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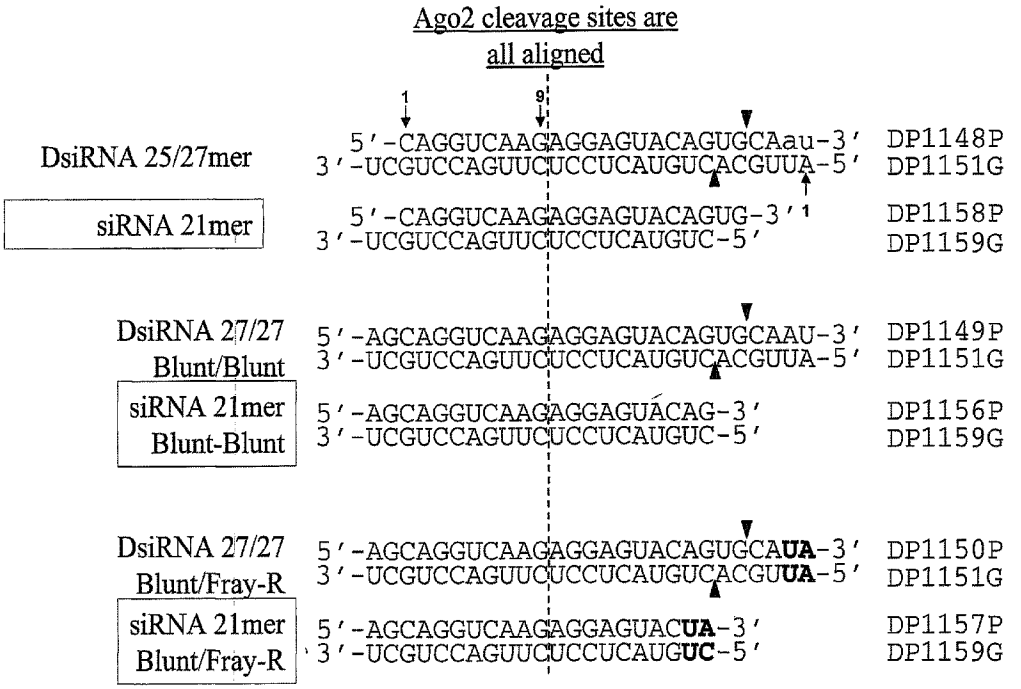
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(54) Titre : PROCEDES ET COMPOSITIONS POUR L'INHIBITION SPECIFIQUE DE KRAS PAR DE L'ARN DOUBLE BRIN ASYMETRIQUE

(54) Title: METHODS AND COMPOSITIONS FOR THE SPECIFIC INHIBITION OF KRAS BY ASYMMETRIC DOUBLE-STRANDED RNA



(57) Abrégé/Abstract:
This invention relates to compounds, compositions, and methods useful for reducing KRAS target RNA and pro-tein levels via use of Dicer substrate siRNA (DsiRNA) agents possessing asymmetric end structures.

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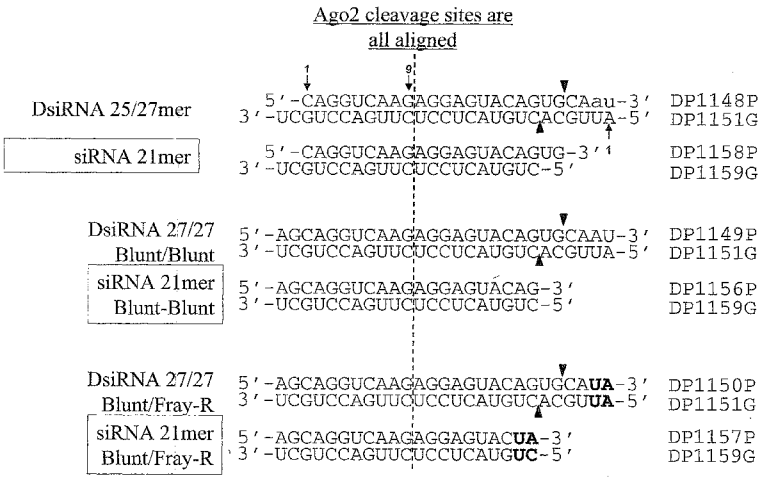
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[Continued on next page]

(54) Title: METHODS AND COMPOSITIONS FOR THE SPECIFIC INHIBITION OF KRAS BY ASYMMETRIC DOUBLE-STRANDED RNA

Figure 1



(57) Abstract: This invention relates to compounds, compositions, and methods useful for reducing KRAS target RNA and protein levels via use of Dicer substrate siRNA (DsiRNA) agents possessing asymmetric end structures.

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METHODS AND COMPOSITIONS FOR THE SPECIFIC INHIBITION OF KRAS BY ASYMMETRIC DOUBLE-STRANDED RNA

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority to, and the benefit under 35 U.S.C. §119(e) of, the following applications: U.S. provisional patent application No. 61/166,559, filed April 3, 2009; U.S. provisional patent application No. 61/166,578, filed April 3, 2009; U.S. provisional patent application No. 61/174,279, filed April 30, 2009; U.S. provisional patent application No. 61/174,306, filed April 30, 2009; U.S. provisional patent application No. 61/257,810, filed November 3, 2009; and U.S. provisional patent application No. 61/257,820, filed November 3, 2009. The present application also claims priority to the following applications: U.S. patent application No. 12/704,256, filed February 11, 2010; U.S. patent application No. 12/642,371, filed December 18, 2009; U.S. patent application No. 12/646,404, filed December 18, 2009; U.S. patent application No. 12/642,264, filed December 18, 2009; and PCT application No. PCT/US2009/005214, filed September 17, 2009. The present application claims priority to, and the benefit under 35 U.S.C. §119(e) of, the following applications: U.S. provisional patent application No. 61/183,815, filed June 3, 2009; U.S. provisional patent application No. 61/183,818, filed June 3, 2009.; U.S. provisional patent application No. 61/184,735, filed June 5, 2009; U.S. provisional patent application No. 61/285,925, filed December 11, 2009; and U.S. provisional patent application No. 61/309,266, filed March 1, 2010.

FIELD OF THE INVENTION

The present invention relates to compounds, compositions, and methods for the study, diagnosis, and treatment of traits, diseases and conditions that respond to the modulation of KRAS gene expression and/or activity. The present invention is also directed to compounds, compositions, and methods relating to traits, diseases and conditions that respond to the modulation of expression and/or activity of genes involved in KRAS gene expression pathways or other cellular processes that mediate the maintenance or development of such traits, diseases and conditions. Specifically, the invention relates to small nucleic acid molecules that are capable of being processed by the Dicer enzyme, such as Dicer substrate siRNAs (DsiRNAs) capable of mediating RNA interference (RNAi) against KRAS gene expression. Such anti-KRAS DsiRNAs are useful, for example, in providing compositions

for treatment of traits, diseases and conditions that can respond to modulation of KRAS in a subject, such as cancer and/or other proliferative diseases, disorders, or conditions.

BACKGROUND OF THE INVENTION

Disregulated Ras signaling can lead to tumor growth and metastasis (Goodsell DS. *Oncologist* 4: 263-4). It is estimated that 20-25% of all human tumors contain activating mutations in Ras; and in specific tumor types, this figure can be as high as 90% (Downward J. *Nat Rev Cancer*, 3: 11-22). Accordingly, members of the Ras gene family are attractive molecular targets for cancer therapeutic design.

The three human RAS genes encode highly related 188 to 189 amino acid proteins, designated H-Ras, N-Ras and K-Ras4A (KRAS isoform a) and K-Ras4B (KRAS isoform b; the two KRas proteins arise from alternative gene splicing). Ras proteins function as binary molecular switches that control intracellular signaling networks. Ras-regulated signal pathways control such processes as actin cytoskeletal integrity, proliferation, differentiation, cell adhesion, apoptosis, and cell migration. Ras and Ras-related proteins are often deregulated in cancers, leading to increased invasion and metastasis, and decreased apoptosis. Ras activates a number of pathways but an especially important one for tumorigenesis appears to be the mitogen-activated protein (MAP) kinases, which themselves transmit signals downstream to other protein kinases and gene regulatory proteins (Lodish *et al. Molecular Cell Biology* (4th ed.). San Francisco: W.H. Freeman, Chapter 25, "Cancer").

Double-stranded RNA (dsRNA) agents possessing strand lengths of 25 to 35 nucleotides have been described as effective inhibitors of target gene expression in mammalian cells (Rossi *et al.*, U.S. Patent Application Nos. 2005/0244858 and US 2005/0277610). dsRNA agents of such length are believed to be processed by the Dicer enzyme of the RNA interference (RNAi) pathway, leading such agents to be termed "Dicer substrate siRNA" ("DsiRNA") agents. Additional modified structures of DsiRNA agents were previously described (Rossi *et al.*, U.S. Patent Application No. 2007/0265220).

