-602	**Sequences**		
3-602-1	Sequence Number [ID]	602	
3-602-2	Molecule Type	RNA	
3-602-3	Length	16	
3-602-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-602-5	Residues	gaatcagact gatata	16

3-603	**Sequences**		
3-603-1	Sequence Number [ID]	603	
3-603-2	Molecule Type	RNA	
3-603-3	Length	16	
3-603-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-603-5	Residues	aatcagactg atatga	16
3-604	**Sequences**		
3-604-1	Sequence Number [ID]	604	
3-604-2	Molecule Type	RNA	
3-604-3	Length	16	
3-604-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-604-5	Residues	atcagactga tatgaa	16
3-605	**Sequences**		
3-605-1	Sequence Number [ID]	605	
3-605-2	Molecule Type	RNA	
3-605-3	Length	16	
3-605-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-605-5	Residues	tcagactgat atgaaa	16
3-606	**Sequences**		
3-606-1	Sequence Number [ID]	606	
3-606-2	Molecule Type	RNA	
3-606-3	Length	16	
3-606-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-606-5	Residues	cagactgata tgaaaa	16
3-607	**Sequences**		
3-607-1	Sequence Number [ID]	607	
3-607-2	Molecule Type	RNA	
3-607-3	Length	16	
3-607-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-607-5	Residues	gactgatatg aaaaca	16
3-608	**Sequences**		
3-608-1	Sequence Number [ID]	608	
3-608-2	Molecule Type	RNA	
3-608-3	Length	16	
3-608-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-608-5	Residues	tgatatgaaa accaaa	16
3-609	**Sequences**		
3-609-1	Sequence Number [ID]	609	
3-609-2	Molecule Type	RNA	
3-609-3	Length	16	
3-609-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-609-5	Residues	gttttagacc acacta	16
3-610	**Sequences**		

3-610-1	Sequence Number [ID]	610	
3-610-2	Molecule Type	RNA	
3-610-3	Length	16	
3-610-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-610-5	Residues	`ttttagacca cactaa`	16
3-611	**Sequences**		
3-611-1	Sequence Number [ID]	611	
3-611-2	Molecule Type	RNA	
3-611-3	Length	16	
3-611-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-611-5	Residues	`tttagaccac actaaa`	16
3-612	**Sequences**		
3-612-1	Sequence Number [ID]	612	
3-612-2	Molecule Type	RNA	
3-612-3	Length	16	
3-612-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-612-5	Residues	`tgggagacgg aagtta`	16
3-613	**Sequences**		
3-613-1	Sequence Number [ID]	613	
3-613-2	Molecule Type	RNA	
3-613-3	Length	16	
3-613-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-613-5	Residues	`agccactcct taaata`	16
3-614	**Sequences**		
3-614-1	Sequence Number [ID]	614	
3-614-2	Molecule Type	RNA	
3-614-3	Length	16	
3-614-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-614-5	Residues	`atgctgtatc ggaaga`	16
3-615	**Sequences**		
3-615-1	Sequence Number [ID]	615	
3-615-2	Molecule Type	RNA	
3-615-3	Length	16	
3-615-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-615-5	Residues	`tgctgtatcg gaagta`	16
3-616	**Sequences**		
3-616-1	Sequence Number [ID]	616	
3-616-2	Molecule Type	RNA	
3-616-3	Length	16	
3-616-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-616-5	Residues	`gctgtatcgg aagtta`	16
3-617	**Sequences**		
3-617-1	Sequence Number [ID]	617	
3-617-2	Molecule Type	RNA	

3-617-3	Length	16	
3-617-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-617-5	Residues	ctgtatcgga agttca	16
3-618	**Sequences**		
3-618-1	Sequence Number [ID]	618	
3-618-2	Molecule Type	RNA	
3-618-3	Length	16	
3-618-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-618-5	Residues	tgtatcggaa gttcta	16
3-619	**Sequences**		
3-619-1	Sequence Number [ID]	619	
3-619-2	Molecule Type	RNA	
3-619-3	Length	16	
3-619-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-619-5	Residues	gtatcggaag ttctca	16
3-620	**Sequences**		
3-620-1	Sequence Number [ID]	620	
3-620-2	Molecule Type	RNA	
3-620-3	Length	16	
3-620-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-620-5	Residues	tatcggaagt tctcca	16
3-621	**Sequences**		
3-621-1	Sequence Number [ID]	621	
3-621-2	Molecule Type	RNA	
3-621-3	Length	16	
3-621-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-621-5	Residues	ttggtcagat agaaaa	16
3-622	**Sequences**		
3-622-1	Sequence Number [ID]	622	
3-622-2	Molecule Type	RNA	
3-622-3	Length	16	
3-622-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-622-5	Residues	ggtcagatag aaaata	16
3-623	**Sequences**		
3-623-1	Sequence Number [ID]	623	
3-623-2	Molecule Type	RNA	
3-623-3	Length	16	
3-623-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-623-5	Residues	gtcagataga aaatca	16
3-624	**Sequences**		
3-624-1	Sequence Number [ID]	624	
3-624-2	Molecule Type	RNA	
3-624-3	Length	16	

3-624-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-624-5	Residues	tcagatagaa aatcaa	16
3-625	**Sequences**		
3-625-1	Sequence Number [ID]	625	
3-625-2	Molecule Type	RNA	
3-625-3	Length	16	
3-625-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-625-5	Residues	cagatagaaa atcata	16
3-626	**Sequences**		
3-626-1	Sequence Number [ID]	626	
3-626-2	Molecule Type	RNA	
3-626-3	Length	16	
3-626-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-626-5	Residues	agatagaaaa tcatca	16
3-627	**Sequences**		
3-627-1	Sequence Number [ID]	627	
3-627-2	Molecule Type	RNA	
3-627-3	Length	16	
3-627-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-627-5	Residues	tgcccgacat agagaa	16
3-628	**Sequences**		
3-628-1	Sequence Number [ID]	628	
3-628-2	Molecule Type	RNA	
3-628-3	Length	16	
3-628-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-628-5	Residues	gtagcattta tcacaa	16
3-629	**Sequences**		
3-629-1	Sequence Number [ID]	629	
3-629-2	Molecule Type	RNA	
3-629-3	Length	16	
3-629-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-629-5	Residues	tagcatttat cacaaa	16
3-630	**Sequences**		
3-630-1	Sequence Number [ID]	630	
3-630-2	Molecule Type	RNA	
3-630-3	Length	16	
3-630-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-630-5	Residues	agcatttatc acaaaa	16
3-631	**Sequences**		
3-631-1	Sequence Number [ID]	631	
3-631-2	Molecule Type	RNA	
3-631-3	Length	16	
3-631-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-631-5	Residues	ctacccaaga gttcta	16
3-632	**Sequences**		
3-632-1	Sequence Number [ID]	632	
3-632-2	Molecule Type	RNA	
3-632-3	Length	16	
3-632-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-632-5	Residues	acccaagagt tcttca	16
3-633	**Sequences**		
3-633-1	Sequence Number [ID]	633	
3-633-2	Molecule Type	RNA	
3-633-3	Length	16	
3-633-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-633-5	Residues	cccaagagtt cttcta	16
3-634	**Sequences**		
3-634-1	Sequence Number [ID]	634	
3-634-2	Molecule Type	RNA	
3-634-3	Length	16	
3-634-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-634-5	Residues	ccaagagttc ttctta	16
3-635	**Sequences**		
3-635-1	Sequence Number [ID]	635	
3-635-2	Molecule Type	RNA	
3-635-3	Length	16	
3-635-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-635-5	Residues	caagagttct tcttga	16
3-636	**Sequences**		
3-636-1	Sequence Number [ID]	636	
3-636-2	Molecule Type	RNA	
3-636-3	Length	16	
3-636-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-636-5	Residues	aagagttctt cttgaa	16
3-637	**Sequences**		
3-637-1	Sequence Number [ID]	637	
3-637-2	Molecule Type	RNA	
3-637-3	Length	16	
3-637-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-637-5	Residues	agagttcttc ttgata	16
3-638	**Sequences**		
3-638-1	Sequence Number [ID]	638	
3-638-2	Molecule Type	RNA	
3-638-3	Length	16	
3-638-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-638-5	Residues	ttgattgtca aaacta	16
3-639	**Sequences**		
3-639-1	Sequence Number [ID]	639	
3-639-2	Molecule Type	RNA	
3-639-3	Length	16	
3-639-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-639-5	Residues	cctaaagtca gaatta	16
3-640	**Sequences**		
3-640-1	Sequence Number [ID]	640	
3-640-2	Molecule Type	RNA	
3-640-3	Length	16	
3-640-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-640-5	Residues	ctaaagtcag aattta	16
3-641	**Sequences**		
3-641-1	Sequence Number [ID]	641	
3-641-2	Molecule Type	RNA	
3-641-3	Length	16	
3-641-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-641-5	Residues	taaagtcaga atttca	16
3-642	**Sequences**		
3-642-1	Sequence Number [ID]	642	
3-642-2	Molecule Type	RNA	
3-642-3	Length	16	
3-642-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-642-5	Residues	aaagtcagaa tttcaa	16
3-643	**Sequences**		
3-643-1	Sequence Number [ID]	643	
3-643-2	Molecule Type	RNA	
3-643-3	Length	16	
3-643-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-643-5	Residues	aagtcagaat ttcaaa	16
3-644	**Sequences**		
3-644-1	Sequence Number [ID]	644	
3-644-2	Molecule Type	RNA	
3-644-3	Length	16	
3-644-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-644-5	Residues	gcaataatac ctgcta	16
3-645	**Sequences**		
3-645-1	Sequence Number [ID]	645	
3-645-2	Molecule Type	RNA	
3-645-3	Length	16	
3-645-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-645-5	Residues	ctgctgttaa ttccca	16

3-646	**Sequences**		
3-646-1	Sequence Number [ID]	646	
3-646-2	Molecule Type	RNA	
3-646-3	Length	16	
3-646-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-646-5	Residues	gctgttaatt cccaca	16
3-647	**Sequences**		
3-647-1	Sequence Number [ID]	647	
3-647-2	Molecule Type	RNA	
3-647-3	Length	16	
3-647-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-647-5	Residues	agacttgctc cggaca	16
3-648	**Sequences**		
3-648-1	Sequence Number [ID]	648	
3-648-2	Molecule Type	RNA	
3-648-3	Length	16	
3-648-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-648-5	Residues	tcctcagtcc agtgga	16
3-649	**Sequences**		
3-649-1	Sequence Number [ID]	649	
3-649-2	Molecule Type	RNA	
3-649-3	Length	16	
3-649-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-649-5	Residues	agtggagcat tactta	16
3-650	**Sequences**		
3-650-1	Sequence Number [ID]	650	
3-650-2	Molecule Type	RNA	
3-650-3	Length	16	
3-650-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-650-5	Residues	tggagcatta cttaaa	16
3-651	**Sequences**		
3-651-1	Sequence Number [ID]	651	
3-651-2	Molecule Type	RNA	
3-651-3	Length	16	
3-651-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-651-5	Residues	acctttctga cttcca	16
3-652	**Sequences**		
3-652-1	Sequence Number [ID]	652	
3-652-2	Molecule Type	RNA	
3-652-3	Length	16	
3-652-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-652-5	Residues	ctgacttccc tttaaa	16
3-653	**Sequences**		

3-653-1	Sequence Number [ID]	653	
3-653-2	Molecule Type	RNA	
3-653-3	Length	16	
3-653-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-653-5	Residues	tgacttccct ttaata	16
3-654	**Sequences**		
3-654-1	Sequence Number [ID]	654	
3-654-2	Molecule Type	RNA	
3-654-3	Length	16	
3-654-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-654-5	Residues	gacttccctt taataa	16
3-655	**Sequences**		
3-655-1	Sequence Number [ID]	655	
3-655-2	Molecule Type	RNA	
3-655-3	Length	16	
3-655-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-655-5	Residues	acttcccttt aataaa	16
3-656	**Sequences**		
3-656-1	Sequence Number [ID]	656	
3-656-2	Molecule Type	RNA	
3-656-3	Length	16	
3-656-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-656-5	Residues	cttcccttta ataaaa	16
3-657	**Sequences**		
3-657-1	Sequence Number [ID]	657	
3-657-2	Molecule Type	RNA	
3-657-3	Length	16	
3-657-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-657-5	Residues	acgagatccg aatgca	16
3-658	**Sequences**		
3-658-1	Sequence Number [ID]	658	
3-658-2	Molecule Type	RNA	
3-658-3	Length	16	
3-658-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-658-5	Residues	aatgcatttg caagaa	16
3-659	**Sequences**		
3-659-1	Sequence Number [ID]	659	
3-659-2	Molecule Type	RNA	
3-659-3	Length	16	
3-659-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-659-5	Residues	atgcatttgc aagaaa	16
3-660	**Sequences**		
3-660-1	Sequence Number [ID]	660	
3-660-2	Molecule Type	RNA	

3-660-3	Length	16	
3-660-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-660-5	Residues	tgcatttgca agaaaa	16
3-661	**Sequences**		
3-661-1	Sequence Number [ID]	661	
3-661-2	Molecule Type	RNA	
3-661-3	Length	16	
3-661-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-661-5	Residues	gcatttgcaa gaaata	16
3-662	**Sequences**		
3-662-1	Sequence Number [ID]	662	
3-662-2	Molecule Type	RNA	
3-662-3	Length	16	
3-662-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-662-5	Residues	catttgcaag aaataa	16
3-663	**Sequences**		
3-663-1	Sequence Number [ID]	663	
3-663-2	Molecule Type	RNA	
3-663-3	Length	16	
3-663-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-663-5	Residues	tgcaagaaat acgaaa	16
3-664	**Sequences**		
3-664-1	Sequence Number [ID]	664	
3-664-2	Molecule Type	RNA	
3-664-3	Length	16	
3-664-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-664-5	Residues	gtatcaggac aggaga	16
3-665	**Sequences**		
3-665-1	Sequence Number [ID]	665	
3-665-2	Molecule Type	RNA	
3-665-3	Length	16	
3-665-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-665-5	Residues	tatcaggaca ggagta	16
3-666	**Sequences**		
3-666-1	Sequence Number [ID]	666	
3-666-2	Molecule Type	RNA	
3-666-3	Length	16	
3-666-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-666-5	Residues	atcaggacag gagtta	16
3-667	**Sequences**		
3-667-1	Sequence Number [ID]	667	
3-667-2	Molecule Type	RNA	
3-667-3	Length	16	

3-667-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-667-5	Residues	tcaggacagg agttta	16
3-668	**Sequences**		
3-668-1	Sequence Number [ID]	668	
3-668-2	Molecule Type	RNA	
3-668-3	Length	16	
3-668-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-668-5	Residues	caggacagga gtttaa	16
3-669	**Sequences**		
3-669-1	Sequence Number [ID]	669	
3-669-2	Molecule Type	RNA	
3-669-3	Length	16	
3-669-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-669-5	Residues	aggacaggag tttata	16
3-670	**Sequences**		
3-670-1	Sequence Number [ID]	670	
3-670-2	Molecule Type	RNA	
3-670-3	Length	16	
3-670-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-670-5	Residues	ggacaggagt ttatga	16
3-671	**Sequences**		
3-671-1	Sequence Number [ID]	671	
3-671-2	Molecule Type	RNA	
3-671-3	Length	16	
3-671-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-671-5	Residues	tagaaataaa gaacta	16
3-672	**Sequences**		
3-672-1	Sequence Number [ID]	672	
3-672-2	Molecule Type	RNA	
3-672-3	Length	16	
3-672-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-672-5	Residues	agaaataaag aactca	16
3-673	**Sequences**		
3-673-1	Sequence Number [ID]	673	
3-673-2	Molecule Type	RNA	
3-673-3	Length	16	
3-673-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-673-5	Residues	gaaataaaga actcta	16
3-674	**Sequences**		
3-674-1	Sequence Number [ID]	674	
3-674-2	Molecule Type	RNA	
3-674-3	Length	16	
3-674-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-674-5	Residues	aaataaagaa ctctga	16
3-675	**Sequences**		
3-675-1	Sequence Number [ID]	675	
3-675-2	Molecule Type	RNA	
3-675-3	Length	16	
3-675-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-675-5	Residues	aataaagaac tctgca	16
3-676	**Sequences**		
3-676-1	Sequence Number [ID]	676	
3-676-2	Molecule Type	RNA	
3-676-3	Length	16	
3-676-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-676-5	Residues	ttgtatacca actgaa	16
3-677	**Sequences**		
3-677-1	Sequence Number [ID]	677	
3-677-2	Molecule Type	RNA	
3-677-3	Length	16	
3-677-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-677-5	Residues	ggttggaagc acaaaa	16
3-678	**Sequences**		
3-678-1	Sequence Number [ID]	678	
3-678-2	Molecule Type	RNA	
3-678-3	Length	16	
3-678-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-678-5	Residues	agcacaaaag ctgtga	16
3-679	**Sequences**		
3-679-1	Sequence Number [ID]	679	
3-679-2	Molecule Type	RNA	
3-679-3	Length	16	
3-679-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-679-5	Residues	gcacaaaagc tgtgaa	16
3-680	**Sequences**		
3-680-1	Sequence Number [ID]	680	
3-680-2	Molecule Type	RNA	
3-680-3	Length	16	
3-680-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-680-5	Residues	cacaaaagct gtgaga	16
3-681	**Sequences**		
3-681-1	Sequence Number [ID]	681	
3-681-2	Molecule Type	RNA	
3-681-3	Length	16	
3-681-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-681-5	Residues	acaaaagctg tgagca	16
3-682	**Sequences**		
3-682-1	Sequence Number [ID]	682	
3-682-2	Molecule Type	RNA	
3-682-3	Length	16	
3-682-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-682-5	Residues	caaaagctgt gagcca	16
3-683	**Sequences**		
3-683-1	Sequence Number [ID]	683	
3-683-2	Molecule Type	RNA	
3-683-3	Length	16	
3-683-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-683-5	Residues	aaaagctgtg agccga	16
3-684	**Sequences**		
3-684-1	Sequence Number [ID]	684	
3-684-2	Molecule Type	RNA	
3-684-3	Length	16	
3-684-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-684-5	Residues	aaagctgtga gccgca	16
3-685	**Sequences**		
3-685-1	Sequence Number [ID]	685	
3-685-2	Molecule Type	RNA	
3-685-3	Length	16	
3-685-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-685-5	Residues	ccgctttcac tctcca	16
3-686	**Sequences**		
3-686-1	Sequence Number [ID]	686	
3-686-2	Molecule Type	RNA	
3-686-3	Length	16	
3-686-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-686-5	Residues	cgctttcact ctccta	16
3-687	**Sequences**		
3-687-1	Sequence Number [ID]	687	
3-687-2	Molecule Type	RNA	
3-687-3	Length	16	
3-687-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-687-5	Residues	gctttcactc tcctta	16
3-688	**Sequences**		
3-688-1	Sequence Number [ID]	688	
3-688-2	Molecule Type	RNA	
3-688-3	Length	16	
3-688-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-688-5	Residues	ctttcactct ccttta	16