BRIEF SUMMARY OF THE INVENTION

The present invention is directed to compositions that contain double stranded RNA ("dsRNA"), and methods for preparing them. The dsRNAs of the invention are capable of reducing the expression of a target KRas gene in a cell, either *in vitro* or in a mammalian subject. More particularly, the invention is directed to preferred Dicer substrate siRNAs ("DsiRNAs") with structures and modification patterns that are optimized to act as effective

and highly potent KRAS inhibitory agents, optionally possessing extended duration of inhibitory effect. A majority of such DsiRNAs possess target-specific inhibitory potencies and efficacies that are surprisingly enhanced relative to 21 nucleotide siRNAs directed against the same target RNA. While not intending to be bound by theory, such enhanced activity likely reflects an advantage inherent in DsiRNA agents engaging the RNAi pathway at a point in the pathway that is upstream of the point at which shorter siRNA agents engage the RNAi pathway.

In one aspect, the invention provides an isolated double stranded ribonucleic acid (dsRNA) comprising first and second nucleic acid strands and a duplex region of at least 25 base pairs, wherein the second strand of said dsRNA comprises 1-5 single-stranded nucleotides at its 3' terminus, wherein the second oligonucleotide strand is sufficiently complementary to a target KRAS cDNA sequence selected from the group consisting of SEQ ID NOs: 141-186 along at least 19 nucleotides and at most 35 nucleotides of the second oligonucleotide strand length to reduce KRAS target gene expression when the double stranded nucleic acid is introduced into a mammalian cell.

In one embodiment, starting from the first nucleotide (position 1) at the 3' terminus of the first oligonucleotide strand, position 1, 2 and/or 3 is substituted with a modified nucleotide. In certain embodiments, the modified nucleotide residue of the 3' terminus of the first strand is a deoxyribonucleotide, an acyclonucleotide or a fluorescent molecule. In a related embodiment, position 1 of the 3' terminus of the first oligonucleotide strand is a deoxyribonucleotide.

In an additional embodiment, the 3' terminus of the first strand and the 5' terminus of the second strand form a blunt end.

In another embodiment, the first strand is 25 nucleotides in length and the second strand is 27 nucleotides in length.

In one embodiment, the second strand includes a sequence of SEQ ID NOs: 11-50 and 135-140.

In another embodiment, the first strand includes a sequence of SEQ ID NOs: 5, 8 and 91-134.

In an additional embodiment, the dsRNA includes a pair of first strand/second strand sequences that is SEQ ID NO: 5/SEQ ID NO: 14, SEQ ID NO: 8/SEQ ID NO: 43, SEQ ID NO: 132/SEQ ID NO: 138, SEQ ID NO: 91/SEQ ID NO: 11, SEQ ID NO: 129/SEQ ID NO: 135, SEQ ID NO: 92/SEQ ID NO: 12, SEQ ID NO: 130/SEQ ID NO: 136, SEQ ID NO: 93/SEQ ID NO: 13, SEQ ID NO: 131/SEQ ID NO: 137, SEQ ID NO: 94/SEQ ID NO: 15,

SEQ ID NO: 133/SEQ ID NO: 139, SEQ ID NO: 95/SEQ ID NO: 16, SEQ ID NO: 96/SEQ ID NO: 17, SEQ ID NO: 97/SEQ ID NO: 18, SEQ ID NO: 98/SEQ ID NO: 19, SEQ ID NO: 99/SEQ ID NO: 20, SEQ ID NO: 100/SEQ ID NO: 21, SEQ ID NO: 101/SEQ ID NO: 22, SEQ ID NO: 102/SEQ ID NO: 23, SEQ ID NO: 103/SEQ ID NO: 24, SEQ ID NO: 104/SEQ ID NO: 25, SEQ ID NO: 105/SEQ ID NO: 26, SEQ ID NO: 106/SEQ ID NO: 27, SEQ ID NO: 107/SEQ ID NO: 28, SEQ ID NO: 108/SEQ ID NO: 29, SEQ ID NO: 109/SEQ ID NO: 30, SEQ ID NO: 110/SEQ ID NO: 31, SEQ ID NO: 111/SEQ ID NO: 32, SEQ ID NO: 112/SEQ ID NO: 33, SEQ ID NO: 113/SEQ ID NO: 34, SEQ ID NO: 114/SEQ ID NO: 35, SEQ ID NO: 115/SEQ ID NO: 36, SEQ ID NO: 116/SEQ ID NO: 37, SEQ ID NO: 117/SEQ ID NO: 38, SEQ ID NO: 118/SEQ ID NO: 39, SEQ ID NO: 119/SEQ ID NO: 40, SEQ ID NO: 134/SEQ ID NO: 140, SEQ ID NO: 120/SEQ ID NO: 41, SEQ ID NO: 121/SEQ ID NO: 42, SEQ ID NO: 122/SEQ ID NO: 44, SEQ ID NO: 123/SEQ ID NO: 45, SEQ ID NO: 124/SEQ ID NO: 46, SEQ ID NO: 125/SEQ ID NO: 47, SEQ ID NO: 126/SEQ ID NO: 48, SEQ ID NO: 127/SEQ ID NO: 49 or SEQ ID NO: 128/SEQ ID NO: 50.

In one embodiment, each of the first and the second strands has a length which is at least 26 nucleotides.

In another embodiment, the nucleotides of the 3' overhang include a modified nucleotide. Optionally, the modified nucleotide of the 3' overhang is a 2'-O-methyl ribonucleotide. In a related embodiment, all nucleotides of the 3' overhang are modified nucleotides.

In an additional embodiment, one or both of the first and second oligonucleotide strands includes a 5' phosphate.

In another embodiment, the modified nucleotide residues of the dsRNA are 2'-O-methyl, 2'-methoxyethoxy, 2'-fluoro, 2'-allyl, 2'-O-[2-(methylamino)-2-oxoethyl], 4'-thio, 4'-CH2-O-2'-bridge, 4'-(CH2)2-O-2'-bridge, 2'-LNA, 2'-amino or 2'-O-(N-methlycarbamate).

In one embodiment, the 3' overhang of the dsRNA is 1-3 nucleotides in length. Optionally, the 3' overhang is 1-2 nucleotides in length. In a related embodiment, the 3' overhang is two nucleotides in length and the modified nucleotide of the 3' overhang is a 2'-O-methyl modified ribonucleotide.

In a further embodiment, the second oligonucleotide strand, starting from the nucleotide residue of the second strand that is complementary to the 5' terminal nucleotide residue of the first oligonucleotide strand, includes alternating modified and unmodified nucleotide residues. In another embodiment, the second oligonucleotide strand, starting from

the nucleotide residue of the second strand that is complementary to the 5' terminal nucleotide residue of the first oligonucleotide strand, includes unmodified nucleotide residues at all positions from position 18 to the 5' terminus of the second oligonucleotide strand.

In another embodiment, each of the first and the second strands has a length which is at least 26 and at most 30 nucleotides.

In one embodiment, the dsRNA is cleaved endogenously in the cell by Dicer.

In an additional embodiment, the amount of the isolated double stranded nucleic acid sufficient to reduce expression of the target gene is 1 nanomolar or less, 200 picomolar or less, 100 picomolar or less, 50 picomolar or less, 20 picomolar or less, 10 picomolar or less, 5 picomolar or less, 2 picomolar or less or 1 picomolar or less in the environment of the cell.

In a further embodiment, the isolated dsRNA possesses greater potency than isolated 21mer siRNAs directed to the identical at least 19 nucleotides of the target KRAS cDNA in reducing target KRAS gene expression when assayed *in vitro* in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less, 200 picomolar or less, 100 picomolar or less, 50 picomolar or less, 20 picomolar or less, 10 picomolar or less, 5 picomolar or less, 2 picomolar or less or 1 picomolar or less.

In another embodiment, the isolated dsRNA is sufficiently complementary to the target KRAS cDNA sequence to reduce KRAS target gene expression by at least 10%, at least 50%, at least 80-90%, at least 95%, at least 98%, or at least 99% when the double stranded nucleic acid is introduced into a mammalian cell.

In a further embodiment, the first and second strands are joined by a chemical linker. In a related embodiment, the 3' terminus of the first strand and the 5' terminus of the second strand are joined by a chemical linker.

In one embodiment, a nucleotide of the second or first strand is substituted with a modified nucleotide that directs the orientation of Dicer cleavage.

In another embodiment, the dsRNA has a modified nucleotide that is a deoxyribonucleotide, a dideoxyribonucleotide, an acyclonucleotide, a 3'-deoxyadenosine (cordycepin), a 3'-azido-3'-deoxythymidine (AZT), a 2',3'-dideoxyinosine (ddI), a 2',3'-dideoxy-3'-thiacytidine (3TC), a 2',3'-didehydro-2',3'-dideoxythymidine (d4T), a monophosphate nucleotide of 3'-azido-3'-deoxythymidine (AZT), a 2',3'-dideoxy-3'-thiacytidine (3TC) and a monophosphate nucleotide of 2',3'-didehydro-2',3'-dideoxythymidine (d4T), a 4-thiouracil, a 5-bromouracil, a 5-iodouracil, a 5-(3-aminoallyl)-uracil, a 2'-O-alkyl ribonucleotide, a 2'-O-methyl ribonucleotide, a 2'-amino ribonucleotide, a 2'-fluoro ribonucleotide, or a locked nucleic acid.

In an additional embodiment, the dsRNA has a phosphonate, a phosphorothioate or a phosphotriesterphosphate backbone modification.

In one embodiment, the invention provides a method for reducing expression of a target KRAS gene in a mammalian cell having contacting a mammalian cell *in vitro* with an isolated dsRNA as described in an amount sufficient to reduce expression of a target KRAS gene in the cell.

In one embodiment, target KRAS gene expression is reduced by at least 10%, at least 50%, or at least 80-90%. In another embodiment, target KRAS mRNA levels are reduced at least 90% at least 8 days after the cell is contacted with the dsRNA. In a further embodiment, KRAS mRNA levels are reduced by at least 70% at least 10 days after the cell is contacted with the dsRNA.

In a further embodiment, the invention provides a method for reducing expression of a target KRAS gene in a mammal by administering an isolated dsRNA as described to a mammal in an amount sufficient to reduce expression of a target KRAS gene in the mammal.

In one embodiment, the isolated dsRNA is administered at a dosage of 1 microgram to 5 milligrams per kilogram of the mammal per day, 100 micrograms to 0.5 milligrams per kilogram, 0.001 to 0.25 milligrams per kilogram, 0.01 to 20 micrograms per kilogram, 0.01 to 10 micrograms per kilogram, 0.10 to 5 micrograms per kilogram, or 0.1 to 2.5 micrograms per kilogram.

In another embodiment, the isolated dsRNA possesses greater potency than isolated 21mer siRNAs directed to the identical at least 19 nucleotides of the target KRAS cDNA in reducing target KRAS gene expression when assayed *in vitro* in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less.

In an additional embodiment, the administering step includes intravenous injection, intramuscular injection, intraperitoneal injection, infusion, subcutaneous injection, transdermal, aerosol, rectal, vaginal, topical, oral or inhaled delivery.

In a further embodiment, the invention provides a method for selectively inhibiting the growth of a cell by contacting a cell with an amount of an isolated dsRNA as described, in an amount sufficient to inhibit the growth of the cell.

In one embodiment, the cell is a tumor cell of a subject. Optionally, the cell is a tumor cell *in vitro*. In a related embodiment, the cell is a human cell.

In an additional embodiment, the invention provides a formulation which includes an isolated dsRNA as described, where the dsRNA is present in an amount effective to reduce target KRAS RNA levels when the dsRNA is introduced into a mammalian cell *in vitro* by at

least 10%, at least 50% or at least 80-90%, and where the dsRNA possesses greater potency than isolated 21mer siRNAs directed to the identical at least 19 nucleotides of the target KRAS cDNA in reducing target KRAS RNA levels when assayed *in vitro* in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less.

In one embodiment, the effective amount is 1 nanomolar or less, 200 picomolar or less, 100 picomolar or less, 50 picomolar or less, 20 picomolar or less, 10 picomolar or less, 5 picomolar or less, 2 picomolar or less or 1 picomolar or less in the environment of the cell.

In another embodiment, the invention provides a formulation which includes an isolated dsRNA as described, where the dsRNA is present in an amount effective to reduce target RNA levels when the dsRNA is introduced into a cell of a mammalian subject by at least 10%, at least 50% or at least 80-90%, and where the dsRNA possesses greater potency than isolated 21mer siRNAs directed to the identical at least 19 nucleotides of the target KRAS cDNA in reducing target KRAS RNA levels when assayed *in vitro* in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less.

In one embodiment, the effective amount is a dosage of 1 microgram to 5 milligrams per kilogram of the subject per day, 100 micrograms to 0.5 milligrams per kilogram, 0.001 to 0.25 milligrams per kilogram, 0.01 to 20 micrograms per kilogram, 0.01 to 10 micrograms per kilogram, 0.10 to 5 micrograms per kilogram, or 0.1 to 2.5 micrograms per kilogram.

In an additional embodiment, the invention provides a mammalian cell containing an isolated dsRNA as described.

Another embodiment of the invention provides a pharmaceutical composition which includes an isolated dsRNA as described and a pharmaceutically acceptable carrier. A further embodiment of the invention provides a kit having an isolated dsRNA as described and instructions for its use.

In an additional aspect, the invention provides a composition possessing KRAS inhibitory activity consisiting essentially of an isolated double stranded ribonucleic acid (dsRNA) comprising first and second nucleic acid strands and a duplex region of at least 25 base pairs, wherein the second strand of said dsRNA comprises 1-5 single-stranded nucleotides at its 3' terminus, wherein the second oligonucleotide strand is sufficiently complementary to a target KRAS cDNA sequence selected from the group consisting of SEQ ID NOs: 141-186 along at least 19 nucleotides and at most 35 nucleotides of the second oligonucleotide strand length to reduce KRAS target gene expression when the double stranded nucleic acid is introduced into a mammalian cell.

In another aspect, the invention provides an isolated double stranded ribonucleic acid (dsRNA) comprising first and second nucleic acid strands and a duplex region of at least 25 base pairs, wherein the second strand of said dsRNA comprises 1-5 single-stranded nucleotides at its 3' terminus, wherein the second oligonucleotide strand is sufficiently complementary to a target KRAS cDNA sequence selected from the group consisting of SEQ ID NOs: 1595-2297 and 3704-4406 along at least 19 nucleotides and at most 35 nucleotides of the second oligonucleotide strand length to reduce KRAS target gene expression when the double stranded nucleic acid is introduced into a mammalian cell.

In one embodiment, the second strand includes a sequence of SEQ ID NOs: 189-891 and 2298-3000.

In another embodiment, the first strand includes a sequence of SEQ ID NOs: 892-1594 and 3001-3703.

In an additional embodiment, the dsRNA includes a DsiRNA agent selected from the group consisting of DsiRNA agents shown in Tables 4-5.

In a further aspect, the invention provides a composition possessing KRAS inhibitory activity consisiting essentially of an isolated double stranded ribonucleic acid (dsRNA) comprising first and second nucleic acid strands and a duplex region of at least 25 base pairs, wherein the second strand of the dsRNA comprises 1-5 single-stranded nucleotides at its 3' terminus, wherein the second oligonucleotide strand is sufficiently complementary to a target KRAS cDNA sequence selected from the group consisting of SEQ ID NOs: 1595-2297 and 3704-4406 along at least 19 nucleotides and at most 35 nucleotides of the second oligonucleotide strand length to reduce KRAS target gene expression when the double stranded nucleic acid is introduced into a mammalian cell.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows the structures of exemplary DsiRNA agents targeting a site in the KRAS RNA referred to herein as the "KRAS-355" target site. The 25/27mer and 27/27mer DsiRNA agents (optionally, possessing a blunt/fray design) were tested for KRas inhibitory efficacy in comparison with the 21mer siRNA constructs shown. UPPER case = unmodified RNA, lower case = DNA, **Bold** = mismatch base pair nucleotides; arrowheads indicate projected Dicer enzyme cleavage sites; dashed line indicates sense strand (top strand) sequences

corresponding to the projected Argonaute 2 (Ago2) cleavage site within the targeted KRas sequence.

Figure 2 shows the anti-KRAS inhibitory efficacy of the agents depicted in Figure 1, when transformed into cells in culture at 1 nanomolar concentration. "Optimized" = 25/27mer DsiRNA and 21mer siRNA of Figure 1; Blunt/Blunt and Blunt/Fray agents are as indicated in Figure 1; "Veh" = vehicle-treated control; "Un" = untreated control.

Figure 3 shows the anti-KRAS inhibitory efficacy of the agents depicted in Figure 1, when transformed into cells in culture at 100 picomolar concentration. "Optimized" = 25/27mer DsiRNA and 21mer siRNA of Figure 1; Blunt/Blunt and Blunt/Fray agents are as indicated in Figure 1; "Veh" = vehicle-treated control; "Un" = untreated control.

Figure 4 shows the structures of exemplary DsiRNA agents targeting a site in the KRAS RNA referred to herein as the "KRAS-940" target site. The 25/27mer and 27/27mer DsiRNA agents (optionally, possessing a blunt/fray design) were tested for KRAS inhibitory efficacy in comparison with the 21mer siRNA constructs shown. UPPER case = unmodified RNA, lower case = DNA, **Bold** = mismatch base pair nucleotides; arrowheads indicate projected Dicer enzyme cleavage sites; dashed line indicates sense strand (top strand) sequences corresponding to the projected Argonaute 2 (Ago2) cleavage site within the targeted KRAS sequence.