3-689	**Sequences**		
3-689-1	Sequence Number [ID]	689	
3-689-2	Molecule Type	RNA	
3-689-3	Length	16	
3-689-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-689-5	Residues	tttcactctc ctttta	16
3-690	**Sequences**		
3-690-1	Sequence Number [ID]	690	
3-690-2	Molecule Type	RNA	
3-690-3	Length	16	
3-690-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-690-5	Residues	ttcactctcc ttttaa	16
3-691	**Sequences**		
3-691-1	Sequence Number [ID]	691	
3-691-2	Molecule Type	RNA	
3-691-3	Length	16	
3-691-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-691-5	Residues	tgctgaatgg cttgaa	16
3-692	**Sequences**		
3-692-1	Sequence Number [ID]	692	
3-692-2	Molecule Type	RNA	
3-692-3	Length	16	
3-692-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-692-5	Residues	gctgaatggc ttgata	16
3-693	**Sequences**		
3-693-1	Sequence Number [ID]	693	
3-693-2	Molecule Type	RNA	
3-693-3	Length	16	
3-693-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-693-5	Residues	ctgaatggct tgatta	16
3-694	**Sequences**		
3-694-1	Sequence Number [ID]	694	
3-694-2	Molecule Type	RNA	
3-694-3	Length	16	
3-694-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-694-5	Residues	tgaatggctt gattta	16
3-695	**Sequences**		
3-695-1	Sequence Number [ID]	695	
3-695-2	Molecule Type	RNA	
3-695-3	Length	16	
3-695-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-695-5	Residues	gaatggcttg atttta	16
3-696	**Sequences**		

3-696-1	Sequence Number [ID]	696	
3-696-2	Molecule Type	RNA	
3-696-3	Length	16	
3-696-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-696-5	Residues	tggcttgatt ttctaa	16
3-697	**Sequences**		
3-697-1	Sequence Number [ID]	697	
3-697-2	Molecule Type	RNA	
3-697-3	Length	16	
3-697-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-697-5	Residues	ggcttgattt tctaga	16
3-698	**Sequences**		
3-698-1	Sequence Number [ID]	698	
3-698-2	Molecule Type	RNA	
3-698-3	Length	16	
3-698-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-698-5	Residues	gcttgatttt ctagaa	16
3-699	**Sequences**		
3-699-1	Sequence Number [ID]	699	
3-699-2	Molecule Type	RNA	
3-699-3	Length	16	
3-699-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-699-5	Residues	cttgattttc tagaga	16
3-700	**Sequences**		
3-700-1	Sequence Number [ID]	700	
3-700-2	Molecule Type	RNA	
3-700-3	Length	16	
3-700-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-700-5	Residues	ttgattttct agagaa	16
3-701	**Sequences**		
3-701-1	Sequence Number [ID]	701	
3-701-2	Molecule Type	RNA	
3-701-3	Length	16	
3-701-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-701-5	Residues	tgattttcta gagaaa	16
3-702	**Sequences**		
3-702-1	Sequence Number [ID]	702	
3-702-2	Molecule Type	RNA	
3-702-3	Length	16	
3-702-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-702-5	Residues	gattttctag agaaaa	16
3-703	**Sequences**		
3-703-1	Sequence Number [ID]	703	
3-703-2	Molecule Type	RNA	

3-703-3	Length	16	
3-703-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-703-5	Residues	ttctagagaa attcaa	16
3-704	**Sequences**		
3-704-1	Sequence Number [ID]	704	
3-704-2	Molecule Type	RNA	
3-704-3	Length	16	
3-704-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-704-5	Residues	agagaaattc agtgaa	16
3-705	**Sequences**		
3-705-1	Sequence Number [ID]	705	
3-705-2	Molecule Type	RNA	
3-705-3	Length	16	
3-705-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-705-5	Residues	tgaacattat cactca	16
3-706	**Sequences**		
3-706-1	Sequence Number [ID]	706	
3-706-2	Molecule Type	RNA	
3-706-3	Length	16	
3-706-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-706-5	Residues	aacattatca ctccta	16
3-707	**Sequences**		
3-707-1	Sequence Number [ID]	707	
3-707-2	Molecule Type	RNA	
3-707-3	Length	16	
3-707-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-707-5	Residues	tcacctagca actgta	16
3-708	**Sequences**		
3-708-1	Sequence Number [ID]	708	
3-708-2	Molecule Type	RNA	
3-708-3	Length	16	
3-708-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-708-5	Residues	actgcatttt ctccca	16
3-709	**Sequences**		
3-709-1	Sequence Number [ID]	709	
3-709-2	Molecule Type	RNA	
3-709-3	Length	16	
3-709-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-709-5	Residues	tcgctaagca aggaga	16
3-710	**Sequences**		
3-710-1	Sequence Number [ID]	710	
3-710-2	Molecule Type	RNA	
3-710-3	Length	16	

3-710-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-710-5	Residues	caaggagatt actgca	16
3-711	**Sequences**		
3-711-1	Sequence Number [ID]	711	
3-711-2	Molecule Type	RNA	
3-711-3	Length	16	
3-711-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-711-5	Residues	ttatcagagg actcaa	16
3-712	**Sequences**		
3-712-1	Sequence Number [ID]	712	
3-712-2	Molecule Type	RNA	
3-712-3	Length	16	
3-712-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-712-5	Residues	actcagagag agtaaa	16
3-713	**Sequences**		
3-713-1	Sequence Number [ID]	713	
3-713-2	Molecule Type	RNA	
3-713-3	Length	16	
3-713-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-713-5	Residues	agagagtaat gataaa	16
3-714	**Sequences**		
3-714-1	Sequence Number [ID]	714	
3-714-2	Molecule Type	RNA	
3-714-3	Length	16	
3-714-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-714-5	Residues	gagagtaatg ataata	16
3-715	**Sequences**		
3-715-1	Sequence Number [ID]	715	
3-715-2	Molecule Type	RNA	
3-715-3	Length	16	
3-715-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-715-5	Residues	agagtaatga taatta	16
3-716	**Sequences**		
3-716-1	Sequence Number [ID]	716	
3-716-2	Molecule Type	RNA	
3-716-3	Length	16	
3-716-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-716-5	Residues	gagtaatgat aattaa	16
3-717	**Sequences**		
3-717-1	Sequence Number [ID]	717	
3-717-2	Molecule Type	RNA	
3-717-3	Length	16	
3-717-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-717-5	Residues	aaagagctcc tacata	16
3-718	**Sequences**		
3-718-1	Sequence Number [ID]	718	
3-718-2	Molecule Type	RNA	
3-718-3	Length	16	
3-718-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-718-5	Residues	gctcctacat aaaaca	16
3-719	**Sequences**		
3-719-1	Sequence Number [ID]	719	
3-719-2	Molecule Type	RNA	
3-719-3	Length	16	
3-719-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-719-5	Residues	ctcctacata aaacaa	16
3-720	**Sequences**		
3-720-1	Sequence Number [ID]	720	
3-720-2	Molecule Type	RNA	
3-720-3	Length	16	
3-720-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-720-5	Residues	cctacataaa acaaga	16
3-721	**Sequences**		
3-721-1	Sequence Number [ID]	721	
3-721-2	Molecule Type	RNA	
3-721-3	Length	16	
3-721-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-721-5	Residues	ctacataaaa caagta	16
3-722	**Sequences**		
3-722-1	Sequence Number [ID]	722	
3-722-2	Molecule Type	RNA	
3-722-3	Length	16	
3-722-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-722-5	Residues	tacataaaac aagtta	16
3-723	**Sequences**		
3-723-1	Sequence Number [ID]	723	
3-723-2	Molecule Type	RNA	
3-723-3	Length	16	
3-723-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-723-5	Residues	acataaaaca agttga	16
3-724	**Sequences**		
3-724-1	Sequence Number [ID]	724	
3-724-2	Molecule Type	RNA	
3-724-3	Length	16	
3-724-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-724-5	Residues	cataaaacaa gttgca	16
3-725	**Sequences**		
3-725-1	Sequence Number [ID]	725	
3-725-2	Molecule Type	RNA	
3-725-3	Length	16	
3-725-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-725-5	Residues	ataaaacaag ttgcaa	16
3-726	**Sequences**		
3-726-1	Sequence Number [ID]	726	
3-726-2	Molecule Type	RNA	
3-726-3	Length	16	
3-726-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-726-5	Residues	taaaacaagt tgcata	16
3-727	**Sequences**		
3-727-1	Sequence Number [ID]	727	
3-727-2	Molecule Type	RNA	
3-727-3	Length	16	
3-727-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-727-5	Residues	tggcattttc acaaga	16
3-728	**Sequences**		
3-728-1	Sequence Number [ID]	728	
3-728-2	Molecule Type	RNA	
3-728-3	Length	16	
3-728-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-728-5	Residues	ggcattttca caagga	16
3-729	**Sequences**		
3-729-1	Sequence Number [ID]	729	
3-729-2	Molecule Type	RNA	
3-729-3	Length	16	
3-729-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-729-5	Residues	gcattttcac aaggaa	16
3-730	**Sequences**		
3-730-1	Sequence Number [ID]	730	
3-730-2	Molecule Type	RNA	
3-730-3	Length	16	
3-730-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-730-5	Residues	cattttcaca aggata	16
3-731	**Sequences**		
3-731-1	Sequence Number [ID]	731	
3-731-2	Molecule Type	RNA	
3-731-3	Length	16	
3-731-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-731-5	Residues	attttcacaa ggatga	16

3-732	**Sequences**		
3-732-1	Sequence Number [ID]	732	
3-732-2	Molecule Type	RNA	
3-732-3	Length	16	
3-732-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-732-5	Residues	ggtgctgcag acaata	16
3-733	**Sequences**		
3-733-1	Sequence Number [ID]	733	
3-733-2	Molecule Type	RNA	
3-733-3	Length	16	
3-733-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-733-5	Residues	tgctgcagac aatata	16
3-734	**Sequences**		
3-734-1	Sequence Number [ID]	734	
3-734-2	Molecule Type	RNA	
3-734-3	Length	16	
3-734-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-734-5	Residues	gctgcagaca atataa	16
3-735	**Sequences**		
3-735-1	Sequence Number [ID]	735	
3-735-2	Molecule Type	RNA	
3-735-3	Length	16	
3-735-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-735-5	Residues	ctgcagacaa tatata	16
3-736	**Sequences**		
3-736-1	Sequence Number [ID]	736	
3-736-2	Molecule Type	RNA	
3-736-3	Length	16	
3-736-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-736-5	Residues	tgcagacaat atataa	16
3-737	**Sequences**		
3-737-1	Sequence Number [ID]	737	
3-737-2	Molecule Type	RNA	
3-737-3	Length	16	
3-737-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-737-5	Residues	gcagacaata tatata	16
3-738	**Sequences**		
3-738-1	Sequence Number [ID]	738	
3-738-2	Molecule Type	RNA	
3-738-3	Length	16	
3-738-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-738-5	Residues	ttatggaaga actgaa	16
3-739	**Sequences**		

3-739-1	Sequence Number [ID]	739	
3-739-2	Molecule Type	RNA	
3-739-3	Length	16	
3-739-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-739-5	Residues	acacagcaga aataaa	16
3-740	**Sequences**		
3-740-1	Sequence Number [ID]	740	
3-740-2	Molecule Type	RNA	
3-740-3	Length	16	
3-740-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-740-5	Residues	acatcacagt ccttga	16
3-741	**Sequences**		
3-741-1	Sequence Number [ID]	741	
3-741-2	Molecule Type	RNA	
3-741-3	Length	16	
3-741-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-741-5	Residues	agtccttggt tatcta	16
3-742	**Sequences**		
3-742-1	Sequence Number [ID]	742	
3-742-2	Molecule Type	RNA	
3-742-3	Length	16	
3-742-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-742-5	Residues	tcttggatga actaga	16
3-743	**Sequences**		
3-743-1	Sequence Number [ID]	743	
3-743-2	Molecule Type	RNA	
3-743-3	Length	16	
3-743-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-743-5	Residues	tggatgaact aggaaa	16
3-744	**Sequences**		
3-744-1	Sequence Number [ID]	744	
3-744-2	Molecule Type	RNA	
3-744-3	Length	16	
3-744-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-744-5	Residues	ttgcctatgc tacaca	16
3-745	**Sequences**		
3-745-1	Sequence Number [ID]	745	
3-745-2	Molecule Type	RNA	
3-745-3	Length	16	
3-745-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-745-5	Residues	tttcatcaga gatgta	16
3-746	**Sequences**		
3-746-1	Sequence Number [ID]	746	
3-746-2	Molecule Type	RNA	

3-746-3	Length	16	
3-746-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-746-5	Residues	tcatcagaga tgtgaa	16
3-747	**Sequences**		
3-747-1	Sequence Number [ID]	747	
3-747-2	Molecule Type	RNA	
3-747-3	Length	16	
3-747-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-747-5	Residues	aaatccttaa ccctga	16
3-748	**Sequences**		
3-748-1	Sequence Number [ID]	748	
3-748-2	Molecule Type	RNA	
3-748-3	Length	16	
3-748-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-748-5	Residues	tttgtcaccc attata	16
3-749	**Sequences**		
3-749-1	Sequence Number [ID]	749	
3-749-2	Molecule Type	RNA	
3-749-3	Length	16	
3-749-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-749-5	Residues	ccattatccg ccagta	16
3-750	**Sequences**		
3-750-1	Sequence Number [ID]	750	
3-750-2	Molecule Type	RNA	
3-750-3	Length	16	
3-750-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-750-5	Residues	ccagtttgtg aactaa	16
3-751	**Sequences**		
3-751-1	Sequence Number [ID]	751	
3-751-2	Molecule Type	RNA	
3-751-3	Length	16	
3-751-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-751-5	Residues	tttgtgaact agaaaa	16
3-752	**Sequences**		
3-752-1	Sequence Number [ID]	752	
3-752-2	Molecule Type	RNA	
3-752-3	Length	16	
3-752-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-752-5	Residues	gtcagtgagg atgaaa	16
3-753	**Sequences**		
3-753-1	Sequence Number [ID]	753	
3-753-2	Molecule Type	RNA	
3-753-3	Length	16	

3-753-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-753-5	Residues	gtcaccttcc tttaca	16
3-754	**Sequences**		
3-754-1	Sequence Number [ID]	754	
3-754-2	Molecule Type	RNA	
3-754-3	Length	16	
3-754-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-754-5	Residues	tcaccttcct ttacca	16
3-755	**Sequences**		
3-755-1	Sequence Number [ID]	755	
3-755-2	Molecule Type	RNA	
3-755-3	Length	16	
3-755-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-755-5	Residues	cttcctttac caaata	16
3-756	**Sequences**		
3-756-1	Sequence Number [ID]	756	
3-756-2	Molecule Type	RNA	
3-756-3	Length	16	
3-756-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-756-5	Residues	ttcctttacc aaataa	16
3-757	**Sequences**		
3-757-1	Sequence Number [ID]	757	
3-757-2	Molecule Type	RNA	
3-757-3	Length	16	
3-757-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-757-5	Residues	tcctttacca aataaa	16
3-758	**Sequences**		
3-758-1	Sequence Number [ID]	758	
3-758-2	Molecule Type	RNA	
3-758-3	Length	16	
3-758-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-758-5	Residues	cctttaccaa ataaca	16
3-759	**Sequences**		
3-759-1	Sequence Number [ID]	759	
3-759-2	Molecule Type	RNA	
3-759-3	Length	16	
3-759-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-759-5	Residues	aataactaga ggaata	16
3-760	**Sequences**		
3-760-1	Sequence Number [ID]	760	
3-760-2	Molecule Type	RNA	
3-760-3	Length	16	
3-760-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-760-5	Residues	gaattgcagc aaggaa	16
3-761	**Sequences**		
3-761-1	Sequence Number [ID]	761	
3-761-2	Molecule Type	RNA	
3-761-3	Length	16	
3-761-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-761-5	Residues	gcagcaagga gttata	16
3-762	**Sequences**		
3-762-1	Sequence Number [ID]	762	
3-762-2	Molecule Type	RNA	
3-762-3	Length	16	
3-762-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-762-5	Residues	gcaaggagtt atggaa	16
3-763	**Sequences**		
3-763-1	Sequence Number [ID]	763	
3-763-2	Molecule Type	RNA	
3-763-3	Length	16	
3-763-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-763-5	Residues	caaggagtta tggata	16
3-764	**Sequences**		
3-764-1	Sequence Number [ID]	764	
3-764-2	Molecule Type	RNA	
3-764-3	Length	16	
3-764-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-764-5	Residues	ggagttatgg attaaa	16
3-765	**Sequences**		
3-765-1	Sequence Number [ID]	765	
3-765-2	Molecule Type	RNA	
3-765-3	Length	16	
3-765-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-765-5	Residues	tggctaaact agcaga	16
3-766	**Sequences**		
3-766-1	Sequence Number [ID]	766	
3-766-2	Molecule Type	RNA	
3-766-3	Length	16	
3-766-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-766-5	Residues	aagcagctca caagta	16
3-767	**Sequences**		
3-767-1	Sequence Number [ID]	767	
3-767-2	Molecule Type	RNA	
3-767-3	Length	16	
3-767-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-767-5	Residues	actcaagtat tttgca	16
3-768	**Sequences**		
3-768-1	Sequence Number [ID]	768	
3-768-2	Molecule Type	RNA	
3-768-3	Length	16	
3-768-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-768-5	Residues	ctcaagtatt ttgcaa	16
3-769	**Sequences**		
3-769-1	Sequence Number [ID]	769	
3-769-2	Molecule Type	RNA	
3-769-3	Length	16	
3-769-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-769-5	Residues	tcaagtattt tgcaaa	16
3-770	**Sequences**		
3-770-1	Sequence Number [ID]	770	
3-770-2	Molecule Type	RNA	
3-770-3	Length	16	
3-770-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-770-5	Residues	caagtatttt gcaaaa	16
3-771	**Sequences**		
3-771-1	Sequence Number [ID]	771	
3-771-2	Molecule Type	RNA	
3-771-3	Length	16	
3-771-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-771-5	Residues	aagtattttg caaaga	16
3-772	**Sequences**		
3-772-1	Sequence Number [ID]	772	
3-772-2	Molecule Type	RNA	
3-772-3	Length	16	
3-772-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-772-5	Residues	aagttatgga cgatga	16
3-773	**Sequences**		
3-773-1	Sequence Number [ID]	773	
3-773-2	Molecule Type	RNA	
3-773-3	Length	16	
3-773-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-773-5	Residues	caacatggaa gaaaca	16
3-774	**Sequences**		
3-774-1	Sequence Number [ID]	774	
3-774-2	Molecule Type	RNA	
3-774-3	Length	16	
3-774-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-774-5	Residues	aacatggaag aaacaa	16