Figure 5 shows the anti-KRAS inhibitory efficacy of the agents depicted in Figure 4, when transformed into cells in culture at 1 nanomolar concentration. "Optimized" = 25/27mer DsiRNA and 21mer siRNA of Figure 4; Blunt/Blunt and Blunt/Fray agents are as indicated in Figure 4; "Veh" = vehicle-treated control; "Un" = untreated control.

Figure 6 shows the anti-KRAS inhibitory efficacy of the agents depicted in Figure 4, when transformed into cells in culture at 100 picomolar concentration. "Optimized" = 25/27mer DsiRNA and 21mer siRNA of Figure 4; Blunt/Blunt and Blunt/Fray agents are as indicated in Figure 4; "Veh" = vehicle-treated control; "Un" = untreated control.

Figure 7 shows a schematic comparison of tested DsiRNAs and their Dicer processing products, as compared to cognate 21mer siRNAs directed against the same exact KRAS target sequence. 2'-O-methyl modifications are indicated by open circles; shaded circles indicate deoxyribonucleotides; shaded triangles indicate Dicer enzyme cleavage sites within a 25/27mer agent; open triangles indicate the position on the antisense strand corresponding to

the Argonaute 2 (Ago2) cleavage sites within the target RNA. Such sites are identical between the 40 tested DsiRNA agents when compared to their cognate siRNA agents.

Figure 8 shows a plot of comparative inhibitory efficacies between anti-KRAS DsiRNA 25/27mers and their cognate 21mer siRNAs. The plot is arranged in rank-order by % inhibition of KRAS target gene by the 25/27mer DsiRNA agent. Arrows indicate the difference in efficacy observed between DsiRNA agent and corresponding siRNA agent. Squares indicate siRNA inhibitory results; circles indicate DsiRNA inhibitory results.

Figure 9 shows a graph of inhibitory results arranged in rank-order by amount of difference in inhibitory effect between DsiRNA agents and their cognate siRNAs. Both DsiRNAs and siRNAs were tested at 24 hours post-administration at both 5 nM (shaded squares) and 1 nM (shaded triangles), and at 48 hours post administration at both 5 nM (open squares) and 1 nM (open triangles). Shaded regions indicate agents for which a statistically significant difference was observed between DsiRNA and cognate siRNA. For 26 of the 40 tested anti-KRAS DsiRNA agents, statistically significant DsiRNA superiority was observed, as compared to only six of forty siRNA agents that outperformed DsiRNA agents.

Figures 10 and 11 show IC-50 curves observed for indicated human KRAS-targeting DsiRNAs.

Figures 12-21 show histograms of human KRAS inhibitory efficacies observed for indicated DsiRNAs. "P1" indicates phase 1, while "P2" indicates phase 2. In phase 1, DsiRNAs were tested at 1 nM in the environment of HeLa cells. In phase 2, DsiRNAs were tested at 1 nM and at 0.1 nM (with duplicate experiments run at 0.1 nM) in the environment of HeLa cells. Individual bars represent average human KRAS levels observed in triplicate, with standard errors shown. Human KRAS levels were normalized to HPRT and SFRS9 levels.

Figures 22-31 show histograms of mouse KRAS inhibitory efficacies observed for indicated DsiRNAs. "P1" indicates phase 1, while "P2" indicates phase 2. In phase 1, DsiRNAs were tested at 1 nM in the environment of mouse Hepa 1-6 cells. In phase 2, DsiRNAs were tested at 1 nM and at 0.1 nM (with duplicate experiments run at 0.1 nM) in the environment of mouse Hepa 1-6 cells. Individual bars represent average mouse KRAS levels observed in triplicate, with standard errors shown. Mouse KRAS levels were normalized to HPRT and Rpl23 levels.

DETAILED DESCRIPTION OF THE INVENTION

The present invention is directed to compositions that contain double stranded RNA ("dsRNA"), and methods for preparing them, that are capable of reducing the level and/or expression of the KRAS gene *in vivo* or *in vitro*. One of the strands of the dsRNA contains a region of nucleotide sequence that has a length that ranges from 19 to 35 nucleotides that can direct the destruction and/or translational inhibition of the targeted KRAS transcript.

Definitions

Unless defined otherwise, all technical and scientific terms used herein have the meaning commonly understood by a person skilled in the art to which this invention belongs. The following references provide one of skill with a general definition of many of the terms used in this invention: Singleton *et al.*, Dictionary of Microbiology and Molecular Biology (2nd ed. 1994); The Cambridge Dictionary of Science and Technology (Walker ed., 1988); The Glossary of Genetics, 5th Ed., R. Rieger et al. (eds.), Springer Verlag (1991); and Hale & Marham, The Harper Collins Dictionary of Biology (1991). As used herein, the following terms have the meanings ascribed to them below, unless specified otherwise.

The present invention features one or more DsiRNA molecules that can modulate (e.g., inhibit) KRAS expression. The DsiRNAs of the invention optionally can be used in combination with modulators of other genes and/or gene products associated with the maintenance or development of diseases or disorders associated with KRAS misregulation (*e.g.*, tumor formation and/or growth, etc.). The DsiRNA agents of the invention modulate KRAS RNAs such as those corresponding to the cDNA sequences referred to by GenBank Accession Nos. NM_033360 and NM_004985, which are recited below and referred to herein generally as "KRAS."

The below description of the various aspects and embodiments of the invention is provided with reference to exemplary KRAS RNAs, generally referred to herein as KRAS. However, such reference is meant to be exemplary only and the various aspects and embodiments of the invention are also directed to alternate KRAS RNAs, such as mutant KRAS RNAs or additional KRAS splice variants. Certain aspects and embodiments are also directed to other genes involved in KRAS pathways, including genes whose misregulation acts in association with that of KRAS (or is affected or affects KRAS regulation) to produce phenotypic effects that may be targeted for treatment (*e.g.*, tumor formation and/or growth, etc.). Such additional genes can be targeted using DsiRNA and the methods described herein

for use of KRAS targeting DsiRNAs. Thus, the inhibition and the effects of such inhibition of the other genes can be performed as described herein.

The term "KRAS" refers to nucleic acid sequences encoding a KRas protein, peptide, or polypeptide (*e.g.*, KRAS transcripts, such as the sequences of KRAS Genbank Accession Nos. NM_033360.2 and NM_004985.3). In certain embodiments, the term "KRAS" is also meant to include other KRAS encoding sequence, such as other KRAS isoforms, mutant KRAS genes, splice variants of KRAS genes, and KRAS gene polymorphisms. The term "Kras" is used to refer to the polypeptide gene product of a KRAS gene/transript, *e.g.*, a Kras protein, peptide, or polypeptide, such as those encoded by KRAS Genbank Accession Nos. NM_033360.2 and NM_004985.3.

As used herein, a "KRAS-associated disease or disorder" refers to a disease or disorder known in the art to be associated with altered KRAS expression, level and/or activity. Notably, a "KRAS-associated disease or disorder" includes cancer and/or proliferative diseases, conditions, or disorders.

By "proliferative disease" or "cancer" as used herein is meant, a disease, condition, trait, genotype or phenotype characterized by unregulated cell growth or replication as is known in the art; including leukemias, for example, acute myelogenous leukemia (AML), chronic myelogenous leukemia (CML), acute lymphocytic leukemia (ALL), and chronic lymphocytic leukemia, AIDS related cancers such as Kaposi's sarcoma; breast cancers; bone cancers such as Osteosarcoma, Chondrosarcomas, Ewing's sarcoma, Fibrosarcomas, Giant cell tumors, Adamantinomas, and Chordomas; Brain cancers such as Meningiomas, Glioblastomas, Lower-Grade Astrocytomas, Oligodendrocytomas, Pituitary Tumors, Schwannomas, and Metastatic brain cancers; cancers of the head and neck including various lymphomas such as mantle cell lymphoma, non-Hodgkins lymphoma, adenoma, squamous cell carcinoma, laryngeal carcinoma, gallbladder and bile duct cancers, cancers of the retina such as retinoblastoma, cancers of the esophagus, gastric cancers, multiple myeloma, ovarian cancer, uterine cancer, thyroid cancer, testicular cancer, endometrial cancer, melanoma, colorectal cancer, lung cancer, bladder cancer, prostate cancer, lung cancer (including non-small cell lung carcinoma), pancreatic cancer, sarcomas, Wilms' tumor, cervical cancer, head and neck cancer, skin cancers, nasopharyngeal carcinoma, liposarcoma, epithelial carcinoma, renal cell carcinoma, gallbladder adeno carcinoma, parotid adenocarcinoma, endometrial sarcoma, multidrug resistant cancers; and proliferative diseases and conditions, such as neovascularization associated with tumor angiogenesis, macular degeneration (e.g., wet/dry AMD), corneal neovascularization, diabetic retinopathy, neovascular glaucoma, myopic

degeneration and other proliferative diseases and conditions such as restenosis and polycystic kidney disease, and other cancer or proliferative disease, condition, trait, genotype or phenotype that can respond to the modulation of disease related gene expression in a cell or tissue, alone or in combination with other therapies.