3-775	**Sequences**		
3-775-1	Sequence Number [ID]	775	
3-775-2	Molecule Type	RNA	
3-775-3	Length	16	
3-775-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-775-5	Residues	acatggaaga aacaca	16
3-776	**Sequences**		
3-776-1	Sequence Number [ID]	776	
3-776-2	Molecule Type	RNA	
3-776-3	Length	16	
3-776-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-776-5	Residues	catggaagaa acacaa	16
3-777	**Sequences**		
3-777-1	Sequence Number [ID]	777	
3-777-2	Molecule Type	RNA	
3-777-3	Length	16	
3-777-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-777-5	Residues	atggaagaaa cacaga	16
3-778	**Sequences**		
3-778-1	Sequence Number [ID]	778	
3-778-2	Molecule Type	RNA	
3-778-3	Length	16	
3-778-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-778-5	Residues	gaaacacaga cttcta	16
3-779	**Sequences**		
3-779-1	Sequence Number [ID]	779	
3-779-2	Molecule Type	RNA	
3-779-3	Length	16	
3-779-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-779-5	Residues	cagacttctc ttctta	16
3-780	**Sequences**		
3-780-1	Sequence Number [ID]	780	
3-780-2	Molecule Type	RNA	
3-780-3	Length	16	
3-780-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-780-5	Residues	acatttgtga acaaaa	16
3-781	**Sequences**		
3-781-1	Sequence Number [ID]	781	
3-781-2	Molecule Type	RNA	
3-781-3	Length	16	
3-781-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-781-5	Residues	caaaataact ctccaa	16
3-782	**Sequences**		

3-782-1	Sequence Number [ID]	782	
3-782-2	Molecule Type	RNA	
3-782-3	Length	16	
3-782-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-782-5	Residues	aaaataactc tccaga	16
3-783	**Sequences**		
3-783-1	Sequence Number [ID]	783	
3-783-2	Molecule Type	RNA	
3-783-3	Length	16	
3-783-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-783-5	Residues	gtaacagcct atctta	16
3-784	**Sequences**		
3-784-1	Sequence Number [ID]	784	
3-784-2	Molecule Type	RNA	
3-784-3	Length	16	
3-784-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-784-5	Residues	gtgacatgtg agcata	16
3-785	**Sequences**		
3-785-1	Sequence Number [ID]	785	
3-785-2	Molecule Type	RNA	
3-785-3	Length	16	
3-785-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-785-5	Residues	acatgtgagc ataaaa	16
3-786	**Sequences**		
3-786-1	Sequence Number [ID]	786	
3-786-2	Molecule Type	RNA	
3-786-3	Length	16	
3-786-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-786-5	Residues	gcataaaatt atgaca	16
3-787	**Sequences**		
3-787-1	Sequence Number [ID]	787	
3-787-2	Molecule Type	RNA	
3-787-3	Length	16	
3-787-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-787-5	Residues	accatggtat attcca	16
3-788	**Sequences**		
3-788-1	Sequence Number [ID]	788	
3-788-2	Molecule Type	RNA	
3-788-3	Length	16	
3-788-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-788-5	Residues	ccatggtata ttccta	16
3-789	**Sequences**		
3-789-1	Sequence Number [ID]	789	
3-789-2	Molecule Type	RNA	

3-789-3	Length	16	
3-789-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-789-5	Residues	tcctattgga aacaga	16
3-790	**Sequences**		
3-790-1	Sequence Number [ID]	790	
3-790-2	Molecule Type	RNA	
3-790-3	Length	16	
3-790-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-790-5	Residues	tattggaaac agagaa	16
3-791	**Sequences**		
3-791-1	Sequence Number [ID]	791	
3-791-2	Molecule Type	RNA	
3-791-3	Length	16	
3-791-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-791-5	Residues	gaaacagaga ggttta	16
3-792	**Sequences**		
3-792-1	Sequence Number [ID]	792	
3-792-2	Molecule Type	RNA	
3-792-3	Length	16	
3-792-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-792-5	Residues	cttcctaact tttcta	16
3-793	**Sequences**		
3-793-1	Sequence Number [ID]	793	
3-793-2	Molecule Type	RNA	
3-793-3	Length	16	
3-793-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-793-5	Residues	ctaacttttc tacgta	16
3-794	**Sequences**		
3-794-1	Sequence Number [ID]	794	
3-794-2	Molecule Type	RNA	
3-794-3	Length	16	
3-794-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-794-5	Residues	taacttttct acgtaa	16
3-795	**Sequences**		
3-795-1	Sequence Number [ID]	795	
3-795-2	Molecule Type	RNA	
3-795-3	Length	16	
3-795-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-795-5	Residues	acgtataaac actcta	16
3-796	**Sequences**		
3-796-1	Sequence Number [ID]	796	
3-796-2	Molecule Type	RNA	
3-796-3	Length	16	

3-796-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-796-5	Residues	cgtataaaca ctctta	16
3-797	**Sequences**		
3-797-1	Sequence Number [ID]	797	
3-797-2	Molecule Type	RNA	
3-797-3	Length	16	
3-797-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-797-5	Residues	tataaacact cttgaa	16
3-798	**Sequences**		
3-798-1	Sequence Number [ID]	798	
3-798-2	Molecule Type	RNA	
3-798-3	Length	16	
3-798-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-798-5	Residues	cttgaataga cttcca	16
3-799	**Sequences**		
3-799-1	Sequence Number [ID]	799	
3-799-2	Molecule Type	RNA	
3-799-3	Length	16	
3-799-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-799-5	Residues	atagacttcc acttta	16
3-800	**Sequences**		
3-800-1	Sequence Number [ID]	800	
3-800-2	Molecule Type	RNA	
3-800-3	Length	16	
3-800-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-800-5	Residues	tagacttcca ctttga	16
3-801	**Sequences**		
3-801-1	Sequence Number [ID]	801	
3-801-2	Molecule Type	RNA	
3-801-3	Length	16	
3-801-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-801-5	Residues	acttccactt tgtaaa	16
3-802	**Sequences**		
3-802-1	Sequence Number [ID]	802	
3-802-2	Molecule Type	RNA	
3-802-3	Length	16	
3-802-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-802-5	Residues	tccactttgt aattaa	16
3-803	**Sequences**		
3-803-1	Sequence Number [ID]	803	
3-803-2	Molecule Type	RNA	
3-803-3	Length	16	
3-803-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-803-5	Residues	ccactttgta attaga	16
3-804	**Sequences**		
3-804-1	Sequence Number [ID]	804	
3-804-2	Molecule Type	RNA	
3-804-3	Length	16	
3-804-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-804-5	Residues	ccagtaaagc cttaaa	16
3-805	**Sequences**		
3-805-1	Sequence Number [ID]	805	
3-805-2	Molecule Type	RNA	
3-805-3	Length	16	
3-805-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-805-5	Residues	taagtggcag aatata	16
3-806	**Sequences**		
3-806-1	Sequence Number [ID]	806	
3-806-2	Molecule Type	RNA	
3-806-3	Length	16	
3-806-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-806-5	Residues	gcagaatata attcca	16
3-807	**Sequences**		
3-807-1	Sequence Number [ID]	807	
3-807-2	Molecule Type	RNA	
3-807-3	Length	16	
3-807-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-807-5	Residues	gcaggaatct atccaa	16
3-808	**Sequences**		
3-808-1	Sequence Number [ID]	808	
3-808-2	Molecule Type	RNA	
3-808-3	Length	16	
3-808-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-808-5	Residues	atctatccat tgaaca	16
3-809	**Sequences**		
3-809-1	Sequence Number [ID]	809	
3-809-2	Molecule Type	RNA	
3-809-3	Length	16	
3-809-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-809-5	Residues	accagtttat ccacca	16
3-810	**Sequences**		
3-810-1	Sequence Number [ID]	810	
3-810-2	Molecule Type	RNA	
3-810-3	Length	16	
3-810-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-810-5	Residues	ttatccacca agaaca	16
3-811	**Sequences**		
3-811-1	Sequence Number [ID]	811	
3-811-2	Molecule Type	RNA	
3-811-3	Length	16	
3-811-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-811-5	Residues	ccaagaacat aagaaa	16
3-812	**Sequences**		
3-812-1	Sequence Number [ID]	812	
3-812-2	Molecule Type	RNA	
3-812-3	Length	16	
3-812-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-812-5	Residues	cacagaagga ataaga	16
3-813	**Sequences**		
3-813-1	Sequence Number [ID]	813	
3-813-2	Molecule Type	RNA	
3-813-3	Length	16	
3-813-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-813-5	Residues	gaaggaataa ggtcaa	16
3-814	**Sequences**		
3-814-1	Sequence Number [ID]	814	
3-814-2	Molecule Type	RNA	
3-814-3	Length	16	
3-814-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-814-5	Residues	aaggaataag gtcata	16
3-815	**Sequences**		
3-815-1	Sequence Number [ID]	815	
3-815-2	Molecule Type	RNA	
3-815-3	Length	16	
3-815-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-815-5	Residues	ggattaagca gtttaa	16
3-816	**Sequences**		
3-816-1	Sequence Number [ID]	816	
3-816-2	Molecule Type	RNA	
3-816-3	Length	16	
3-816-4	Features Location/	**source 1..16**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-816-5	Residues	agtttaaaga ttgtta	16
3-817	**Sequences**		
3-817-1	Sequence Number [ID]	817	
3-817-2	Molecule Type	RNA	
3-817-3	Length	21	
3-817-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-817-5	Residues	tactggaaga atcggctcaa a	21

3-818	**Sequences**		
3-818-1	Sequence Number [ID]	818	
3-818-2	Molecule Type	RNA	
3-818-3	Length	21	
3-818-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-818-5	Residues	tggatttcag gcttcccgta g	21
3-819	**Sequences**		
3-819-1	Sequence Number [ID]	819	
3-819-2	Molecule Type	RNA	
3-819-3	Length	21	
3-819-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-819-5	Residues	tggaggtgga tttcaggctt c	21
3-820	**Sequences**		
3-820-1	Sequence Number [ID]	820	
3-820-2	Molecule Type	RNA	
3-820-3	Length	21	
3-820-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-820-5	Residues	tgaggaggag gtggatttca g	21
3-821	**Sequences**		
3-821-1	Sequence Number [ID]	821	
3-821-2	Molecule Type	RNA	
3-821-3	Length	21	
3-821-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-821-5	Residues	tctttcttct gtcaatttct g	21
3-822	**Sequences**		
3-822-1	Sequence Number [ID]	822	
3-822-2	Molecule Type	RNA	
3-822-3	Length	21	
3-822-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-822-5	Residues	ttctttcttc tgtcaatttc t	21
3-823	**Sequences**		
3-823-1	Sequence Number [ID]	823	
3-823-2	Molecule Type	RNA	
3-823-3	Length	21	
3-823-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-823-5	Residues	tttctttctt ctgtcaattt c	21
3-824	**Sequences**		
3-824-1	Sequence Number [ID]	824	
3-824-2	Molecule Type	RNA	
3-824-3	Length	21	
3-824-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-824-5	Residues	tcttctttct tctgtcaatt t	21
3-825	**Sequences**		

3-825-1	Sequence Number [ID]	825	
3-825-2	Molecule Type	RNA	
3-825-3	Length	21	
3-825-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-825-5	Residues	`ttcttctttc ttctgtcaat t`	21
3-826	**Sequences**		
3-826-1	Sequence Number [ID]	826	
3-826-2	Molecule Type	RNA	
3-826-3	Length	21	
3-826-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-826-5	Residues	`tgtctcttct ttcttctgtc a`	21
3-827	**Sequences**		
3-827-1	Sequence Number [ID]	827	
3-827-2	Molecule Type	RNA	
3-827-3	Length	21	
3-827-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-827-5	Residues	`taggcccatc attttccaat g`	21
3-828	**Sequences**		
3-828-1	Sequence Number [ID]	828	
3-828-2	Molecule Type	RNA	
3-828-3	Length	21	
3-828-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-828-5	Residues	`tcaggcccat cattttccaa t`	21
3-829	**Sequences**		
3-829-1	Sequence Number [ID]	829	
3-829-2	Molecule Type	RNA	
3-829-3	Length	21	
3-829-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-829-5	Residues	`tacaggccca tcattttcca a`	21
3-830	**Sequences**		
3-830-1	Sequence Number [ID]	830	
3-830-2	Molecule Type	RNA	
3-830-3	Length	21	
3-830-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-830-5	Residues	`taacaggccc atcattttcc a`	21
3-831	**Sequences**		
3-831-1	Sequence Number [ID]	831	
3-831-2	Molecule Type	RNA	
3-831-3	Length	21	
3-831-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-831-5	Residues	`ttaacaggcc catcattttc c`	21
3-832	**Sequences**		
3-832-1	Sequence Number [ID]	832	
3-832-2	Molecule Type	RNA	

3-832-3	Length	21	
3-832-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-832-5	Residues	`ttctttggct cagagttgcc a`	21
3-833	**Sequences**		
3-833-1	Sequence Number [ID]	833	
3-833-2	Molecule Type	RNA	
3-833-3	Length	21	
3-833-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-833-5	Residues	`tagacatttc tttggctcag a`	21
3-834	**Sequences**		
3-834-1	Sequence Number [ID]	834	
3-834-2	Molecule Type	RNA	
3-834-3	Length	21	
3-834-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-834-5	Residues	`tcagacattt ctttggctca g`	21
3-835	**Sequences**		
3-835-1	Sequence Number [ID]	835	
3-835-2	Molecule Type	RNA	
3-835-3	Length	21	
3-835-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-835-5	Residues	`ttcagacatt tctttggctc a`	21
3-836	**Sequences**		
3-836-1	Sequence Number [ID]	836	
3-836-2	Molecule Type	RNA	
3-836-3	Length	21	
3-836-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-836-5	Residues	`tctcagacat ttctttggct c`	21
3-837	**Sequences**		
3-837-1	Sequence Number [ID]	837	
3-837-2	Molecule Type	RNA	
3-837-3	Length	21	
3-837-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-837-5	Residues	`tcctcagaca tttctttggc t`	21
3-838	**Sequences**		
3-838-1	Sequence Number [ID]	838	
3-838-2	Molecule Type	RNA	
3-838-3	Length	21	
3-838-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-838-5	Residues	`ttcctcagac atttctttgg c`	21
3-839	**Sequences**		
3-839-1	Sequence Number [ID]	839	
3-839-2	Molecule Type	RNA	
3-839-3	Length	21	