In certain embodiments, DsiRNA-mediated inhibition of a KRAS target sequence is assessed. In such embodiments, KRAS RNA levels can be assessed by art-recognized methods (*e.g.*, RT-PCR, Northern blot, expression array, etc.), optionally *via* comparison of KRAS levels in the presence of an anti-KRAS DsiRNA of the invention relative to the absence of such an anti-KRAS DsiRNA. In certain embodiments, KRAS levels in the presence of an anti-KRAS DsiRNA are compared to those observed in the presence of vehicle alone, in the presence of a DsiRNA directed against an unrelated target RNA, or in the absence of any treatment. It is also recognized that levels of Kras protein can be assessed as indicative of KRAS RNA levels and/or the extent to which a DsiRNA inhibits KRAS expression, thus art-recognized methods of assessing KRAS protein levels (*e.g.*, Western blot, immunoprecipitation, other antibody-based methods, etc.) can also be employed to examine the inhibitory effect of a DsiRNA of the invention. An anti-KRAS DsiRNA of the invention is deemed to possess "KRAS inhibitory activity" if a statistically significant reduction in KRAS RNA or protein levels is seen when an anti-KRAS DsiRNA of the invention is administered to a system (*e.g.*, cell-free *in vitro* system), cell, tissue or organism, as compared to an appropriate control. The distribution of experimental values and the number of replicate assays performed will tend to dictate the parameters of what levels of reduction in KRAS RNA or protein (either as a % or in absolute terms) is deemed statistically significant (as assessed by standard methods of determining statistical significance known in the art). However, in certain embodiments, "KRAS inhibitory activity" is defined based upon a % or absolute level of reduction in the level of KRAS in a system, cell, tissue or organism. For example, in certain embodiments, a DsiRNA of the invention is deemed to possess KRAS inhibitory activity if at least a 5% reduction or at least a 10% reduction in KRAS RNA is observed in the presence of a DsiRNA of the invention relative to KRAS levels seen for a suitable control. (For example, *in vivo* KRAS levels in a tissue and/or subject can, in certain embodiments, be deemed to be inhibited by a DsiRNA agent of the invention if, *e.g.*, a 5% or 10% reduction in KRAS levels is observed relative to a control.) In certain other embodiments, a DsiRNA of the invention is deemed to possess KRAS inhibitory activity if KRAS RNA levels are observed to be reduced by at least 15% relative to an appropriate control, by at least 20% relative to an appropriate control, by at least 25% relative to an

appropriate control, by at least 30% relative to an appropriate control, by at least 35% relative to an appropriate control, by at least 40% relative to an appropriate control, by at least 45% relative to an appropriate control, by at least 50% relative to an appropriate control, by at least 55% relative to an appropriate control, by at least 60% relative to an appropriate control, by at least 65% relative to an appropriate control, by at least 70% relative to an appropriate control, by at least 75% relative to an appropriate control, by at least 80% relative to an appropriate control, by at least 85% relative to an appropriate control, by at least 90% relative to an appropriate control, by at least 95% relative to an appropriate control, by at least 96% relative to an appropriate control, by at least 97% relative to an appropriate control, by at least 98% relative to an appropriate control or by at least 99% relative to an appropriate control. In some embodiments, complete inhibition of KRAS is required for a DsiRNA to be deemed to possess KRAS inhibitory activity. In certain models (*e.g.*, cell culture), a DsiRNA is deemed to possess KRAS inhibitory activity if at least a 50% reduction in KRAS levels is observed relative to a suitable control. In certain other embodiments, a DsiRNA is deemed to possess KRAS inhibitory activity if at least an 80% reduction in KRAS levels is observed relative to a suitable control.

KRAS inhibitory activity can also be evaluated over time (duration) and over concentration ranges (potency), with assessment of what constitutes a DsiRNA possessing KRAS inhibitory activity adjusted in accordance with concentrations administered and duration of time following administration. Thus, in certain embodiments, a DsiRNA of the invention is deemed to possess KRAS inhibitory activity if at least a 50% reduction in KRAS activity is observed at a duration of time of 2 hours, 5 hours, 10 hours, 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days, 8 days, 9 days, 10 days or more after administration is observed/persists. In additional embodiments, a DsiRNA of the invention is deemed to be a potent KRAS inhibitory agent if KRAS inihibitory activity (*e.g.*, in certain embodiments, at least 50% inhibition of KRAS) is observed at a concentration of 1 nM or less, 500 pM or less, 200 pM or less, 100 pM or less, 50 pM or less, 20 pM or less, 10 pM or less, 5 pM or less, 2 pM or less or even 1 pM or less in the environment of a cell.

In certain embodiments, the phrase "consists essentially of" is used in reference to the anti-KRAS DsiRNAs of the invention. In some such embodiments, "consists essentially of" refers to a composition that comprises a DsiRNA of the invention which possesse at least a certain level of KRAS inhibitory activity (*e.g.*, at least 50% KRAS inhibitory activity) and that also comprises one or more additional components and/or modifications that do not significantly impact the KRAS inhibitory activity of the DsiRNA. For example, in certain

embodiments, a composition "consists essentially of" a DsiRNA of the invention where modifications of the DsiRNA of the invention and/or DsiRNA-associated components of the composition do not alter the KRAS inhibitory activity (optionally including potency or duration of KRAS inhibitory activity) by greater than 3%, greater than 5%, greater than 10%, greater than 15%, greater than 20%, greater than 25%, greater than 30%, greater than 35%, greater than 40%, greater than 45%, or greater than 50% relative to the DsiRNA of the invention in isolation. In certain embodiments, a composition is deemed to consist essentially of a DsiRNA of the invention even if more dramatic reduction of KRAS inhibitory activity (e.g., 80% reduction, 90% reduction, etc. in efficacy, duration and/or potency) occurs in the presence of additional components or modifications, yet where KRAS inhibitory activity is not significantly elevated (*e.g.*, observed levels of KRAS inhibitory activity are within 10% those observed for the isolated DsiRNA of the invention) in the presence of additional components and/or modifications.

As used herein, the term "nucleic acid" refers to deoxyribonucleotides, ribonucleotides, or modified nucleotides, and polymers thereof in single- or double-stranded form. The term encompasses nucleic acids containing known nucleotide analogs or modified backbone residues or linkages, which are synthetic, naturally occurring, and non-naturally occurring, which have similar binding properties as the reference nucleic acid, and which are metabolized in a manner similar to the reference nucleotides. Examples of such analogs include, without limitation, phosphorothioates, phosphoramidates, methyl phosphonates, chiral-methyl phosphonates, 2-O-methyl ribonucleotides, peptide-nucleic acids (PNAs).

As used herein, "nucleotide" is used as recognized in the art to include those with natural bases (standard), and modified bases well known in the art. Such bases are generally located at the 1' position of a nucleotide sugar moiety. Nucleotides generally comprise a base, sugar and a phosphate group. The nucleotides can be unmodified or modified at the sugar, phosphate and/or base moiety, (also referred to interchangeably as nucleotide analogs, modified nucleotides, non-natural nucleotides, non-standard nucleotides and other; see, e.g., Usman and McSwiggen, supra; Eckstein, et al., International PCT Publication No. WO 92/07065; Usman et al, International PCT Publication No. WO 93/15187).

There are several examples of modified nucleic acid bases known in the art as summarized by Limbach, et al, Nucleic Acids Res. 22:2183, 1994. Some of the non-limiting examples of base modifications that can be introduced into nucleic acid molecules include, hypoxanthine, purine, pyridin-4-one, pyridin-2-one, phenyl, pseudouracil, 2,4,6-trimethoxy benzene, 3-methyl uracil,

dihydrouridine, naphthyl, aminophenyl, 5-alkylcytidines (e.g., 5-methylcytidine), 5-alkyluridines (e.g., ribothymidine), 5-halouridine (e.g., 5-bromouridine) or 6-azapyrimidines or 6-alkylpyrimidines (e.g. 6-methyluridine), propyne, and others (Burgin, et al., Biochemistry 35:14090, 1996; Uhlman & Peyman, supra). By "modified bases" in this aspect is meant nucleotide bases other than adenine, guanine, cytosine and uracil at 1' position or their equivalents.