3-839-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-839-5	Residues	tgtcctcaga catttctttg g	21
3-840	**Sequences**		
3-840-1	Sequence Number [ID]	840	
3-840-2	Molecule Type	RNA	
3-840-3	Length	21	
3-840-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-840-5	Residues	tgaggaaggg cagaatcgca g	21
3-841	**Sequences**		
3-841-1	Sequence Number [ID]	841	
3-841-2	Molecule Type	RNA	
3-841-3	Length	21	
3-841-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-841-5	Residues	tactgcaaat ctctcctgca g	21
3-842	**Sequences**		
3-842-1	Sequence Number [ID]	842	
3-842-2	Molecule Type	RNA	
3-842-3	Length	21	
3-842-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-842-5	Residues	taactgcaaa tctctcctgc a	21
3-843	**Sequences**		
3-843-1	Sequence Number [ID]	843	
3-843-2	Molecule Type	RNA	
3-843-3	Length	21	
3-843-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-843-5	Residues	tgaactgcaa atctctcctg c	21
3-844	**Sequences**		
3-844-1	Sequence Number [ID]	844	
3-844-2	Molecule Type	RNA	
3-844-3	Length	21	
3-844-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-844-5	Residues	tagaactgca aatctctcct g	21
3-845	**Sequences**		
3-845-1	Sequence Number [ID]	845	
3-845-2	Molecule Type	RNA	
3-845-3	Length	21	
3-845-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-845-5	Residues	tcagaactgc aaatctctcc t	21
3-846	**Sequences**		
3-846-1	Sequence Number [ID]	846	
3-846-2	Molecule Type	RNA	
3-846-3	Length	21	
3-846-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-846-5	Residues	tagtacattt tggcagaact g	21
3-847	**Sequences**		
3-847-1	Sequence Number [ID]	847	
3-847-2	Molecule Type	RNA	
3-847-3	Length	21	
3-847-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-847-5	Residues	tcagtacatt ttggcagaac t	21
3-848	**Sequences**		
3-848-1	Sequence Number [ID]	848	
3-848-2	Molecule Type	RNA	
3-848-3	Length	21	
3-848-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-848-5	Residues	ttcagtacat tttggcagaa c	21
3-849	**Sequences**		
3-849-1	Sequence Number [ID]	849	
3-849-2	Molecule Type	RNA	
3-849-3	Length	21	
3-849-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-849-5	Residues	tatcagtaca ttttggcaga a	21
3-850	**Sequences**		
3-850-1	Sequence Number [ID]	850	
3-850-2	Molecule Type	RNA	
3-850-3	Length	21	
3-850-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-850-5	Residues	taatcagtac attttggcag a	21
3-851	**Sequences**		
3-851-1	Sequence Number [ID]	851	
3-851-2	Molecule Type	RNA	
3-851-3	Length	21	
3-851-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-851-5	Residues	taaatcagta cattttggca g	21
3-852	**Sequences**		
3-852-1	Sequence Number [ID]	852	
3-852-2	Molecule Type	RNA	
3-852-3	Length	21	
3-852-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-852-5	Residues	taaaatcagt acattttggc a	21
3-853	**Sequences**		
3-853-1	Sequence Number [ID]	853	
3-853-2	Molecule Type	RNA	
3-853-3	Length	21	
3-853-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-853-5	Residues	ttctttgcgt gtagaagact g	21
3-854	**Sequences**		
3-854-1	Sequence Number [ID]	854	
3-854-2	Molecule Type	RNA	
3-854-3	Length	21	
3-854-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-854-5	Residues	tttctttgcg tgtagaagac t	21
3-855	**Sequences**		
3-855-1	Sequence Number [ID]	855	
3-855-2	Molecule Type	RNA	
3-855-3	Length	21	
3-855-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-855-5	Residues	tactgcattc tttgcgtgta g	21
3-856	**Sequences**		
3-856-1	Sequence Number [ID]	856	
3-856-2	Molecule Type	RNA	
3-856-3	Length	21	
3-856-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-856-5	Residues	taactgcatt ctttgcgtgt a	21
3-857	**Sequences**		
3-857-1	Sequence Number [ID]	857	
3-857-2	Molecule Type	RNA	
3-857-3	Length	21	
3-857-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-857-5	Residues	taaactgcat tctttgcgtg t	21
3-858	**Sequences**		
3-858-1	Sequence Number [ID]	858	
3-858-2	Molecule Type	RNA	
3-858-3	Length	21	
3-858-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-858-5	Residues	tgaaactgca ttctttgcgt g	21
3-859	**Sequences**		
3-859-1	Sequence Number [ID]	859	
3-859-2	Molecule Type	RNA	
3-859-3	Length	21	
3-859-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-859-5	Residues	tagaaactgc attctttgcg t	21
3-860	**Sequences**		
3-860-1	Sequence Number [ID]	860	
3-860-2	Molecule Type	RNA	
3-860-3	Length	21	
3-860-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-860-5	Residues	taagaaactg cattctttgc g	21

3-861	**Sequences**		
3-861-1	Sequence Number [ID]	861	
3-861-2	Molecule Type	RNA	
3-861-3	Length	21	
3-861-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-861-5	Residues	tgaagaaact gcattctttg c	21
3-862	**Sequences**		
3-862-1	Sequence Number [ID]	862	
3-862-2	Molecule Type	RNA	
3-862-3	Length	21	
3-862-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-862-5	Residues	tatttgacgt ttcgaatctt c	21
3-863	**Sequences**		
3-863-1	Sequence Number [ID]	863	
3-863-2	Molecule Type	RNA	
3-863-3	Length	21	
3-863-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-863-5	Residues	ttgattaatt tgacgtttcg a	21
3-864	**Sequences**		
3-864-1	Sequence Number [ID]	864	
3-864-2	Molecule Type	RNA	
3-864-3	Length	21	
3-864-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-864-5	Residues	tcaaactgac tgagatcaaa a	21
3-865	**Sequences**		
3-865-1	Sequence Number [ID]	865	
3-865-2	Molecule Type	RNA	
3-865-3	Length	21	
3-865-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-865-5	Residues	tgatgatcca aactgactga g	21
3-866	**Sequences**		
3-866-1	Sequence Number [ID]	866	
3-866-2	Molecule Type	RNA	
3-866-3	Length	21	
3-866-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-866-5	Residues	tttgatgatc caaactgact g	21
3-867	**Sequences**		
3-867-1	Sequence Number [ID]	867	
3-867-2	Molecule Type	RNA	
3-867-3	Length	21	
3-867-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-867-5	Residues	tgtatttgat gatccaaact g	21
3-868	**Sequences**		

3-868-1	Sequence Number [ID]	868	
3-868-2	Molecule Type	RNA	
3-868-3	Length	21	
3-868-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-868-5	Residues	`tacttgtatt tgatgatcca a`	21
3-869	**Sequences**		
3-869-1	Sequence Number [ID]	869	
3-869-2	Molecule Type	RNA	
3-869-3	Length	21	
3-869-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-869-5	Residues	`tgaagcagtt ttctgtaaat t`	21
3-870	**Sequences**		
3-870-1	Sequence Number [ID]	870	
3-870-2	Molecule Type	RNA	
3-870-3	Length	21	
3-870-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-870-5	Residues	`tatttggaag cagttttctg t`	21
3-871	**Sequences**		
3-871-1	Sequence Number [ID]	871	
3-871-2	Molecule Type	RNA	
3-871-3	Length	21	
3-871-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-871-5	Residues	`tgatttggaa gcagttttct g`	21
3-872	**Sequences**		
3-872-1	Sequence Number [ID]	872	
3-872-2	Molecule Type	RNA	
3-872-3	Length	21	
3-872-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-872-5	Residues	`ttgatttgga agcagttttc t`	21
3-873	**Sequences**		
3-873-1	Sequence Number [ID]	873	
3-873-2	Molecule Type	RNA	
3-873-3	Length	21	
3-873-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-873-5	Residues	`tctgatttgg aagcagtttt c`	21
3-874	**Sequences**		
3-874-1	Sequence Number [ID]	874	
3-874-2	Molecule Type	RNA	
3-874-3	Length	21	
3-874-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-874-5	Residues	`tgctgatttg gaagcagttt t`	21
3-875	**Sequences**		
3-875-1	Sequence Number [ID]	875	
3-875-2	Molecule Type	RNA	

3-875-3	Length	21	
3-875-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-875-5	Residues	`ttttgttagc tgatttggaa g`	21
3-876	**Sequences**		
3-876-1	Sequence Number [ID]	876	
3-876-2	Molecule Type	RNA	
3-876-3	Length	21	
3-876-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-876-5	Residues	`tgtttgttag ctgatttgga a`	21
3-877	**Sequences**		
3-877-1	Sequence Number [ID]	877	
3-877-2	Molecule Type	RNA	
3-877-3	Length	21	
3-877-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-877-5	Residues	`tcgtttgtta gctgatttgg a`	21
3-878	**Sequences**		
3-878-1	Sequence Number [ID]	878	
3-878-2	Molecule Type	RNA	
3-878-3	Length	21	
3-878-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-878-5	Residues	`tccgtttgtt agctgatttg g`	21
3-879	**Sequences**		
3-879-1	Sequence Number [ID]	879	
3-879-2	Molecule Type	RNA	
3-879-3	Length	21	
3-879-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-879-5	Residues	`taccgtttgt tagctgattt g`	21
3-880	**Sequences**		
3-880-1	Sequence Number [ID]	880	
3-880-2	Molecule Type	RNA	
3-880-3	Length	21	
3-880-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-880-5	Residues	`tgaccgtttg ttagctgatt t`	21
3-881	**Sequences**		
3-881-1	Sequence Number [ID]	881	
3-881-2	Molecule Type	RNA	
3-881-3	Length	21	
3-881-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-881-5	Residues	`tggaccgttt gttagctgat t`	21
3-882	**Sequences**		
3-882-1	Sequence Number [ID]	882	
3-882-2	Molecule Type	RNA	
3-882-3	Length	21	

3-882-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-882-5	Residues	tgcttttgga ccgtttgtta g	21
3-883	**Sequences**		
3-883-1	Sequence Number [ID]	883	
3-883-2	Molecule Type	RNA	
3-883-3	Length	21	
3-883-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-883-5	Residues	tatgcttttg gaccgtttgt t	21
3-884	**Sequences**		
3-884-1	Sequence Number [ID]	884	
3-884-2	Molecule Type	RNA	
3-884-3	Length	21	
3-884-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-884-5	Residues	tgtatagatg cttttggacc g	21
3-885	**Sequences**		
3-885-1	Sequence Number [ID]	885	
3-885-2	Molecule Type	RNA	
3-885-3	Length	21	
3-885-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-885-5	Residues	tcgtatagat gcttttggac c	21
3-886	**Sequences**		
3-886-1	Sequence Number [ID]	886	
3-886-2	Molecule Type	RNA	
3-886-3	Length	21	
3-886-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-886-5	Residues	tgcgtataga tgcttttgga c	21
3-887	**Sequences**		
3-887-1	Sequence Number [ID]	887	
3-887-2	Molecule Type	RNA	
3-887-3	Length	21	
3-887-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-887-5	Residues	tggcgtatag atgcttttgg a	21
3-888	**Sequences**		
3-888-1	Sequence Number [ID]	888	
3-888-2	Molecule Type	RNA	
3-888-3	Length	21	
3-888-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-888-5	Residues	taaactgcat ctttgtgctg c	21
3-889	**Sequences**		
3-889-1	Sequence Number [ID]	889	
3-889-2	Molecule Type	RNA	
3-889-3	Length	21	
3-889-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-889-5	Residues	taaaactgca tctttgtgct g	21
3-890	**Sequences**		
3-890-1	Sequence Number [ID]	890	
3-890-2	Molecule Type	RNA	
3-890-3	Length	21	
3-890-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-890-5	Residues	tatatccaca ttccacacac a	21
3-891	**Sequences**		
3-891-1	Sequence Number [ID]	891	
3-891-2	Molecule Type	RNA	
3-891-3	Length	21	
3-891-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-891-5	Residues	ttatatccac attccacaca c	21
3-892	**Sequences**		
3-892-1	Sequence Number [ID]	892	
3-892-2	Molecule Type	RNA	
3-892-3	Length	21	
3-892-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-892-5	Residues	tttatatcca cattccacac a	21
3-893	**Sequences**		
3-893-1	Sequence Number [ID]	893	
3-893-2	Molecule Type	RNA	
3-893-3	Length	21	
3-893-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-893-5	Residues	tcttatatcc acattccaca c	21
3-894	**Sequences**		
3-894-1	Sequence Number [ID]	894	
3-894-2	Molecule Type	RNA	
3-894-3	Length	21	
3-894-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-894-5	Residues	tacttatatc cacattccac a	21
3-895	**Sequences**		
3-895-1	Sequence Number [ID]	895	
3-895-2	Molecule Type	RNA	
3-895-3	Length	21	
3-895-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-895-5	Residues	ttacttatat ccacattcca c	21
3-896	**Sequences**		
3-896-1	Sequence Number [ID]	896	
3-896-2	Molecule Type	RNA	
3-896-3	Length	21	
3-896-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-896-5	Residues	ttctatactt atatccacat t	21
3-897	**Sequences**		
3-897-1	Sequence Number [ID]	897	
3-897-2	Molecule Type	RNA	
3-897-3	Length	21	
3-897-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-897-5	Residues	tatctatact tatatccaca t	21
3-898	**Sequences**		
3-898-1	Sequence Number [ID]	898	
3-898-2	Molecule Type	RNA	
3-898-3	Length	21	
3-898-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-898-5	Residues	taatctatac ttatatccac a	21
3-899	**Sequences**		
3-899-1	Sequence Number [ID]	899	
3-899-2	Molecule Type	RNA	
3-899-3	Length	21	
3-899-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-899-5	Residues	tgaatctata cttatatcca c	21
3-900	**Sequences**		
3-900-1	Sequence Number [ID]	900	
3-900-2	Molecule Type	RNA	
3-900-3	Length	21	
3-900-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-900-5	Residues	tagaatctat acttatatcc a	21
3-901	**Sequences**		
3-901-1	Sequence Number [ID]	901	
3-901-2	Molecule Type	RNA	
3-901-3	Length	21	
3-901-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-901-5	Residues	tgtgatctaa atggcaataa a	21
3-902	**Sequences**		
3-902-1	Sequence Number [ID]	902	
3-902-2	Molecule Type	RNA	
3-902-3	Length	21	
3-902-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-902-5	Residues	tgttgtgatc taaatggcaa t	21
3-903	**Sequences**		
3-903-1	Sequence Number [ID]	903	
3-903-2	Molecule Type	RNA	
3-903-3	Length	21	
3-903-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-903-5	Residues	tagttgtgat ctaaatggca a	21

3-904	**Sequences**		
3-904-1	Sequence Number [ID]	904	
3-904-2	Molecule Type	RNA	
3-904-3	Length	21	
3-904-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-904-5	Residues	taagttgtga tctaaatggc a	21
3-905	**Sequences**		
3-905-1	Sequence Number [ID]	905	
3-905-2	Molecule Type	RNA	
3-905-3	Length	21	
3-905-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-905-5	Residues	taaagttgtg atctaaatgg c	21
3-906	**Sequences**		
3-906-1	Sequence Number [ID]	906	
3-906-2	Molecule Type	RNA	
3-906-3	Length	21	
3-906-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-906-5	Residues	ttaaagttgt gatctaaatg g	21
3-907	**Sequences**		
3-907-1	Sequence Number [ID]	907	
3-907-2	Molecule Type	RNA	
3-907-3	Length	21	
3-907-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-907-5	Residues	tataaagttg tgatctaaat g	21
3-908	**Sequences**		
3-908-1	Sequence Number [ID]	908	
3-908-2	Molecule Type	RNA	
3-908-3	Length	21	
3-908-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-908-5	Residues	tcataaagtt gtgatctaaa t	21
3-909	**Sequences**		
3-909-1	Sequence Number [ID]	909	
3-909-2	Molecule Type	RNA	
3-909-3	Length	21	
3-909-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-909-5	Residues	tctgtcataa agttgtgatc t	21
3-910	**Sequences**		
3-910-1	Sequence Number [ID]	910	
3-910-2	Molecule Type	RNA	
3-910-3	Length	21	
3-910-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-910-5	Residues	tgctgtcata aagttgtgat c	21
3-911	**Sequences**		

3-911-1	Sequence Number [ID]	911	
3-911-2	Molecule Type	RNA	
3-911-3	Length	21	
3-911-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-911-5	Residues	`ttgctgtcat aaagttgtga t`	21
3-912	**Sequences**		
3-912-1	Sequence Number [ID]	912	
3-912-2	Molecule Type	RNA	
3-912-3	Length	21	
3-912-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-912-5	Residues	`tttgctgtca taaagttgtg a`	21
3-913	**Sequences**		
3-913-1	Sequence Number [ID]	913	
3-913-2	Molecule Type	RNA	
3-913-3	Length	21	
3-913-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-913-5	Residues	`tcttgctgtc ataaagttgt g`	21
3-914	**Sequences**		
3-914-1	Sequence Number [ID]	914	
3-914-2	Molecule Type	RNA	
3-914-3	Length	21	
3-914-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-914-5	Residues	`tacttgctgt cataaagttg t`	21
3-915	**Sequences**		
3-915-1	Sequence Number [ID]	915	
3-915-2	Molecule Type	RNA	
3-915-3	Length	21	
3-915-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-915-5	Residues	`ttacttgctg tcataaagtt g`	21
3-916	**Sequences**		
3-916-1	Sequence Number [ID]	916	
3-916-2	Molecule Type	RNA	
3-916-3	Length	21	
3-916-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-916-5	Residues	`tacagtctgt gagtaggtat a`	21
3-917	**Sequences**		
3-917-1	Sequence Number [ID]	917	
3-917-2	Molecule Type	RNA	
3-917-3	Length	21	
3-917-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-917-5	Residues	`tgcttcacaa ctcccacctt a`	21
3-918	**Sequences**		
3-918-1	Sequence Number [ID]	918	
3-918-2	Molecule Type	RNA	

3-918-3	Length	21	
3-918-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-918-5	Residues	ttgcttcaca actcccacct t	21
3-919	**Sequences**		
3-919-1	Sequence Number [ID]	919	
3-919-2	Molecule Type	RNA	
3-919-3	Length	21	
3-919-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-919-5	Residues	tttgcttcac aactcccacc t	21
3-920	**Sequences**		
3-920-1	Sequence Number [ID]	920	
3-920-2	Molecule Type	RNA	
3-920-3	Length	21	
3-920-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-920-5	Residues	tgtttgcttc acaactccca c	21
3-921	**Sequences**		
3-921-1	Sequence Number [ID]	921	
3-921-2	Molecule Type	RNA	
3-921-3	Length	21	
3-921-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-921-5	Residues	tagtttgctt cacaactccc a	21
3-922	**Sequences**		
3-922-1	Sequence Number [ID]	922	
3-922-2	Molecule Type	RNA	
3-922-3	Length	21	
3-922-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-922-5	Residues	tcagtttgct tcacaactcc c	21
3-923	**Sequences**		
3-923-1	Sequence Number [ID]	923	
3-923-2	Molecule Type	RNA	
3-923-3	Length	21	
3-923-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-923-5	Residues	ttcagtttgc ttcacaactc c	21
3-924	**Sequences**		
3-924-1	Sequence Number [ID]	924	
3-924-2	Molecule Type	RNA	
3-924-3	Length	21	
3-924-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-924-5	Residues	tttcagtttg cttcacaact c	21
3-925	**Sequences**		
3-925-1	Sequence Number [ID]	925	
3-925-2	Molecule Type	RNA	
3-925-3	Length	21	

3-925-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-925-5	Residues	`ttttcagttt gcttcacaac t`	21
3-926	**Sequences**		
3-926-1	Sequence Number [ID]	926	
3-926-2	Molecule Type	RNA	
3-926-3	Length	21	
3-926-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-926-5	Residues	`tgtttcagtt tgcttcacaa c`	21
3-927	**Sequences**		
3-927-1	Sequence Number [ID]	927	
3-927-2	Molecule Type	RNA	
3-927-3	Length	21	
3-927-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-927-5	Residues	`tagtttcagt ttgcttcaca a`	21
3-928	**Sequences**		
3-928-1	Sequence Number [ID]	928	
3-928-2	Molecule Type	RNA	
3-928-3	Length	21	
3-928-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-928-5	Residues	`tcagtttcag tttgcttcac a`	21
3-929	**Sequences**		
3-929-1	Sequence Number [ID]	929	
3-929-2	Molecule Type	RNA	
3-929-3	Length	21	
3-929-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-929-5	Residues	`tgcagtttca gtttgcttca c`	21
3-930	**Sequences**		
3-930-1	Sequence Number [ID]	930	
3-930-2	Molecule Type	RNA	
3-930-3	Length	21	
3-930-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-930-5	Residues	`ttgcagtttc agtttgcttc a`	21
3-931	**Sequences**		
3-931-1	Sequence Number [ID]	931	
3-931-2	Molecule Type	RNA	
3-931-3	Length	21	
3-931-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-931-5	Residues	`tctgcagttt cagtttgctt c`	21
3-932	**Sequences**		
3-932-1	Sequence Number [ID]	932	
3-932-2	Molecule Type	RNA	
3-932-3	Length	21	
3-932-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-932-5	Residues	tgctgcagtt tcagtttgct t	21
3-933	**Sequences**		
3-933-1	Sequence Number [ID]	933	
3-933-2	Molecule Type	RNA	
3-933-3	Length	21	
3-933-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-933-5	Residues	tgaacttctg ttgtctccaa t	21
3-934	**Sequences**		
3-934-1	Sequence Number [ID]	934	
3-934-2	Molecule Type	RNA	
3-934-3	Length	21	
3-934-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-934-5	Residues	tagggcagtc aatttccggg a	21
3-935	**Sequences**		
3-935-1	Sequence Number [ID]	935	
3-935-2	Molecule Type	RNA	
3-935-3	Length	21	
3-935-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-935-5	Residues	tataaagggc agtcaatttc c	21
3-936	**Sequences**		
3-936-1	Sequence Number [ID]	936	
3-936-2	Molecule Type	RNA	
3-936-3	Length	21	
3-936-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-936-5	Residues	ttttgtataa agggcagtca a	21
3-937	**Sequences**		
3-937-1	Sequence Number [ID]	937	
3-937-2	Molecule Type	RNA	
3-937-3	Length	21	
3-937-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-937-5	Residues	tttacagcat catccagctt g	21
3-938	**Sequences**		
3-938-1	Sequence Number [ID]	938	
3-938-2	Molecule Type	RNA	
3-938-3	Length	21	
3-938-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-938-5	Residues	ttcattatct catcaacatt t	21
3-939	**Sequences**		
3-939-1	Sequence Number [ID]	939	
3-939-2	Molecule Type	RNA	
3-939-3	Length	21	
3-939-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-939-5	Residues	tagtatcagt cattatctca t	21
3-940	**Sequences**		
3-940-1	Sequence Number [ID]	940	
3-940-2	Molecule Type	RNA	
3-940-3	Length	21	
3-940-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-940-5	Residues	tattttcaga gatgcacaga a	21
3-941	**Sequences**		
3-941-1	Sequence Number [ID]	941	
3-941-2	Molecule Type	RNA	
3-941-3	Length	21	
3-941-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-941-5	Residues	ttattttcag agatgcacag a	21
3-942	**Sequences**		
3-942-1	Sequence Number [ID]	942	
3-942-2	Molecule Type	RNA	
3-942-3	Length	21	
3-942-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-942-5	Residues	tttattttca gagatgcaca g	21
3-943	**Sequences**		
3-943-1	Sequence Number [ID]	943	
3-943-2	Molecule Type	RNA	
3-943-3	Length	21	
3-943-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-943-5	Residues	tcttattttc agagatgcac a	21
3-944	**Sequences**		
3-944-1	Sequence Number [ID]	944	
3-944-2	Molecule Type	RNA	
3-944-3	Length	21	
3-944-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-944-5	Residues	tccttatttt cagagatgca c	21
3-945	**Sequences**		
3-945-1	Sequence Number [ID]	945	
3-945-2	Molecule Type	RNA	
3-945-3	Length	21	
3-945-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-945-5	Residues	ttccttattt tcagagatgc a	21
3-946	**Sequences**		
3-946-1	Sequence Number [ID]	946	
3-946-2	Molecule Type	RNA	
3-946-3	Length	21	
3-946-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-946-5	Residues	tttccttatt ttcagagatg c	21

3-947	**Sequences**		
3-947-1	Sequence Number [ID]	947	
3-947-2	Molecule Type	RNA	
3-947-3	Length	21	
3-947-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-947-5	Residues	`ttttccttat tttcagagat g`	21
3-948	**Sequences**		
3-948-1	Sequence Number [ID]	948	
3-948-2	Molecule Type	RNA	
3-948-3	Length	21	
3-948-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-948-5	Residues	`tattttcctt attttcagag a`	21
3-949	**Sequences**		
3-949-1	Sequence Number [ID]	949	
3-949-2	Molecule Type	RNA	
3-949-3	Length	21	
3-949-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-949-5	Residues	`tcattttcct tattttcaga g`	21
3-950	**Sequences**		
3-950-1	Sequence Number [ID]	950	
3-950-2	Molecule Type	RNA	
3-950-3	Length	21	
3-950-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-950-5	Residues	`taggcttgac atccgggttt c`	21
3-951	**Sequences**		
3-951-1	Sequence Number [ID]	951	
3-951-2	Molecule Type	RNA	
3-951-3	Length	21	
3-951-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-951-5	Residues	`tgctgcaggc ttgacatccg g`	21
3-952	**Sequences**		
3-952-1	Sequence Number [ID]	952	
3-952-2	Molecule Type	RNA	
3-952-3	Length	21	
3-952-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-952-5	Residues	`tctactggct gcaggcttga c`	21
3-953	**Sequences**		
3-953-1	Sequence Number [ID]	953	
3-953-2	Molecule Type	RNA	
3-953-3	Length	21	
3-953-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-953-5	Residues	`tgctcggaca aggccgaagg a`	21
3-954	**Sequences**		

3-954-1	Sequence Number [ID]	954	
3-954-2	Molecule Type	RNA	
3-954-3	Length	21	
3-954-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-954-5	Residues	`tgatgagcgc ctctgtttgc t`	21
3-955	**Sequences**		
3-955-1	Sequence Number [ID]	955	
3-955-2	Molecule Type	RNA	
3-955-3	Length	21	
3-955-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-955-5	Residues	`tgatgtggct ctgtggatga g`	21
3-956	**Sequences**		
3-956-1	Sequence Number [ID]	956	
3-956-2	Molecule Type	RNA	
3-956-3	Length	21	
3-956-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-956-5	Residues	`tagcatggct gtattcaaaa t`	21
3-957	**Sequences**		
3-957-1	Sequence Number [ID]	957	
3-957-2	Molecule Type	RNA	
3-957-3	Length	21	
3-957-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-957-5	Residues	`taagcatggc tgtattcaaa a`	21
3-958	**Sequences**		
3-958-1	Sequence Number [ID]	958	
3-958-2	Molecule Type	RNA	
3-958-3	Length	21	
3-958-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-958-5	Residues	`taaagcatgg ctgtattcaa a`	21
3-959	**Sequences**		
3-959-1	Sequence Number [ID]	959	
3-959-2	Molecule Type	RNA	
3-959-3	Length	21	
3-959-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-959-5	Residues	`tgaaagcatg gctgtattca a`	21
3-960	**Sequences**		
3-960-1	Sequence Number [ID]	960	
3-960-2	Molecule Type	RNA	
3-960-3	Length	21	
3-960-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-960-5	Residues	`tggaaagcat ggctgtattc a`	21
3-961	**Sequences**		
3-961-1	Sequence Number [ID]	961	
3-961-2	Molecule Type	RNA	

3-961-3	Length	21	
3-961-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-961-5	Residues	ttggaaagca tggctgtatt c	21
3-962	**Sequences**		
3-962-1	Sequence Number [ID]	962	
3-962-2	Molecule Type	RNA	
3-962-3	Length	21	
3-962-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-962-5	Residues	tctggaaagc atggctgtat t	21
3-963	**Sequences**		
3-963-1	Sequence Number [ID]	963	
3-963-2	Molecule Type	RNA	
3-963-3	Length	21	
3-963-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-963-5	Residues	tctctgtaac tgcctggaaa g	21
3-964	**Sequences**		
3-964-1	Sequence Number [ID]	964	
3-964-2	Molecule Type	RNA	
3-964-3	Length	21	
3-964-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-964-5	Residues	tactctgtaa ctgcctggaa a	21
3-965	**Sequences**		
3-965-1	Sequence Number [ID]	965	
3-965-2	Molecule Type	RNA	
3-965-3	Length	21	
3-965-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-965-5	Residues	taactctgta actgcctgga a	21
3-966	**Sequences**		
3-966-1	Sequence Number [ID]	966	
3-966-2	Molecule Type	RNA	
3-966-3	Length	21	
3-966-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-966-5	Residues	taaactctgt aactgcctgg a	21
3-967	**Sequences**		
3-967-1	Sequence Number [ID]	967	
3-967-2	Molecule Type	RNA	
3-967-3	Length	21	
3-967-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-967-5	Residues	taaaactctg taactgcctg g	21
3-968	**Sequences**		
3-968-1	Sequence Number [ID]	968	
3-968-2	Molecule Type	RNA	
3-968-3	Length	21	

3-968-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-968-5	Residues	ttaaaactct gtaactgcct g	21
3-969	**Sequences**		
3-969-1	Sequence Number [ID]	969	
3-969-2	Molecule Type	RNA	
3-969-3	Length	21	
3-969-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-969-5	Residues	tataaaactc tgtaactgcc t	21
3-970	**Sequences**		
3-970-1	Sequence Number [ID]	970	
3-970-2	Molecule Type	RNA	
3-970-3	Length	21	
3-970-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-970-5	Residues	taactgtatc ttttgcataa a	21
3-971	**Sequences**		
3-971-1	Sequence Number [ID]	971	
3-971-2	Molecule Type	RNA	
3-971-3	Length	21	
3-971-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-971-5	Residues	tcctttgatg tcaactgtat c	21
3-972	**Sequences**		
3-972-1	Sequence Number [ID]	972	
3-972-2	Molecule Type	RNA	
3-972-3	Length	21	
3-972-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-972-5	Residues	tacctttgat gtcaactgta t	21
3-973	**Sequences**		
3-973-1	Sequence Number [ID]	973	
3-973-2	Molecule Type	RNA	
3-973-3	Length	21	
3-973-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-973-5	Residues	taacctttga tgtcaactgt a	21
3-974	**Sequences**		
3-974-1	Sequence Number [ID]	974	
3-974-2	Molecule Type	RNA	
3-974-3	Length	21	
3-974-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-974-5	Residues	tgaacctttg atgtcaactg t	21
3-975	**Sequences**		
3-975-1	Sequence Number [ID]	975	
3-975-2	Molecule Type	RNA	
3-975-3	Length	21	
3-975-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-975-5	Residues	tagaaccttt gatgtcaact g	21
3-976	**Sequences**		
3-976-1	Sequence Number [ID]	976	
3-976-2	Molecule Type	RNA	
3-976-3	Length	21	
3-976-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-976-5	Residues	tgagaacctt tgatgtcaac t	21
3-977	**Sequences**		
3-977-1	Sequence Number [ID]	977	
3-977-2	Molecule Type	RNA	
3-977-3	Length	21	
3-977-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-977-5	Residues	ttgagaacct ttgatgtcaa c	21
3-978	**Sequences**		
3-978-1	Sequence Number [ID]	978	
3-978-2	Molecule Type	RNA	
3-978-3	Length	21	
3-978-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-978-5	Residues	tttgagaacc tttgatgtca a	21
3-979	**Sequences**		
3-979-1	Sequence Number [ID]	979	
3-979-2	Molecule Type	RNA	
3-979-3	Length	21	
3-979-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-979-5	Residues	tagttaacaa tgccagaaat a	21
3-980	**Sequences**		
3-980-1	Sequence Number [ID]	980	
3-980-2	Molecule Type	RNA	
3-980-3	Length	21	
3-980-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-980-5	Residues	taagttaaca atgccagaaa t	21
3-981	**Sequences**		
3-981-1	Sequence Number [ID]	981	
3-981-2	Molecule Type	RNA	
3-981-3	Length	21	
3-981-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-981-5	Residues	ttaagttaac aatgccagaa a	21
3-982	**Sequences**		
3-982-1	Sequence Number [ID]	982	
3-982-2	Molecule Type	RNA	
3-982-3	Length	21	
3-982-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-982-5	Residues	tctaagttaa caatgccaga a	21
3-983	**Sequences**		
3-983-1	Sequence Number [ID]	983	
3-983-2	Molecule Type	RNA	
3-983-3	Length	21	
3-983-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-983-5	Residues	ttctaagtta acaatgccag a	21
3-984	**Sequences**		
3-984-1	Sequence Number [ID]	984	
3-984-2	Molecule Type	RNA	
3-984-3	Length	21	
3-984-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-984-5	Residues	tctctaagtt aacaatgcca g	21
3-985	**Sequences**		
3-985-1	Sequence Number [ID]	985	
3-985-2	Molecule Type	RNA	
3-985-3	Length	21	
3-985-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-985-5	Residues	ttctctaagt taacaatgcc a	21
3-986	**Sequences**		
3-986-1	Sequence Number [ID]	986	
3-986-2	Molecule Type	RNA	
3-986-3	Length	21	
3-986-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-986-5	Residues	ttcacaggct tctctaagtt a	21
3-987	**Sequences**		
3-987-1	Sequence Number [ID]	987	
3-987-2	Molecule Type	RNA	
3-987-3	Length	21	
3-987-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-987-5	Residues	ttggcagcca aagagcaaat c	21
3-988	**Sequences**		
3-988-1	Sequence Number [ID]	988	
3-988-2	Molecule Type	RNA	
3-988-3	Length	21	
3-988-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-988-5	Residues	ttatgatggc agccaaagag c	21
3-989	**Sequences**		
3-989-1	Sequence Number [ID]	989	
3-989-2	Molecule Type	RNA	
3-989-3	Length	21	
3-989-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-989-5	Residues	tggtatttta tgatggcagc c	21

3-990	**Sequences**		
3-990-1	Sequence Number [ID]	990	
3-990-2	Molecule Type	RNA	
3-990-3	Length	21	
3-990-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-990-5	Residues	tgaggtattt tatgatggca g	21
3-991	**Sequences**		
3-991-1	Sequence Number [ID]	991	
3-991-2	Molecule Type	RNA	
3-991-3	Length	21	
3-991-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-991-5	Residues	ttgaggtatt ttatgatggc a	21
3-992	**Sequences**		
3-992-1	Sequence Number [ID]	992	
3-992-2	Molecule Type	RNA	
3-992-3	Length	21	
3-992-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-992-5	Residues	tttgaggtat tttatgatgg c	21
3-993	**Sequences**		
3-993-1	Sequence Number [ID]	993	
3-993-2	Molecule Type	RNA	
3-993-3	Length	21	
3-993-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-993-5	Residues	ttttgaggta ttttatgatg g	21
3-994	**Sequences**		
3-994-1	Sequence Number [ID]	994	
3-994-2	Molecule Type	RNA	
3-994-3	Length	21	
3-994-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-994-5	Residues	tctttgaggt attttatgat g	21
3-995	**Sequences**		
3-995-1	Sequence Number [ID]	995	
3-995-2	Molecule Type	RNA	
3-995-3	Length	21	
3-995-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-995-5	Residues	ttctttgagg tattttatga t	21
3-996	**Sequences**		
3-996-1	Sequence Number [ID]	996	
3-996-2	Molecule Type	RNA	
3-996-3	Length	21	
3-996-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-996-5	Residues	tttctttgag gtattttatg a	21
3-997	**Sequences**		

3-997-1	Sequence Number [ID]	997	
3-997-2	Molecule Type	RNA	
3-997-3	Length	21	
3-997-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-997-5	Residues	`tttccaagtt gaattctttg a`	21
3-998	**Sequences**		
3-998-1	Sequence Number [ID]	998	
3-998-2	Molecule Type	RNA	
3-998-3	Length	21	
3-998-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-998-5	Residues	`tgagcatctt ttccaagttg a`	21
3-999	**Sequences**		
3-999-1	Sequence Number [ID]	999	
3-999-2	Molecule Type	RNA	
3-999-3	Length	21	
3-999-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-999-5	Residues	`tagctgttta aaattctcag g`	21
3-1000	**Sequences**		
3-1000-1	Sequence Number [ID]	1000	
3-1000-2	Molecule Type	RNA	
3-1000-3	Length	21	
3-1000-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1000-5	Residues	`ttagctgttt aaaattctca g`	21