As used herein, "modified nucleotide" refers to a nucleotide that has one or more modifications to the nucleoside, the nucleobase, pentose ring, or phosphate group. For example, modified nucleotides exclude ribonucleotides containing adenosine monophosphate, guanosine monophosphate, uridine monophosphate, and cytidine monophosphate and deoxyribonucleotides containing deoxyadenosine monophosphate, deoxyguanosine monophosphate, deoxythymidine monophosphate, and deoxycytidine monophosphate. Modifications include those naturally occuring that result from modification by enzymes that modify nucleotides, such as methyltransferases. Modified nucleotides also include synthetic or non-naturally occurring nucleotides. Synthetic or non-naturally occurring modifications in nucleotides include those with 2' modifications, e.g., 2'-methoxyethoxy, 2'-fluoro, 2'-allyl, 2'-O-[2-(methylamino)-2-oxoethyl], 4'-thio, 4'-CH_2-O-2'-bridge, 4'-$(CH_2)_2$-O-2'-bridge, 2'-LNA, and 2'-O-(N-methylcarbamate) or those comprising base analogs. In connection with 2'-modified nucleotides as described for the present disclosure, by "amino" is meant 2'-NH_2 or 2'-O-NH_2, which can be modified or unmodified. Such modified groups are described, *e.g.*, in Eckstein *et al.*, U.S. Pat. No. 5,672,695 and Matulic-Adamic *et al.*, U.S. Pat. No. 6,248,878.

In reference to the nucleic acid molecules of the present disclosure, modifications may exist upon these agents in patterns on one or both strands of the double stranded ribonucleic acid (dsRNA). As used herein, "alternating positions" refers to a pattern where every other nucleotide is a modified nucleotide or there is an unmodified nucleotide (*e.g.*, an unmodified ribonucleotide) between every modified nucleotide over a defined length of a strand of the dsRNA (*e.g.*, 5'-MNMNMN-3'; 3'-MNMNMN-5'; where M is a modified nucleotide and N is an unmodified nucleotide). The modification pattern starts from the first nucleotide position at either the 5' or 3' terminus according to a position numbering convention, e.g., as described herein (in certain embodiments, position 1 is designated in reference to the terminal residue of a strand following a projected Dicer cleavage event of a DsiRNA agent of the invention; thus, position 1 does not always constitute a 3' terminal or 5' terminal residue of a pre-processed agent of the invention). The pattern of modified

nucleotides at alternating positions may run the full length of the strand, but in certain embodiments includes at least 4, 6, 8, 10, 12, 14 nucleotides containing at least 2, 3, 4, 5, 6 or 7 modified nucleotides, respectively. As used herein, "alternating pairs of positions" refers to a pattern where two consecutive modified nucleotides are separated by two consecutive unmodified nucleotides over a defined length of a strand of the dsRNA (e.g., 5'-MMNNMMNNMMNN-3'; 3'-MMNNMMNNMMNN-5'; where M is a modified nucleotide and N is an unmodified nucleotide). The modification pattern starts from the first nucleotide position at either the 5' or 3' terminus according to a position numbering convention such as those described herein. The pattern of modified nucleotides at alternating positions may run the full length of the strand, but preferably includes at least 8, 12, 16, 20, 24, 28 nucleotides containing at least 4, 6, 8, 10, 12 or 14 modified nucleotides, respectively. It is emphasized that the above modification patterns are exemplary and are not intended as limitations on the scope of the invention.

As used herein, "base analog" refers to a heterocyclic moiety which is located at the 1' position of a nucleotide sugar moiety in a modified nucleotide that can be incorporated into a nucleic acid duplex (or the equivalent position in a nucleotide sugar moiety substitution that can be incorporated into a nucleic acid duplex). In the dsRNAs of the invention, a base analog is generally either a purine or pyrimidine base excluding the common bases guanine (G), cytosine (C), adenine (A), thymine (T), and uracil (U). Base analogs can duplex with other bases or base analogs in dsRNAs. Base analogs include those useful in the compounds and methods of the invention., e.g., those disclosed in US Pat. Nos. 5,432,272 and 6,001,983 to Benner and US Patent Publication No. 20080213891 to Manoharan.

Non-limiting examples of bases include hypoxanthine (I), xanthine (X), 3β-D-ribofuranosyl-(2,6-diaminopyrimidine) (K), 3-β-D-ribofuranosyl-(1-methyl-pyrazolo[4,3-d]pyrimidine-5,7(4H,6H)-dione) (P), iso-cytosine (iso-C), iso-guanine (iso-G), 1-β-D-ribofuranosyl-(5-nitroindole), 1-β-D-ribofuranosyl-(3-nitropyrrole), 5-bromouracil, 2-aminopurine, 4-thio-dT, 7-(2-thienyl)-imidazo[4,5-b]pyridine (Ds) and pyrrole-2-carbaldehyde (Pa), 2-amino-6-(2-thienyl)purine (S), 2-oxopyridine (Y), difluorotolyl, 4-fluoro-6-methylbenzimidazole, 4-methylbenzimidazole, 3-methyl isocarbostyrilyl, 5-methyl isocarbostyrilyl, and 3-methyl-7-propynyl isocarbostyrilyl, 7-azaindolyl, 6-methyl-7-azaindolyl, imidizopyridinyl, 9-methyl-imidizopyridinyl, pyrrolopyrizinyl, isocarbostyrilyl, 7-propynyl isocarbostyrilyl, propynyl-7-azaindolyl, 2,4,5-trimethylphenyl, 4-methylindolyl, 4,6-dimethylindolyl, phenyl, napthalenyl, anthracenyl, phenanthracenyl, pyrenyl, stilbenzyl, tetracenyl, pentacenyl, and structural derivates thereof

(Schweitzer et al., J. Org. Chem., 59:7238-7242 (1994); Berger et al., Nucleic Acids Research, 28(15):2911-2914 (2000); Moran et al., J. Am. Chem. Soc., 119:2056-2057 (1997); Morales et al., J. Am. Chem. Soc., 121:2323-2324 (1999); Guckian et al., J. Am. Chem. Soc., 118:8182-8183 (1996); Morales et al., J. Am. Chem. Soc., 122(6):1001-1007 (2000); McMinn et al., J. Am. Chem. Soc., 121:11585-11586 (1999); Guckian et al., J. Org. Chem., 63:9652-9656 (1998); Moran et al., Proc. Natl. Acad. Sci., 94:10506-10511 (1997); Das et al., J. Chem. Soc., Perkin Trans., 1:197-206 (2002); Shibata et al., J. Chem. Soc., Perkin Trans., 1: 1605-1611 (2001); Wu et al., J. Am. Chem. Soc., 122(32):7621-7632 (2000); O'Neill et al., J. Org. Chem., 67:5869-5875 (2002); Chaudhuri et al., J. Am. Chem. Soc., 117:10434-10442 (1995); and U.S. Pat. No. 6,218,108.). Base analogs may also be a universal base.

As used herein, "universal base" refers to a heterocyclic moiety located at the 1' position of a nucleotide sugar moiety in a modified nucleotide, or the equivalent position in a nucleotide sugar moiety substitution, that, when present in a nucleic acid duplex, can be positioned opposite more than one type of base without altering the double helical structure (e.g., the structure of the phosphate backbone). Additionally, the universal base does not destroy the ability of the single stranded nucleic acid in which it resides to duplex to a target nucleic acid. The ability of a single stranded nucleic acid containing a universal base to duplex a target nucleic can be assayed by methods apparent to one in the art (*e.g.*, UV absorbance, circular dichroism, gel shift, single stranded nuclease sensitivity, etc.). Additionally, conditions under which duplex formation is observed may be varied to determine duplex stability or formation, *e.g.*, temperature, as melting temperature (Tm) correlates with the stability of nucleic acid duplexes. Compared to a reference single stranded nucleic acid that is exactly complementary to a target nucleic acid, the single stranded nucleic acid containing a universal base forms a duplex with the target nucleic acid that has a lower Tm than a duplex formed with the complementary nucleic acid. However, compared to a reference single stranded nucleic acid in which the universal base has been replaced with a base to generate a single mismatch, the single stranded nucleic acid containing the universal base forms a duplex with the target nucleic acid that has a higher Tm than a duplex formed with the nucleic acid having the mismatched base.

Some universal bases are capable of base pairing by forming hydrogen bonds between the universal base and all of the bases guanine (G), cytosine (C), adenine (A), thymine (T), and uracil (U) under base pair forming conditions. A universal base is not a base that forms a base pair with only one single complementary base. In a duplex, a universal base may form

no hydrogen bonds, one hydrogen bond, or more than one hydrogen bond with each of G, C, A, T, and U opposite to it on the opposite strand of a duplex. Preferably, the universal bases does not interact with the base opposite to it on the opposite strand of a duplex. In a duplex, base pairing between a universal base occurs without altering the double helical structure of the phosphate backbone. A universal base may also interact with bases in adjacent nucleotides on the same nucleic acid strand by stacking interactions. Such stacking interactions stabilize the duplex, especially in situations where the universal base does not form any hydrogen bonds with the base positioned opposite to it on the opposite strand of the duplex. Non-limiting examples of universal-binding nucleotides include inosine, 1-β-D-ribofuranosyl-5-nitroindole, and/or 1-β-D-ribofuranosyl-3-nitropyrrole (US Pat. Appl. Publ. No. 20070254362 to Quay et al.; Van Aerschot et al., An acyclic 5-nitroindazole nucleoside analogue as ambiguous nucleoside. Nucleic Acids Res. 1995 Nov 11;23(21):4363-70; Loakes et al., 3-Nitropyrrole and 5-nitroindole as universal bases in primers for DNA sequencing and PCR. Nucleic Acids Res. 1995 Jul 11;23(13):2361-6; Loakes and Brown, 5-Nitroindole as an universal base analogue. Nucleic Acids Res. 1994 Oct 11;22(20):4039-43).