3-1001	**Sequences**		
3-1001-1	Sequence Number [ID]	1001	
3-1001-2	Molecule Type	RNA	
3-1001-3	Length	21	
3-1001-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1001-5	Residues	tatagctgtt taaaattctc a	21
3-1002	**Sequences**		
3-1002-1	Sequence Number [ID]	1002	
3-1002-2	Molecule Type	RNA	
3-1002-3	Length	21	
3-1002-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1002-5	Residues	tgatagctgt ttaaaattct c	21
3-1003	**Sequences**		
3-1003-1	Sequence Number [ID]	1003	
3-1003-2	Molecule Type	RNA	
3-1003-3	Length	21	
3-1003-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1003-5	Residues	ttgatagctg tttaaaattc t	21
3-1004	**Sequences**		
3-1004-1	Sequence Number [ID]	1004	
3-1004-2	Molecule Type	RNA	
3-1004-3	Length	21	
3-1004-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1004-5	Residues	tgattcctta atgttgttcc a	21
3-1005	**Sequences**		
3-1005-1	Sequence Number [ID]	1005	
3-1005-2	Molecule Type	RNA	
3-1005-3	Length	21	
3-1005-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1005-5	Residues	tagattcctt aatgttgttc c	21
3-1006	**Sequences**		
3-1006-1	Sequence Number [ID]	1006	
3-1006-2	Molecule Type	RNA	
3-1006-3	Length	21	
3-1006-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1006-5	Residues	tcagattcct taatgttgtt c	21
3-1007	**Sequences**		
3-1007-1	Sequence Number [ID]	1007	
3-1007-2	Molecule Type	RNA	
3-1007-3	Length	21	
3-1007-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1007-5	Residues	tccagattcc ttaatgttgt t	21
3-1008	**Sequences**		

3-1008-1	Sequence Number [ID]	1008	
3-1008-2	Molecule Type	RNA	
3-1008-3	Length	21	
3-1008-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1008-5	Residues	`ttccagattc cttaatgttg t`	21
3-1009	**Sequences**		
3-1009-1	Sequence Number [ID]	1009	
3-1009-2	Molecule Type	RNA	
3-1009-3	Length	21	
3-1009-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1009-5	Residues	`ttatcagtct gattctgtag g`	21
3-1010	**Sequences**		
3-1010-1	Sequence Number [ID]	1010	
3-1010-2	Molecule Type	RNA	
3-1010-3	Length	21	
3-1010-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1010-5	Residues	`tatatcagtc tgattctgta g`	21
3-1011	**Sequences**		
3-1011-1	Sequence Number [ID]	1011	
3-1011-2	Molecule Type	RNA	
3-1011-3	Length	21	
3-1011-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1011-5	Residues	`tcatatcagt ctgattctgt a`	21
3-1012	**Sequences**		
3-1012-1	Sequence Number [ID]	1012	
3-1012-2	Molecule Type	RNA	
3-1012-3	Length	21	
3-1012-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1012-5	Residues	`ttcatatcag tctgattctg t`	21
3-1013	**Sequences**		
3-1013-1	Sequence Number [ID]	1013	
3-1013-2	Molecule Type	RNA	
3-1013-3	Length	21	
3-1013-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1013-5	Residues	`tttcatatca gtctgattct g`	21
3-1014	**Sequences**		
3-1014-1	Sequence Number [ID]	1014	
3-1014-2	Molecule Type	RNA	
3-1014-3	Length	21	
3-1014-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1014-5	Residues	`ttttcatatc agtctgattc t`	21
3-1015	**Sequences**		
3-1015-1	Sequence Number [ID]	1015	
3-1015-2	Molecule Type	RNA	

3-1015-3	Length	21	
3-1015-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1015-5	Residues	tgttttcata tcagtctgat t	21
3-1016	**Sequences**		
3-1016-1	Sequence Number [ID]	1016	
3-1016-2	Molecule Type	RNA	
3-1016-3	Length	21	
3-1016-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1016-5	Residues	tttggttttc atatcagtct g	21
3-1017	**Sequences**		
3-1017-1	Sequence Number [ID]	1017	
3-1017-2	Molecule Type	RNA	
3-1017-3	Length	21	
3-1017-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1017-5	Residues	tagtgtggtc taaaacccac a	21
3-1018	**Sequences**		
3-1018-1	Sequence Number [ID]	1018	
3-1018-2	Molecule Type	RNA	
3-1018-3	Length	21	
3-1018-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1018-5	Residues	ttagtgtggt ctaaaaccca c	21
3-1019	**Sequences**		
3-1019-1	Sequence Number [ID]	1019	
3-1019-2	Molecule Type	RNA	
3-1019-3	Length	21	
3-1019-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1019-5	Residues	tttagtgtgg tctaaaaccc a	21
3-1020	**Sequences**		
3-1020-1	Sequence Number [ID]	1020	
3-1020-2	Molecule Type	RNA	
3-1020-3	Length	21	
3-1020-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1020-5	Residues	taacttccgt ctcccaaatg a	21
3-1021	**Sequences**		
3-1021-1	Sequence Number [ID]	1021	
3-1021-2	Molecule Type	RNA	
3-1021-3	Length	21	
3-1021-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1021-5	Residues	tatttaagga gtggctgggt c	21
3-1022	**Sequences**		
3-1022-1	Sequence Number [ID]	1022	
3-1022-2	Molecule Type	RNA	
3-1022-3	Length	21	

3-1022-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1022-5	Residues	tcttccgata cagcatcaag c	21
3-1023	**Sequences**		
3-1023-1	Sequence Number [ID]	1023	
3-1023-2	Molecule Type	RNA	
3-1023-3	Length	21	
3-1023-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1023-5	Residues	tacttccgat acagcatcaa g	21
3-1024	**Sequences**		
3-1024-1	Sequence Number [ID]	1024	
3-1024-2	Molecule Type	RNA	
3-1024-3	Length	21	
3-1024-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1024-5	Residues	taacttccga tacagcatca a	21
3-1025	**Sequences**		
3-1025-1	Sequence Number [ID]	1025	
3-1025-2	Molecule Type	RNA	
3-1025-3	Length	21	
3-1025-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1025-5	Residues	tgaacttccg atacagcatc a	21
3-1026	**Sequences**		
3-1026-1	Sequence Number [ID]	1026	
3-1026-2	Molecule Type	RNA	
3-1026-3	Length	21	
3-1026-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1026-5	Residues	tagaacttcc gatacagcat c	21
3-1027	**Sequences**		
3-1027-1	Sequence Number [ID]	1027	
3-1027-2	Molecule Type	RNA	
3-1027-3	Length	21	
3-1027-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1027-5	Residues	tgagaacttc cgatacagca t	21
3-1028	**Sequences**		
3-1028-1	Sequence Number [ID]	1028	
3-1028-2	Molecule Type	RNA	
3-1028-3	Length	21	
3-1028-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1028-5	Residues	tggagaactt ccgatacagc a	21
3-1029	**Sequences**		
3-1029-1	Sequence Number [ID]	1029	
3-1029-2	Molecule Type	RNA	
3-1029-3	Length	21	
3-1029-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1029-5	Residues	`ttttctatct gaccaaacac a`	21
3-1030	**Sequences**		
3-1030-1	Sequence Number [ID]	1030	
3-1030-2	Molecule Type	RNA	
3-1030-3	Length	21	
3-1030-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1030-5	Residues	`tattttctat ctgaccaaac a`	21
3-1031	**Sequences**		
3-1031-1	Sequence Number [ID]	1031	
3-1031-2	Molecule Type	RNA	
3-1031-3	Length	21	
3-1031-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1031-5	Residues	`tgattttcta tctgaccaaa c`	21
3-1032	**Sequences**		
3-1032-1	Sequence Number [ID]	1032	
3-1032-2	Molecule Type	RNA	
3-1032-3	Length	21	
3-1032-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1032-5	Residues	`ttgattttct atctgaccaa a`	21
3-1033	**Sequences**		
3-1033-1	Sequence Number [ID]	1033	
3-1033-2	Molecule Type	RNA	
3-1033-3	Length	21	
3-1033-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1033-5	Residues	`tatgattttc tatctgacca a`	21
3-1034	**Sequences**		
3-1034-1	Sequence Number [ID]	1034	
3-1034-2	Molecule Type	RNA	
3-1034-3	Length	21	
3-1034-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1034-5	Residues	`tgatgatttt ctatctgacc a`	21
3-1035	**Sequences**		
3-1035-1	Sequence Number [ID]	1035	
3-1035-2	Molecule Type	RNA	
3-1035-3	Length	21	
3-1035-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1035-5	Residues	`ttctctatgt cgggcaattt a`	21
3-1036	**Sequences**		
3-1036-1	Sequence Number [ID]	1036	
3-1036-2	Molecule Type	RNA	
3-1036-3	Length	21	
3-1036-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-1036-5	Residues	ttgtgataaa tgctacagag t	21
3-1037	**Sequences**		
3-1037-1	Sequence Number [ID]	1037	
3-1037-2	Molecule Type	RNA	
3-1037-3	Length	21	
3-1037-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1037-5	Residues	tttgtgataa atgctacaga g	21
3-1038	**Sequences**		
3-1038-1	Sequence Number [ID]	1038	
3-1038-2	Molecule Type	RNA	
3-1038-3	Length	21	
3-1038-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1038-5	Residues	ttttgtgata aatgctacag a	21
3-1039	**Sequences**		
3-1039-1	Sequence Number [ID]	1039	
3-1039-2	Molecule Type	RNA	
3-1039-3	Length	21	
3-1039-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1039-5	Residues	tagaactctt gggtagaaca t	21
3-1040	**Sequences**		
3-1040-1	Sequence Number [ID]	1040	
3-1040-2	Molecule Type	RNA	
3-1040-3	Length	21	
3-1040-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1040-5	Residues	tgaagaactc ttgggtagaa c	21
3-1041	**Sequences**		
3-1041-1	Sequence Number [ID]	1041	
3-1041-2	Molecule Type	RNA	
3-1041-3	Length	21	
3-1041-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1041-5	Residues	tagaagaact cttgggtaga a	21
3-1042	**Sequences**		
3-1042-1	Sequence Number [ID]	1042	
3-1042-2	Molecule Type	RNA	
3-1042-3	Length	21	
3-1042-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1042-5	Residues	taagaagaac tcttgggtag a	21
3-1043	**Sequences**		
3-1043-1	Sequence Number [ID]	1043	
3-1043-2	Molecule Type	RNA	
3-1043-3	Length	21	
3-1043-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1043-5	Residues	tcaagaagaa ctcttgggta g	21

3-1044	**Sequences**		
3-1044-1	Sequence Number [ID]	1044	
3-1044-2	Molecule Type	RNA	
3-1044-3	Length	21	
3-1044-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1044-5	Residues	ttcaagaaga actcttgggt a	21
3-1045	**Sequences**		
3-1045-1	Sequence Number [ID]	1045	
3-1045-2	Molecule Type	RNA	
3-1045-3	Length	21	
3-1045-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1045-5	Residues	tatcaagaag aactcttggg t	21
3-1046	**Sequences**		
3-1046-1	Sequence Number [ID]	1046	
3-1046-2	Molecule Type	RNA	
3-1046-3	Length	21	
3-1046-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1046-5	Residues	tagttttgac aatcaagaag a	21
3-1047	**Sequences**		
3-1047-1	Sequence Number [ID]	1047	
3-1047-2	Molecule Type	RNA	
3-1047-3	Length	21	
3-1047-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1047-5	Residues	taattctgac tttaggtgat a	21
3-1048	**Sequences**		
3-1048-1	Sequence Number [ID]	1048	
3-1048-2	Molecule Type	RNA	
3-1048-3	Length	21	
3-1048-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1048-5	Residues	taaattctga ctttaggtga t	21
3-1049	**Sequences**		
3-1049-1	Sequence Number [ID]	1049	
3-1049-2	Molecule Type	RNA	
3-1049-3	Length	21	
3-1049-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1049-5	Residues	tgaaattctg actttaggtg a	21
3-1050	**Sequences**		
3-1050-1	Sequence Number [ID]	1050	
3-1050-2	Molecule Type	RNA	
3-1050-3	Length	21	
3-1050-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1050-5	Residues	ttgaaattct gactttaggt g	21
3-1051	**Sequences**		

3-1051-1	Sequence Number [ID]	1051	
3-1051-2	Molecule Type	RNA	
3-1051-3	Length	21	
3-1051-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1051-5	Residues	`tttgaaattc tgactttagg t`	21
3-1052	**Sequences**		
3-1052-1	Sequence Number [ID]	1052	
3-1052-2	Molecule Type	RNA	
3-1052-3	Length	21	
3-1052-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1052-5	Residues	`tagcaggtat tattgcttga a`	21
3-1053	**Sequences**		
3-1053-1	Sequence Number [ID]	1053	
3-1053-2	Molecule Type	RNA	
3-1053-3	Length	21	
3-1053-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1053-5	Residues	`tgggaattaa cagcaggtat t`	21
3-1054	**Sequences**		
3-1054-1	Sequence Number [ID]	1054	
3-1054-2	Molecule Type	RNA	
3-1054-3	Length	21	
3-1054-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1054-5	Residues	`tgtgggaatt aacagcaggt a`	21
3-1055	**Sequences**		
3-1055-1	Sequence Number [ID]	1055	
3-1055-2	Molecule Type	RNA	
3-1055-3	Length	21	
3-1055-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1055-5	Residues	`tgtccggagc aagtctgact g`	21
3-1056	**Sequences**		
3-1056-1	Sequence Number [ID]	1056	
3-1056-2	Molecule Type	RNA	
3-1056-3	Length	21	
3-1056-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1056-5	Residues	`tccactggac tgaggagttc a`	21
3-1057	**Sequences**		
3-1057-1	Sequence Number [ID]	1057	
3-1057-2	Molecule Type	RNA	
3-1057-3	Length	21	
3-1057-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1057-5	Residues	`taagtaatgc tccactggac t`	21
3-1058	**Sequences**		
3-1058-1	Sequence Number [ID]	1058	
3-1058-2	Molecule Type	RNA	

3-1058-3	Length	21	
3-1058-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1058-5	Residues	tttaagtaat gctccactgg a	21
3-1059	**Sequences**		
3-1059-1	Sequence Number [ID]	1059	
3-1059-2	Molecule Type	RNA	
3-1059-3	Length	21	
3-1059-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1059-5	Residues	tggaagtcag aaaggtcttt a	21
3-1060	**Sequences**		
3-1060-1	Sequence Number [ID]	1060	
3-1060-2	Molecule Type	RNA	
3-1060-3	Length	21	
3-1060-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1060-5	Residues	tttaaaggga agtcagaaag g	21
3-1061	**Sequences**		
3-1061-1	Sequence Number [ID]	1061	
3-1061-2	Molecule Type	RNA	
3-1061-3	Length	21	
3-1061-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1061-5	Residues	tattaaaggg aagtcagaaa g	21
3-1062	**Sequences**		
3-1062-1	Sequence Number [ID]	1062	
3-1062-2	Molecule Type	RNA	
3-1062-3	Length	21	
3-1062-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1062-5	Residues	ttattaaagg gaagtcagaa a	21
3-1063	**Sequences**		
3-1063-1	Sequence Number [ID]	1063	
3-1063-2	Molecule Type	RNA	
3-1063-3	Length	21	
3-1063-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1063-5	Residues	tttattaaag ggaagtcaga a	21
3-1064	**Sequences**		
3-1064-1	Sequence Number [ID]	1064	
3-1064-2	Molecule Type	RNA	
3-1064-3	Length	21	
3-1064-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1064-5	Residues	ttttattaaa gggaagtcag a	21
3-1065	**Sequences**		
3-1065-1	Sequence Number [ID]	1065	
3-1065-2	Molecule Type	RNA	
3-1065-3	Length	21	

3-1065-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1065-5	Residues	tgcattcgga tctcgtcaat a	21
3-1066	**Sequences**		
3-1066-1	Sequence Number [ID]	1066	
3-1066-2	Molecule Type	RNA	
3-1066-3	Length	21	
3-1066-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1066-5	Residues	ttcttgcaaa tgcattcgga t	21
3-1067	**Sequences**		
3-1067-1	Sequence Number [ID]	1067	
3-1067-2	Molecule Type	RNA	
3-1067-3	Length	21	
3-1067-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1067-5	Residues	tttcttgcaa atgcattcgg a	21
3-1068	**Sequences**		
3-1068-1	Sequence Number [ID]	1068	
3-1068-2	Molecule Type	RNA	
3-1068-3	Length	21	
3-1068-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1068-5	Residues	ttttcttgca aatgcattcg g	21
3-1069	**Sequences**		
3-1069-1	Sequence Number [ID]	1069	
3-1069-2	Molecule Type	RNA	
3-1069-3	Length	21	
3-1069-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1069-5	Residues	tatttcttgc aaatgcattc g	21
3-1070	**Sequences**		
3-1070-1	Sequence Number [ID]	1070	
3-1070-2	Molecule Type	RNA	
3-1070-3	Length	21	
3-1070-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1070-5	Residues	ttatttcttg caaatgcatt c	21
3-1071	**Sequences**		
3-1071-1	Sequence Number [ID]	1071	
3-1071-2	Molecule Type	RNA	
3-1071-3	Length	21	
3-1071-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1071-5	Residues	tttcgtattt cttgcaaatg c	21
3-1072	**Sequences**		
3-1072-1	Sequence Number [ID]	1072	
3-1072-2	Molecule Type	RNA	
3-1072-3	Length	21	
3-1072-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1072-5	Residues	tctcctgtcc tgatactgtc a	21
3-1073	**Sequences**		
3-1073-1	Sequence Number [ID]	1073	
3-1073-2	Molecule Type	RNA	
3-1073-3	Length	21	
3-1073-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1073-5	Residues	tactcctgtc ctgatactgt c	21
3-1074	**Sequences**		
3-1074-1	Sequence Number [ID]	1074	
3-1074-2	Molecule Type	RNA	
3-1074-3	Length	21	
3-1074-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1074-5	Residues	taactcctgt cctgatactg t	21
3-1075	**Sequences**		
3-1075-1	Sequence Number [ID]	1075	
3-1075-2	Molecule Type	RNA	
3-1075-3	Length	21	
3-1075-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1075-5	Residues	taaactcctg tcctgatact g	21
3-1076	**Sequences**		
3-1076-1	Sequence Number [ID]	1076	
3-1076-2	Molecule Type	RNA	
3-1076-3	Length	21	
3-1076-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1076-5	Residues	ttaaactcct gtcctgatac t	21
3-1077	**Sequences**		
3-1077-1	Sequence Number [ID]	1077	
3-1077-2	Molecule Type	RNA	
3-1077-3	Length	21	
3-1077-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1077-5	Residues	tataaactcc tgtcctgata c	21
3-1078	**Sequences**		
3-1078-1	Sequence Number [ID]	1078	
3-1078-2	Molecule Type	RNA	
3-1078-3	Length	21	
3-1078-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1078-5	Residues	tcataaactc ctgtcctgat a	21
3-1079	**Sequences**		
3-1079-1	Sequence Number [ID]	1079	
3-1079-2	Molecule Type	RNA	
3-1079-3	Length	21	
3-1079-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-1079-5	Residues	tagttcttta tttctatcat a	21
3-1080	**Sequences**		
3-1080-1	Sequence Number [ID]	1080	
3-1080-2	Molecule Type	RNA	
3-1080-3	Length	21	
3-1080-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1080-5	Residues	tgagttcttt atttctatca t	21
3-1081	**Sequences**		
3-1081-1	Sequence Number [ID]	1081	
3-1081-2	Molecule Type	RNA	
3-1081-3	Length	21	
3-1081-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1081-5	Residues	tagagttctt tatttctatc a	21
3-1082	**Sequences**		
3-1082-1	Sequence Number [ID]	1082	
3-1082-2	Molecule Type	RNA	
3-1082-3	Length	21	
3-1082-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1082-5	Residues	tcagagttct ttatttctat c	21
3-1083	**Sequences**		
3-1083-1	Sequence Number [ID]	1083	
3-1083-2	Molecule Type	RNA	
3-1083-3	Length	21	
3-1083-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1083-5	Residues	tgcagagttc tttatttcta t	21
3-1084	**Sequences**		
3-1084-1	Sequence Number [ID]	1084	
3-1084-2	Molecule Type	RNA	
3-1084-3	Length	21	
3-1084-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1084-5	Residues	ttcagttggt atacaagata c	21
3-1085	**Sequences**		
3-1085-1	Sequence Number [ID]	1085	
3-1085-2	Molecule Type	RNA	
3-1085-3	Length	21	
3-1085-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1085-5	Residues	ttttgtgctt ccaaccttta c	21
3-1086	**Sequences**		
3-1086-1	Sequence Number [ID]	1086	
3-1086-2	Molecule Type	RNA	
3-1086-3	Length	21	
3-1086-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1086-5	Residues	tcacagcttt tgtgcttcca a	21