As used herein, "loop" refers to a structure formed by a single strand of a nucleic acid, in which complementary regions that flank a particular single stranded nucleotide region hybridize in a way that the single stranded nucleotide region between the complementary regions is excluded from duplex formation or Watson-Crick base pairing. A loop is a single stranded nucleotide region of any length. Examples of loops include the unpaired nucleotides present in such structures as hairpins, stem loops, or extended loops.

As used herein, "extended loop" in the context of a dsRNA refers to a single stranded loop and in addition 1, 2, 3, 4, 5, 6 or up to 20 base pairs or duplexes flanking the loop. In an extended loop, nucleotides that flank the loop on the 5' side form a duplex with nucleotides that flank the loop on the 3' side. An extended loop may form a hairpin or stem loop.

As used herein, "tetraloop" in the context of a dsRNA refers to a loop (a single stranded region) consisting of four nucleotides that forms a stable secondary structure that contributes to the stability of an adjacent Watson-Crick hybridized nucleotides. Without being limited to theory, a tetraloop may stabilize an adjacent Watson-Crick base pair by stacking interactions. In addition, interactions among the four nucleotides in a tetraloop include but are not limited to non-Watson-Crick base pairing, stacking interactions, hydrogen bonding, and contact interactions (Cheong *et al.*, *Nature* 1990 Aug 16;346(6285):680-2; Heus and Pardi, *Science* 1991 Jul 12;253(5016):191-4). A tetraloop confers an increase in the melting temperature (Tm) of an adjacent duplex that is higher than expected from a simple

model loop sequence consisting of four random bases. For example, a tetraloop can confer a melting temperature of at least 55°C in 10mM $NaHPO_4$ to a hairpin comprising a duplex of at least 2 base pairs in length. A tetraloop may contain ribonucleotides, deoxyribonucleotides, modified nucleotides, and combinations thereof. Examples of RNA tetraloops include the UNCG family of tetraloops (e.g., UUCG), the GNRA family of tetraloops (e.g., GAAA), and the CUUG tetraloop. (Woese et al., Proc Natl Acad Sci U S A. 1990 Nov;87(21):8467-71; Antao et al., Nucleic Acids Res. 1991 Nov 11;19(21):5901-5). Examples of DNA tetraloops include the d(GNNA) family of tetraloops (e.g., d(GTTA), the d(GNRA)) family of tetraloops, the d(GNAB) family of tetraloops, the d(CNNG) family of tetraloops, the d(TNCG) family of tetraloops (e.g., d(TTCG)). (Nakano et al. Biochemistry, 41 (48), 14281 -14292, 2002.; SHINJI et al. Nippon Kagakkai Koen Yokoshu VOL.78th; NO.2; PAGE.731 (2000).)

As used herein, the term "siRNA" refers to a double stranded nucleic acid in which each strand comprises RNA, RNA analog(s) or RNA and DNA. The siRNA comprises between 19 and 23 nucleotides or comprises 21 nucleotides. The siRNA typically has 2 bp overhangs on the 3' ends of each strand such that the duplex region in the siRNA comprises 17-21 nucleotides, or 19 nucleotides. Typically, the antisense strand of the siRNA is sufficiently complementary with the target sequence of the KRAS gene/RNA.

An anti-KRAS DsiRNA of the instant invention possesses strand lengths of at least 25 nucleotides. Accordingly, an anti-KRAS DsiRNA contains one oligonucleotide sequence, a first sequence, that is at least 25 nucleotides in length and no longer than 35 or up to 50 nucleotides. This sequence of RNA can be between 26 and 35, 26 and 34, 26 and 33, 26 and 32, 26 and 31, 26 and 30, and 26 and 29 nucleotides in length. This sequence can be 27 or 28 nucleotides in length or 27 nucleotides in length. The second sequence of the DsiRNA agent can be a sequence that anneals to the first sequence under biological conditions, such as within the cytoplasm of a eukaryotic cell. Generally, the second oligonucleotide sequence will have at least 19 complementary base pairs with the first oligonucleotide sequence, more typically the second oligonucleotide sequence will have 21 or more complementary base pairs, or 25 or more complementary base pairs with the first oligonucleotide sequence. In one embodiment, the second sequence is the same length as the first sequence, and the DsiRNA agent is blunt ended. In another embodiment, the ends of the DsiRNA agent have one or more overhangs.

In certain embodiments, the first and second oligonucleotide sequences of the DsiRNA agent exist on separate oligonucleotide strands that can be and typically are

chemically synthesized. In some embodiments, both strands are between 26 and 35 nucleotides in length. In other embodiments, both strands are between 25 and 30 or 26 and 30 nucleotides in length. In one embodiment, both strands are 27 nucleotides in length, are completely complementary and have blunt ends. In certain embodiments of the instant invention, the first and second sequences of an anti-KRAS DsiRNA exist on separate RNA oligonucleotides (strands). In one embodiment, one or both oligonucleotide strands are capable of serving as a substrate for Dicer. In other embodiments, at least one modification is present that promotes Dicer to bind to the double-stranded RNA structure in an orientation that maximizes the double-stranded RNA structure's effectiveness in inhibiting gene expression. In certain embodiments of the instant invention, the anti-KRAS DsiRNA agent is comprised of two oligonucleotide strands of differing lengths, with the anti-KRAS DsiRNA possessing a blunt end at the 3' terminus of a first strand (sense strand) and a 3' overhang at the 3' terminus of a second strand (antisense strand). The DsiRNA can also contain one or more deoxyribonucleic acid (DNA) base substitutions.

Suitable DsiRNA compositions that contain two separate oligonucleotides can be chemically linked outside their annealing region by chemical linking groups. Many suitable chemical linking groups are known in the art and can be used. Suitable groups will not block Dicer activity on the DsiRNA and will not interfere with the directed destruction of the RNA transcribed from the target gene. Alternatively, the two separate oligonucleotides can be linked by a third oligonucleotide such that a hairpin structure is produced upon annealing of the two oligonucleotides making up the DsiRNA composition. The hairpin structure will not block Dicer activity on the DsiRNA and will not interfere with the directed destruction of the target RNA.

As used herein, a dsRNA, *e.g.*, DsiRNA or siRNA, having a sequence "sufficiently complementary" to a target RNA or cDNA sequence (*e.g.*, KRAS mRNA) means that the dsRNA has a sequence sufficient to trigger the destruction of the target RNA (where a cDNA sequence is recited, the RNA sequence corresponding to the recited cDNA sequence) by the RNAi machinery (*e.g.*, the RISC complex) or process. The dsRNA molecule can be designed such that every residue of the antisense strand is complementary to a residue in the target molecule. Alternatively, substitutions can be made within the molecule to increase stability and/or enhance processing activity of said molecule. Substitutions can be made within the strand or can be made to residues at the ends of the strand. In certain embodiments, substitutions and/or modifications are made at specific residues within a DsiRNA agent. Such substitutions and/or modifications can include, *e.g.*, deoxy- modifications at one or

more residues of positions 1, 2 and 3 when numbering from the 3' terminal position of the sense strand of a DsiRNA agent; and introduction of 2'-O-alkyl (e.g., 2'-O-methyl) modifications at the 3' terminal residue of the antisense strand of DsiRNA agents, with such modifications also being performed at overhang positions of the 3' portion of the antisense strand and at alternating residues of the antisense strand of the DsiRNA that are included within the region of a DsiRNA agent that is processed to form an active siRNA agent. The preceding modifications are offered as exemplary, and are not intended to be limiting in any manner. Further consideration of the structure of preferred DsiRNA agents, including further description of the modifications and substitutions that can be performed upon the anti-KRAS DsiRNA agents of the instant invention, can be found below.

The phrase "duplex region" refers to the region in two complementary or substantially complementary oligonucleotides that form base pairs with one another, either by Watson-Crick base pairing or other manner that allows for a duplex between oligonucleotide strands that are complementary or substantially complementary. For example, an oligonucleotide strand having 21 nucleotide units can base pair with another oligonucleotide of 21 nucleotide units, yet only 19 bases on each strand are complementary or substantially complementary, such that the "duplex region" consists of 19 base pairs. The remaining base pairs may, for example, exist as 5' and 3' overhangs. Further, within the duplex region, 100% complementarity is not required; substantial complementarity is allowable within a duplex region. Substantial complementarity refers to complementarity between the strands such that they are capable of annealing under biological conditions. Techniques to empirically determine if two strands are capable of annealing under biological conditions are well know in the art. Alternatively, two strands can be synthesized and added together under biological conditions to determine if they anneal to one another.