3-1087	**Sequences**		
3-1087-1	Sequence Number [ID]	1087	
3-1087-2	Molecule Type	RNA	
3-1087-3	Length	21	
3-1087-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1087-5	Residues	ttcacagctt ttgtgcttcc a	21
3-1088	**Sequences**		
3-1088-1	Sequence Number [ID]	1088	
3-1088-2	Molecule Type	RNA	
3-1088-3	Length	21	
3-1088-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1088-5	Residues	tctcacagct tttgtgcttc c	21
3-1089	**Sequences**		
3-1089-1	Sequence Number [ID]	1089	
3-1089-2	Molecule Type	RNA	
3-1089-3	Length	21	
3-1089-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1089-5	Residues	tgctcacagc ttttgtgctt c	21
3-1090	**Sequences**		
3-1090-1	Sequence Number [ID]	1090	
3-1090-2	Molecule Type	RNA	
3-1090-3	Length	21	
3-1090-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1090-5	Residues	tggctcacag cttttgtgct t	21
3-1091	**Sequences**		
3-1091-1	Sequence Number [ID]	1091	
3-1091-2	Molecule Type	RNA	
3-1091-3	Length	21	
3-1091-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1091-5	Residues	tcggctcaca gcttttgtgc t	21
3-1092	**Sequences**		
3-1092-1	Sequence Number [ID]	1092	
3-1092-2	Molecule Type	RNA	
3-1092-3	Length	21	
3-1092-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1092-5	Residues	tgcggctcac agcttttgtg c	21
3-1093	**Sequences**		
3-1093-1	Sequence Number [ID]	1093	
3-1093-2	Molecule Type	RNA	
3-1093-3	Length	21	
3-1093-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1093-5	Residues	tggagagtga aagcggctca c	21
3-1094	**Sequences**		

3-1094-1	Sequence Number [ID]	1094	
3-1094-2	Molecule Type	RNA	
3-1094-3	Length	21	
3-1094-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1094-5	Residues	`taggagagtg aaagcggctc a`	21
3-1095	**Sequences**		
3-1095-1	Sequence Number [ID]	1095	
3-1095-2	Molecule Type	RNA	
3-1095-3	Length	21	
3-1095-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1095-5	Residues	`taaggagagt gaaagcggct c`	21
3-1096	**Sequences**		
3-1096-1	Sequence Number [ID]	1096	
3-1096-2	Molecule Type	RNA	
3-1096-3	Length	21	
3-1096-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1096-5	Residues	`taaaggagag tgaaagcggc t`	21
3-1097	**Sequences**		
3-1097-1	Sequence Number [ID]	1097	
3-1097-2	Molecule Type	RNA	
3-1097-3	Length	21	
3-1097-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1097-5	Residues	`taaaaggaga gtgaaagcgg c`	21
3-1098	**Sequences**		
3-1098-1	Sequence Number [ID]	1098	
3-1098-2	Molecule Type	RNA	
3-1098-3	Length	21	
3-1098-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1098-5	Residues	`ttaaaaggag agtgaaagcg g`	21
3-1099	**Sequences**		
3-1099-1	Sequence Number [ID]	1099	
3-1099-2	Molecule Type	RNA	
3-1099-3	Length	21	
3-1099-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1099-5	Residues	`ttcaagccat tcagcactgc a`	21
3-1100	**Sequences**		
3-1100-1	Sequence Number [ID]	1100	
3-1100-2	Molecule Type	RNA	
3-1100-3	Length	21	
3-1100-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1100-5	Residues	`tatcaagcca ttcagcactg c`	21
3-1101	**Sequences**		
3-1101-1	Sequence Number [ID]	1101	
3-1101-2	Molecule Type	RNA	

3-1101-3	Length	21	
3-1101-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1101-5	Residues	taatcaagcc attcagcact g	21
3-1102	**Sequences**		
3-1102-1	Sequence Number [ID]	1102	
3-1102-2	Molecule Type	RNA	
3-1102-3	Length	21	
3-1102-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1102-5	Residues	taaatcaagc cattcagcac t	21
3-1103	**Sequences**		
3-1103-1	Sequence Number [ID]	1103	
3-1103-2	Molecule Type	RNA	
3-1103-3	Length	21	
3-1103-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1103-5	Residues	taaaatcaag ccattcagca c	21
3-1104	**Sequences**		
3-1104-1	Sequence Number [ID]	1104	
3-1104-2	Molecule Type	RNA	
3-1104-3	Length	21	
3-1104-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1104-5	Residues	ttagaaaatc aagccattca g	21
3-1105	**Sequences**		
3-1105-1	Sequence Number [ID]	1105	
3-1105-2	Molecule Type	RNA	
3-1105-3	Length	21	
3-1105-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1105-5	Residues	tctagaaaat caagccattc a	21
3-1106	**Sequences**		
3-1106-1	Sequence Number [ID]	1106	
3-1106-2	Molecule Type	RNA	
3-1106-3	Length	21	
3-1106-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1106-5	Residues	ttctagaaaa tcaagccatt c	21
3-1107	**Sequences**		
3-1107-1	Sequence Number [ID]	1107	
3-1107-2	Molecule Type	RNA	
3-1107-3	Length	21	
3-1107-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1107-5	Residues	tctctagaaa atcaagccat t	21
3-1108	**Sequences**		
3-1108-1	Sequence Number [ID]	1108	
3-1108-2	Molecule Type	RNA	
3-1108-3	Length	21	

3-1108-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1108-5	Residues	ttctctagaa aatcaagcca t	21
3-1109	**Sequences**		
3-1109-1	Sequence Number [ID]	1109	
3-1109-2	Molecule Type	RNA	
3-1109-3	Length	21	
3-1109-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1109-5	Residues	tttctctaga aaatcaagcc a	21
3-1110	**Sequences**		
3-1110-1	Sequence Number [ID]	1110	
3-1110-2	Molecule Type	RNA	
3-1110-3	Length	21	
3-1110-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1110-5	Residues	ttttctctag aaaatcaagc c	21
3-1111	**Sequences**		
3-1111-1	Sequence Number [ID]	1111	
3-1111-2	Molecule Type	RNA	
3-1111-3	Length	21	
3-1111-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1111-5	Residues	ttgaatttct ctagaaaatc a	21
3-1112	**Sequences**		
3-1112-1	Sequence Number [ID]	1112	
3-1112-2	Molecule Type	RNA	
3-1112-3	Length	21	
3-1112-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1112-5	Residues	ttcactgaat ttctctagaa a	21
3-1113	**Sequences**		
3-1113-1	Sequence Number [ID]	1113	
3-1113-2	Molecule Type	RNA	
3-1113-3	Length	21	
3-1113-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1113-5	Residues	tgagtgataa tgttcactga a	21
3-1114	**Sequences**		
3-1114-1	Sequence Number [ID]	1114	
3-1114-2	Molecule Type	RNA	
3-1114-3	Length	21	
3-1114-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1114-5	Residues	taggagtgat aatgttcact g	21
3-1115	**Sequences**		
3-1115-1	Sequence Number [ID]	1115	
3-1115-2	Molecule Type	RNA	
3-1115-3	Length	21	
3-1115-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1115-5	Residues	tacagttgct aggtgatgca c	21
3-1116	**Sequences**		
3-1116-1	Sequence Number [ID]	1116	
3-1116-2	Molecule Type	RNA	
3-1116-3	Length	21	
3-1116-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1116-5	Residues	tgggagaaaa tgcagtcaac a	21
3-1117	**Sequences**		
3-1117-1	Sequence Number [ID]	1117	
3-1117-2	Molecule Type	RNA	
3-1117-3	Length	21	
3-1117-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1117-5	Residues	tctccttgct tagcgacctt g	21
3-1118	**Sequences**		
3-1118-1	Sequence Number [ID]	1118	
3-1118-2	Molecule Type	RNA	
3-1118-3	Length	21	
3-1118-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1118-5	Residues	tgcagtaatc tccttgctta g	21
3-1119	**Sequences**		
3-1119-1	Sequence Number [ID]	1119	
3-1119-2	Molecule Type	RNA	
3-1119-3	Length	21	
3-1119-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1119-5	Residues	ttgagtcctc tgataaatct g	21
3-1120	**Sequences**		
3-1120-1	Sequence Number [ID]	1120	
3-1120-2	Molecule Type	RNA	
3-1120-3	Length	21	
3-1120-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1120-5	Residues	tttactctct ctgagtcctc t	21
3-1121	**Sequences**		
3-1121-1	Sequence Number [ID]	1121	
3-1121-2	Molecule Type	RNA	
3-1121-3	Length	21	
3-1121-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1121-5	Residues	tttatcatta ctctctctga g	21
3-1122	**Sequences**		
3-1122-1	Sequence Number [ID]	1122	
3-1122-2	Molecule Type	RNA	
3-1122-3	Length	21	
3-1122-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-1122-5	Residues	tattatcatt actctctctg a	21
3-1123	**Sequences**		
3-1123-1	Sequence Number [ID]	1123	
3-1123-2	Molecule Type	RNA	
3-1123-3	Length	21	
3-1123-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1123-5	Residues	taattatcat tactctctct g	21
3-1124	**Sequences**		
3-1124-1	Sequence Number [ID]	1124	
3-1124-2	Molecule Type	RNA	
3-1124-3	Length	21	
3-1124-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1124-5	Residues	ttaattatca ttactctctc t	21
3-1125	**Sequences**		
3-1125-1	Sequence Number [ID]	1125	
3-1125-2	Molecule Type	RNA	
3-1125-3	Length	21	
3-1125-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1125-5	Residues	tatgtaggag ctctttccac c	21
3-1126	**Sequences**		
3-1126-1	Sequence Number [ID]	1126	
3-1126-2	Molecule Type	RNA	
3-1126-3	Length	21	
3-1126-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1126-5	Residues	tgttttatgt aggagctctt t	21
3-1127	**Sequences**		
3-1127-1	Sequence Number [ID]	1127	
3-1127-2	Molecule Type	RNA	
3-1127-3	Length	21	
3-1127-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1127-5	Residues	ttgttttatg taggagctct t	21
3-1128	**Sequences**		
3-1128-1	Sequence Number [ID]	1128	
3-1128-2	Molecule Type	RNA	
3-1128-3	Length	21	
3-1128-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1128-5	Residues	tcttgtttta tgtaggagct c	21
3-1129	**Sequences**		
3-1129-1	Sequence Number [ID]	1129	
3-1129-2	Molecule Type	RNA	
3-1129-3	Length	21	
3-1129-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1129-5	Residues	tacttgtttt atgtaggagc t	21

3-1130	**Sequences**		
3-1130-1	Sequence Number [ID]	1130	
3-1130-2	Molecule Type	RNA	
3-1130-3	Length	21	
3-1130-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1130-5	Residues	taacttgttt tatgtaggag c	21
3-1131	**Sequences**		
3-1131-1	Sequence Number [ID]	1131	
3-1131-2	Molecule Type	RNA	
3-1131-3	Length	21	
3-1131-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1131-5	Residues	tcaacttgtt ttatgtagga g	21
3-1132	**Sequences**		
3-1132-1	Sequence Number [ID]	1132	
3-1132-2	Molecule Type	RNA	
3-1132-3	Length	21	
3-1132-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1132-5	Residues	tgcaacttgt tttatgtagg a	21
3-1133	**Sequences**		
3-1133-1	Sequence Number [ID]	1133	
3-1133-2	Molecule Type	RNA	
3-1133-3	Length	21	
3-1133-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1133-5	Residues	ttgcaacttg ttttatgtag g	21
3-1134	**Sequences**		
3-1134-1	Sequence Number [ID]	1134	
3-1134-2	Molecule Type	RNA	
3-1134-3	Length	21	
3-1134-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1134-5	Residues	tatgcaactt gttttatgta g	21
3-1135	**Sequences**		
3-1135-1	Sequence Number [ID]	1135	
3-1135-2	Molecule Type	RNA	
3-1135-3	Length	21	
3-1135-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1135-5	Residues	tcttgtgaaa atgccatcca c	21
3-1136	**Sequences**		
3-1136-1	Sequence Number [ID]	1136	
3-1136-2	Molecule Type	RNA	
3-1136-3	Length	21	
3-1136-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1136-5	Residues	tccttgtgaa aatgccatcc a	21
3-1137	**Sequences**		

3-1137-1	Sequence Number [ID]	1137	
3-1137-2	Molecule Type	RNA	
3-1137-3	Length	21	
3-1137-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1137-5	Residues	`ttccttgtga aaatgccatc c`	21
3-1138	**Sequences**		
3-1138-1	Sequence Number [ID]	1138	
3-1138-2	Molecule Type	RNA	
3-1138-3	Length	21	
3-1138-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1138-5	Residues	`tatccttgtg aaaatgccat c`	21
3-1139	**Sequences**		
3-1139-1	Sequence Number [ID]	1139	
3-1139-2	Molecule Type	RNA	
3-1139-3	Length	21	
3-1139-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1139-5	Residues	`tcatccttgt gaaaatgcca t`	21
3-1140	**Sequences**		
3-1140-1	Sequence Number [ID]	1140	
3-1140-2	Molecule Type	RNA	
3-1140-3	Length	21	
3-1140-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1140-5	Residues	`tattgtctgc agcacccatc c`	21
3-1141	**Sequences**		
3-1141-1	Sequence Number [ID]	1141	
3-1141-2	Molecule Type	RNA	
3-1141-3	Length	21	
3-1141-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1141-5	Residues	`tatattgtct gcagcaccca t`	21
3-1142	**Sequences**		
3-1142-1	Sequence Number [ID]	1142	
3-1142-2	Molecule Type	RNA	
3-1142-3	Length	21	
3-1142-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1142-5	Residues	`ttatattgtc tgcagcaccc a`	21
3-1143	**Sequences**		
3-1143-1	Sequence Number [ID]	1143	
3-1143-2	Molecule Type	RNA	
3-1143-3	Length	21	
3-1143-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1143-5	Residues	`tatatattgt ctgcagcacc c`	21
3-1144	**Sequences**		
3-1144-1	Sequence Number [ID]	1144	
3-1144-2	Molecule Type	RNA	

3-1144-3	Length	21	
3-1144-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1144-5	Residues	`ttatatattg tctgcagcac c`	21
3-1145	**Sequences**		
3-1145-1	Sequence Number [ID]	1145	
3-1145-2	Molecule Type	RNA	
3-1145-3	Length	21	
3-1145-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1145-5	Residues	`tatatatatt gtctgcagca c`	21
3-1146	**Sequences**		
3-1146-1	Sequence Number [ID]	1146	
3-1146-2	Molecule Type	RNA	
3-1146-3	Length	21	
3-1146-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1146-5	Residues	`ttcagttctt ccataaatgt a`	21
3-1147	**Sequences**		
3-1147-1	Sequence Number [ID]	1147	
3-1147-2	Molecule Type	RNA	
3-1147-3	Length	21	
3-1147-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1147-5	Residues	`tttatttctg ctgtgtcagt c`	21
3-1148	**Sequences**		
3-1148-1	Sequence Number [ID]	1148	
3-1148-2	Molecule Type	RNA	
3-1148-3	Length	21	
3-1148-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1148-5	Residues	`tcaaggactg tgatgttgct t`	21
3-1149	**Sequences**		
3-1149-1	Sequence Number [ID]	1149	
3-1149-2	Molecule Type	RNA	
3-1149-3	Length	21	
3-1149-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1149-5	Residues	`tagataacca aggactgtga t`	21
3-1150	**Sequences**		
3-1150-1	Sequence Number [ID]	1150	
3-1150-2	Molecule Type	RNA	
3-1150-3	Length	21	
3-1150-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1150-5	Residues	`tctagttcat ccaagataac c`	21
3-1151	**Sequences**		
3-1151-1	Sequence Number [ID]	1151	
3-1151-2	Molecule Type	RNA	
3-1151-3	Length	21	

3-1151-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1151-5	Residues	tttcctagtt catccaagat a	21
3-1152	**Sequences**		
3-1152-1	Sequence Number [ID]	1152	
3-1152-2	Molecule Type	RNA	
3-1152-3	Length	21	
3-1152-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1152-5	Residues	tgtgtagcat aggcaatggc a	21
3-1153	**Sequences**		
3-1153-1	Sequence Number [ID]	1153	
3-1153-2	Molecule Type	RNA	
3-1153-3	Length	21	
3-1153-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1153-5	Residues	tacatctctg atgaaatact c	21
3-1154	**Sequences**		
3-1154-1	Sequence Number [ID]	1154	
3-1154-2	Molecule Type	RNA	
3-1154-3	Length	21	
3-1154-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1154-5	Residues	ttcacatctc tgatgaaata c	21
3-1155	**Sequences**		
3-1155-1	Sequence Number [ID]	1155	
3-1155-2	Molecule Type	RNA	
3-1155-3	Length	21	
3-1155-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1155-5	Residues	tcagggttaa ggatttcaca t	21
3-1156	**Sequences**		
3-1156-1	Sequence Number [ID]	1156	
3-1156-2	Molecule Type	RNA	
3-1156-3	Length	21	
3-1156-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1156-5	Residues	tataatgggt gacaaacagg g	21
3-1157	**Sequences**		
3-1157-1	Sequence Number [ID]	1157	
3-1157-2	Molecule Type	RNA	
3-1157-3	Length	21	
3-1157-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1157-5	Residues	tactggcgga taatgggtga c	21
3-1158	**Sequences**		
3-1158-1	Sequence Number [ID]	1158	
3-1158-2	Molecule Type	RNA	
3-1158-3	Length	21	
3-1158-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1158-5	Residues	ttagttcaca aactggcgga t	21
3-1159	**Sequences**		
3-1159-1	Sequence Number [ID]	1159	
3-1159-2	Molecule Type	RNA	
3-1159-3	Length	21	
3-1159-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1159-5	Residues	ttttctagtt cacaaactgg c	21
3-1160	**Sequences**		
3-1160-1	Sequence Number [ID]	1160	
3-1160-2	Molecule Type	RNA	
3-1160-3	Length	21	
3-1160-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1160-5	Residues	tttcatcctc actgaccaag a	21
3-1161	**Sequences**		
3-1161-1	Sequence Number [ID]	1161	
3-1161-2	Molecule Type	RNA	
3-1161-3	Length	21	
3-1161-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1161-5	Residues	tgtaaaggaa ggtgacaaaa t	21
3-1162	**Sequences**		
3-1162-1	Sequence Number [ID]	1162	
3-1162-2	Molecule Type	RNA	
3-1162-3	Length	21	
3-1162-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1162-5	Residues	tggtaaagga aggtgacaaa a	21
3-1163	**Sequences**		
3-1163-1	Sequence Number [ID]	1163	
3-1163-2	Molecule Type	RNA	
3-1163-3	Length	21	
3-1163-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1163-5	Residues	tatttggtaa aggaaggtga c	21
3-1164	**Sequences**		
3-1164-1	Sequence Number [ID]	1164	
3-1164-2	Molecule Type	RNA	
3-1164-3	Length	21	
3-1164-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1164-5	Residues	ttatttggta aaggaaggtg a	21
3-1165	**Sequences**		
3-1165-1	Sequence Number [ID]	1165	
3-1165-2	Molecule Type	RNA	
3-1165-3	Length	21	
3-1165-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-1165-5	Residues	tttatttggt aaaggaaggt g	21
3-1166	**Sequences**		
3-1166-1	Sequence Number [ID]	1166	
3-1166-2	Molecule Type	RNA	
3-1166-3	Length	21	
3-1166-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1166-5	Residues	tgttatttgg taaaggaagg t	21
3-1167	**Sequences**		
3-1167-1	Sequence Number [ID]	1167	
3-1167-2	Molecule Type	RNA	
3-1167-3	Length	21	
3-1167-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1167-5	Residues	tattcctcta gttatttggt a	21
3-1168	**Sequences**		
3-1168-1	Sequence Number [ID]	1168	
3-1168-2	Molecule Type	RNA	
3-1168-3	Length	21	
3-1168-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1168-5	Residues	ttccttgctg caattcctct a	21
3-1169	**Sequences**		
3-1169-1	Sequence Number [ID]	1169	
3-1169-2	Molecule Type	RNA	
3-1169-3	Length	21	
3-1169-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1169-5	Residues	tataactcct tgctgcaatt c	21
3-1170	**Sequences**		
3-1170-1	Sequence Number [ID]	1170	
3-1170-2	Molecule Type	RNA	
3-1170-3	Length	21	
3-1170-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1170-5	Residues	ttccataact ccttgctgca a	21
3-1171	**Sequences**		
3-1171-1	Sequence Number [ID]	1171	
3-1171-2	Molecule Type	RNA	
3-1171-3	Length	21	
3-1171-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1171-5	Residues	tatccataac tccttgctgc a	21
3-1172	**Sequences**		
3-1172-1	Sequence Number [ID]	1172	
3-1172-2	Molecule Type	RNA	
3-1172-3	Length	21	
3-1172-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1172-5	Residues	tttaatccat aactccttgc t	21

3-1173	**Sequences**		
3-1173-1	Sequence Number [ID]	1173	
3-1173-2	Molecule Type	RNA	
3-1173-3	Length	21	
3-1173-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1173-5	Residues	tctgctagtt tagccacatt t	21
3-1174	**Sequences**		
3-1174-1	Sequence Number [ID]	1174	
3-1174-2	Molecule Type	RNA	
3-1174-3	Length	21	
3-1174-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1174-5	Residues	tacttgtgag ctgctttctt c	21
3-1175	**Sequences**		
3-1175-1	Sequence Number [ID]	1175	
3-1175-2	Molecule Type	RNA	
3-1175-3	Length	21	
3-1175-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1175-5	Residues	tgcaaaatac ttgagtctct t	21
3-1176	**Sequences**		
3-1176-1	Sequence Number [ID]	1176	
3-1176-2	Molecule Type	RNA	
3-1176-3	Length	21	
3-1176-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1176-5	Residues	ttgcaaaata cttgagtctc t	21
3-1177	**Sequences**		
3-1177-1	Sequence Number [ID]	1177	
3-1177-2	Molecule Type	RNA	
3-1177-3	Length	21	
3-1177-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1177-5	Residues	tttgcaaaat acttgagtct c	21
3-1178	**Sequences**		
3-1178-1	Sequence Number [ID]	1178	
3-1178-2	Molecule Type	RNA	
3-1178-3	Length	21	
3-1178-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1178-5	Residues	ttttgcaaaa tacttgagtc t	21
3-1179	**Sequences**		
3-1179-1	Sequence Number [ID]	1179	
3-1179-2	Molecule Type	RNA	
3-1179-3	Length	21	
3-1179-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1179-5	Residues	tctttgcaaa atacttgagt c	21
3-1180	**Sequences**		

3-1180-1	Sequence Number [ID]	1180	
3-1180-2	Molecule Type	RNA	
3-1180-3	Length	21	
3-1180-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1180-5	Residues	`tcatcgtcca taactttgca a`	21
3-1181	**Sequences**		
3-1181-1	Sequence Number [ID]	1181	
3-1181-2	Molecule Type	RNA	
3-1181-3	Length	21	
3-1181-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1181-5	Residues	`tgtttcttcc atgttgaact c`	21
3-1182	**Sequences**		
3-1182-1	Sequence Number [ID]	1182	
3-1182-2	Molecule Type	RNA	
3-1182-3	Length	21	
3-1182-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1182-5	Residues	`ttgtttcttc catgttgaac t`	21
3-1183	**Sequences**		
3-1183-1	Sequence Number [ID]	1183	
3-1183-2	Molecule Type	RNA	
3-1183-3	Length	21	
3-1183-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1183-5	Residues	`tgtgtttctt ccatgttgaa c`	21
3-1184	**Sequences**		
3-1184-1	Sequence Number [ID]	1184	
3-1184-2	Molecule Type	RNA	
3-1184-3	Length	21	
3-1184-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1184-5	Residues	`ttgtgtttct tccatgttga a`	21
3-1185	**Sequences**		
3-1185-1	Sequence Number [ID]	1185	
3-1185-2	Molecule Type	RNA	
3-1185-3	Length	21	
3-1185-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1185-5	Residues	`tctgtgtttc ttccatgttg a`	21
3-1186	**Sequences**		
3-1186-1	Sequence Number [ID]	1186	
3-1186-2	Molecule Type	RNA	
3-1186-3	Length	21	
3-1186-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1186-5	Residues	`tagaagtctg tgtttcttcc a`	21
3-1187	**Sequences**		
3-1187-1	Sequence Number [ID]	1187	
3-1187-2	Molecule Type	RNA	

3-1187-3	Length	21	
3-1187-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1187-5	Residues	taagaagaga agtctgtgtt t	21
3-1188	**Sequences**		
3-1188-1	Sequence Number [ID]	1188	
3-1188-2	Molecule Type	RNA	
3-1188-3	Length	21	
3-1188-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1188-5	Residues	ttttgttcac aaatgtagtc t	21
3-1189	**Sequences**		
3-1189-1	Sequence Number [ID]	1189	
3-1189-2	Molecule Type	RNA	
3-1189-3	Length	21	
3-1189-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1189-5	Residues	ttggagagtt attttgtaca g	21
3-1190	**Sequences**		
3-1190-1	Sequence Number [ID]	1190	
3-1190-2	Molecule Type	RNA	
3-1190-3	Length	21	
3-1190-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1190-5	Residues	tctggagagt tattttgtac a	21
3-1191	**Sequences**		
3-1191-1	Sequence Number [ID]	1191	
3-1191-2	Molecule Type	RNA	
3-1191-3	Length	21	
3-1191-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1191-5	Residues	taagataggc tgttactgga g	21
3-1192	**Sequences**		
3-1192-1	Sequence Number [ID]	1192	
3-1192-2	Molecule Type	RNA	
3-1192-3	Length	21	
3-1192-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1192-5	Residues	tatgctcaca tgtcacacaa a	21
3-1193	**Sequences**		
3-1193-1	Sequence Number [ID]	1193	
3-1193-2	Molecule Type	RNA	
3-1193-3	Length	21	
3-1193-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1193-5	Residues	ttttatgctc acatgtcaca c	21
3-1194	**Sequences**		
3-1194-1	Sequence Number [ID]	1194	
3-1194-2	Molecule Type	RNA	
3-1194-3	Length	21	

3-1194-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1194-5	Residues	tgtcataatt ttatgctcac a	21
3-1195	**Sequences**		
3-1195-1	Sequence Number [ID]	1195	
3-1195-2	Molecule Type	RNA	
3-1195-3	Length	21	
3-1195-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1195-5	Residues	tggaatatac catggtcata a	21
3-1196	**Sequences**		
3-1196-1	Sequence Number [ID]	1196	
3-1196-2	Molecule Type	RNA	
3-1196-3	Length	21	
3-1196-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1196-5	Residues	taggaatata ccatggtcat a	21
3-1197	**Sequences**		
3-1197-1	Sequence Number [ID]	1197	
3-1197-2	Molecule Type	RNA	
3-1197-3	Length	21	
3-1197-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1197-5	Residues	tctgtttcca ataggaatat a	21
3-1198	**Sequences**		
3-1198-1	Sequence Number [ID]	1198	
3-1198-2	Molecule Type	RNA	
3-1198-3	Length	21	
3-1198-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1198-5	Residues	ttctctgttt ccaataggaa t	21
3-1199	**Sequences**		
3-1199-1	Sequence Number [ID]	1199	
3-1199-2	Molecule Type	RNA	
3-1199-3	Length	21	
3-1199-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1199-5	Residues	taaacctctc tgtttccaat a	21
3-1200	**Sequences**		
3-1200-1	Sequence Number [ID]	1200	
3-1200-2	Molecule Type	RNA	
3-1200-3	Length	21	
3-1200-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1200-5	Residues	tagaaaagtt aggaagacag a	21
3-1201	**Sequences**		
3-1201-1	Sequence Number [ID]	1201	
3-1201-2	Molecule Type	RNA	
3-1201-3	Length	21	
3-1201-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	

		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1201-5	Residues	tacgtagaaa agttaggaag a	21
3-1202	**Sequences**		
3-1202-1	Sequence Number [ID]	1202	
3-1202-2	Molecule Type	RNA	
3-1202-3	Length	21	
3-1202-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1202-5	Residues	ttacgtagaa aagttaggaa g	21
3-1203	**Sequences**		
3-1203-1	Sequence Number [ID]	1203	
3-1203-2	Molecule Type	RNA	
3-1203-3	Length	21	
3-1203-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1203-5	Residues	tagagtgttt atacgtagaa a	21
3-1204	**Sequences**		
3-1204-1	Sequence Number [ID]	1204	
3-1204-2	Molecule Type	RNA	
3-1204-3	Length	21	
3-1204-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1204-5	Residues	taagagtgtt tatacgtaga a	21
3-1205	**Sequences**		
3-1205-1	Sequence Number [ID]	1205	
3-1205-2	Molecule Type	RNA	
3-1205-3	Length	21	
3-1205-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1205-5	Residues	ttcaagagtg tttatacgta g	21
3-1206	**Sequences**		
3-1206-1	Sequence Number [ID]	1206	
3-1206-2	Molecule Type	RNA	
3-1206-3	Length	21	
3-1206-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1206-5	Residues	tggaagtcta ttcaagagtg t	21
3-1207	**Sequences**		
3-1207-1	Sequence Number [ID]	1207	
3-1207-2	Molecule Type	RNA	
3-1207-3	Length	21	
3-1207-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1207-5	Residues	taaagtggaa gtctattcaa g	21
3-1208	**Sequences**		
3-1208-1	Sequence Number [ID]	1208	
3-1208-2	Molecule Type	RNA	
3-1208-3	Length	21	
3-1208-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		

3-1208-5	Residues	tcaaagtgga agtctattca a	21
3-1209	**Sequences**		
3-1209-1	Sequence Number [ID]	1209	
3-1209-2	Molecule Type	RNA	
3-1209-3	Length	21	
3-1209-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1209-5	Residues	tttacaaagt ggaagtctat t	21
3-1210	**Sequences**		
3-1210-1	Sequence Number [ID]	1210	
3-1210-2	Molecule Type	RNA	
3-1210-3	Length	21	
3-1210-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1210-5	Residues	ttaattacaa agtggaagtc t	21
3-1211	**Sequences**		
3-1211-1	Sequence Number [ID]	1211	
3-1211-2	Molecule Type	RNA	
3-1211-3	Length	21	
3-1211-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1211-5	Residues	tctaattaca aagtggaagt c	21
3-1212	**Sequences**		
3-1212-1	Sequence Number [ID]	1212	
3-1212-2	Molecule Type	RNA	
3-1212-3	Length	21	
3-1212-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1212-5	Residues	tttaaggctt tactggactt a	21
3-1213	**Sequences**		
3-1213-1	Sequence Number [ID]	1213	
3-1213-2	Molecule Type	RNA	
3-1213-3	Length	21	
3-1213-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1213-5	Residues	tatattctgc cacttaaggc t	21
3-1214	**Sequences**		
3-1214-1	Sequence Number [ID]	1214	
3-1214-2	Molecule Type	RNA	
3-1214-3	Length	21	
3-1214-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1214-5	Residues	tggaattata ttctgccact t	21
3-1215	**Sequences**		
3-1215-1	Sequence Number [ID]	1215	
3-1215-2	Molecule Type	RNA	
3-1215-3	Length	21	
3-1215-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1215-5	Residues	ttggatagat tcctgccaga t	21

3-1216	**Sequences**		
3-1216-1	Sequence Number [ID]	1216	
3-1216-2	Molecule Type	RNA	
3-1216-3	Length	21	
3-1216-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1216-5	Residues	tgttcaatgg atagattcct g	21
3-1217	**Sequences**		
3-1217-1	Sequence Number [ID]	1217	
3-1217-2	Molecule Type	RNA	
3-1217-3	Length	21	
3-1217-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1217-5	Residues	tggtggataa actggttgca t	21
3-1218	**Sequences**		
3-1218-1	Sequence Number [ID]	1218	
3-1218-2	Molecule Type	RNA	
3-1218-3	Length	21	
3-1218-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1218-5	Residues	tgttcttggt ggataaactg g	21
3-1219	**Sequences**		
3-1219-1	Sequence Number [ID]	1219	
3-1219-2	Molecule Type	RNA	
3-1219-3	Length	21	
3-1219-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1219-5	Residues	tttcttatgt tcttggtgga t	21
3-1220	**Sequences**		
3-1220-1	Sequence Number [ID]	1220	
3-1220-2	Molecule Type	RNA	
3-1220-3	Length	21	
3-1220-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1220-5	Residues	tcttattcct tctgtgctct a	21
3-1221	**Sequences**		
3-1221-1	Sequence Number [ID]	1221	
3-1221-2	Molecule Type	RNA	
3-1221-3	Length	21	
3-1221-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1221-5	Residues	ttgaccttat tccttctgtg c	21
3-1222	**Sequences**		
3-1222-1	Sequence Number [ID]	1222	
3-1222-2	Molecule Type	RNA	
3-1222-3	Length	21	
3-1222-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1222-5	Residues	tatgacctta ttccttctgt g	21
3-1223	**Sequences**		

3-1223-1	Sequence Number [ID]	1223	
3-1223-2	Molecule Type	RNA	
3-1223-3	Length	21	
3-1223-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1223-5	Residues	`ttaaactgct taatcctatg a`	21
3-1224	**Sequences**		
3-1224-1	Sequence Number [ID]	1224	
3-1224-2	Molecule Type	RNA	
3-1224-3	Length	21	
3-1224-4	Features Location/	**source 1..21**	
	Qualifiers	mol_type=other RNA	
		organism=synthetic construct	
	NonEnglishQualifier Value		
3-1224-5	Residues	`taacaatctt taaactgctt a`	21