Single-stranded nucleic acids that base pair over a number of bases are said to "hybridize." Hybridization is typically determined under physiological or biologically relevant conditions (e.g., intracellular: pH 7.2, 140 mM potassium ion; extracellular pH 7.4, 145 mM sodium ion). Hybridization conditions generally contain a monovalent cation and biologically acceptable buffer and may or may not contain a divalent cation, complex anions, e.g. gluconate from potassium gluconate, uncharged species such as sucrose, and inert polymers to reduce the activity of water in the sample, *e.g.* PEG. Such conditions include conditions under which base pairs can form.

Hybridization is measured by the temperature required to dissociate single stranded nucleic acids forming a duplex, *i.e.*, (the melting temperature; Tm). Hybridization conditions

are also conditions under which base pairs can form. Various conditions of stringency can be used to determine hybridization (see, e.g., Wahl, G. M. and S. L. Berger (1987) Methods Enzymol. 152:399; Kimmel, A. R. (1987) Methods Enzymol. 152:507). Stringent temperature conditions will ordinarily include temperatures of at least about 30° C, more preferably of at least about 37° C, and most preferably of at least about 42° C. The hybridization temperature for hybrids anticipated to be less than 50 base pairs in length should be 5-10°C less than the melting temperature (Tm) of the hybrid, where Tm is determined according to the following equations. For hybrids less than 18 base pairs in length, Tm(°C)=2(# of A+T bases)+4(# of G+C bases). For hybrids between 18 and 49 base pairs in length, Tm(°C)=81.5+16.6(log 10[Na+])+0.41 (% G+C)-(600/N), where N is the number of bases in the hybrid, and [Na+] is the concentration of sodium ions in the hybridization buffer ([Na+] for 1xSSC=0.165 M). For example, a hybridization determination buffer is shown in Table 1.

Table 1.

	final conc.	Vender	Cat#	Lot#	m.w./Stock	To make 50 mL solution
NaCl	100 mM	Sigma	S-5150	41K8934	5M	1 mL
KCl	80 mM	Sigma	P-9541	70K0002	74.55	0.298 g
$MgCl_2$	8 mM	Sigma	M-1028	120K8933	1M	0.4 mL
sucrose	2% w/v	Fisher	BP220-212	907105	342.3	1 g
Tris-HCl	16 mM	Fisher	BP1757-500	12419	1M	0.8 mL
NaH_2PO_4	1 mM	Sigma	S-3193	52H-029515	120.0	0.006 g
EDTA	0.02 mM	Sigma	E-7889	110K89271	0.5M	2 µL
H_2O		Sigma	W-4502	51K2359		to 50 mL
pH = 7.0 at 20°C	adjust with HCl					

Useful variations on hybridization conditions will be readily apparent to those skilled in the art. Hybridization techniques are well known to those skilled in the art and are described, for example, in Benton and Davis (Science 196:180, 1977); Grunstein and Hogness (Proc. Natl. Acad. Sci., USA 72:3961, 1975); Ausubel et al. (Current Protocols in Molecular Biology, Wiley Interscience, New York, 2001); Berger and Kimmel (Antisense to Molecular Cloning Techniques, 1987, Academic Press, New York); and Sambrook et al., Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory Press, New York.

As used herein, "oligonucleotide strand" is a single stranded nucleic acid molecule. An oligonucleotide may comprise ribonucleotides, deoxyribonucleotides, modified nucleotides (*e.g.*, nucleotides with 2' modifications, synthetic base analogs, etc.) or

combinations thereof. Such modified oligonucleotides can be preferred over native forms because of properties such as, for example, enhanced cellular uptake and increased stability in the presence of nucleases.

As used herein, the term "ribonucleotide" encompasses natural and synthetic, unmodified and modified ribonucleotides. Modifications include changes to the sugar moiety, to the base moiety and/or to the linkages between ribonucleotides in the oligonucleotide. As used herein, the term "ribonucleotide" specifically excludes a deoxyribonucleotide, which is a nucleotide possessing a single proton group at the 2' ribose ring position.

As used herein, the term "deoxyribonucleotide" encompasses natural and synthetic, unmodified and modified deoxyribonucleotides. Modifications include changes to the sugar moiety, to the base moiety and/or to the linkages between deoxyribonucleotide in the oligonucleotide. As used herein, the term "deoxyribonucleotide" also includes a modified ribonucleotide that does not permit Dicer cleavage of a dsRNA agent, *e.g.*, a 2'-O-methyl ribonucleotide, a phosphorothioate-modified ribonucleotide residue, etc., that does not permit Dicer cleavage to occur at a bond of such a residue.

As used herein, the term "PS-NA" refers to a phosphorothioate-modified nucleotide residue. The term "PS-NA" therefore encompasses both phosphorothioate-modified ribonucleotides ("PS-RNAs") and phosphorothioate-modified deoxyribonucleotides ("PS-DNAs").

As used herein, "Dicer" refers to an endoribonuclease in the RNase III family that cleaves a dsRNA or dsRNA-containing molecule, *e.g.*, double-stranded RNA (dsRNA) or pre-microRNA (miRNA), into double-stranded nucleic acid fragments 19-25 nucleotides long, usually with a two-base overhang on the 3' end. With respect to the dsRNAs of the invention, the duplex formed by a dsRNA region of an agent of the invention is recognized by Dicer and is a Dicer substrate on at least one strand of the duplex. Dicer catalyzes the first step in the RNA interference pathway, which consequently results in the degradation of a target RNA. The protein sequence of human Dicer is provided at the NCBI database under accession number NP_085124.

Dicer "cleavage" is determined as follows (*e.g.*, see Collingwood *et al.*, Oligonucleotides 18:187–200 (2008)). In a Dicer cleavage assay, RNA duplexes (100 pmol) are incubated in 20 μL of 20 mM Tris pH 8.0, 200 mM NaCl, 2.5 mM MgCl2 with or without 1 unit of recombinant human Dicer (Stratagene, La Jolla, CA) at 37°C for 18–24 hours. Samples are desalted using a Performa SR 96-well plate (Edge Biosystems, Gaithersburg,

MD). Electrospray-ionization liquid chromatography mass spectroscopy (ESI-LCMS) of duplex RNAs pre- and post-treatment with Dicer is done using an Oligo HTCS system (Novatia, Princeton, NJ; Hail et al., 2004), which consists of a ThermoFinnigan TSQ7000, Xcalibur data system, ProMass data processing software and Paradigm MS4 HPLC (Michrom BioResources, Auburn, CA). In this assay, Dicer cleavage occurs where at least 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 95%, or even 100% of the Dicer substrate dsRNA, (i.e., 25-30 bp, dsRNA, preferably 26-30 bp dsRNA) is cleaved to a shorter dsRNA (e.g., 19-23 bp dsRNA, preferably, 21-23 bp dsRNA).

As used herein, "Dicer cleavage site" refers to the sites at which Dicer cleaves a dsRNA (e.g., the dsRNA region of a DsiRNA agent of the invention). Dicer contains two RNase III domains which typically cleave both the sense and antisense strands of a dsRNA. The average distance between the RNase III domains and the PAZ domain determines the length of the short double-stranded nucleic acid fragments it produces and this distance can vary (*Macrae I, et al. (2006). "Structural basis for double-stranded RNA processing by Dicer".* Science *311 (5758): 195–8.*). As shown in Figures 1 and 4, Dicer is projected to cleave certain double-stranded ribonucleic acids of the instant invention that possess an antisense strand having a 2 nucleotide 3' overhang at a site between the 21st and 22nd nucleotides removed from the 3' terminus of the antisense strand, and at a corresponding site between the 21st and 22nd nucleotides removed from the 5' terminus of the sense strand. The projected and/or prevalent Dicer cleavage site(s) for dsRNA molecules distinct from those depicted in Figures 1 and 4 may be similarly identified *via* art-recognized methods, including those described in Macrae *et al.* While the Dicer cleavage events depicted in Figures 1 and 4 generate 21 nucleotide siRNAs, it is noted that Dicer cleavage of a dsRNA (*e.g.*, DsiRNA) can result in generation of Dicer-processed siRNA lengths of 19 to 23 nucleotides in length. Indeed, in certain embodiments, a double-stranded DNA region may be included within a dsRNA for purpose of directing prevalent Dicer excision of a typically non-preferred 19mer or 20mer siRNA, rather than a 21mer.

As used herein, "overhang" refers to unpaired nucleotides, in the context of a duplex having one or more free ends at the 5' terminus or 3' terminus of a dsRNA. In certain embodiments, the overhang is a 3' or 5' overhang on the antisense strand or sense strand. In some embodiments, the overhang is a 3' overhang having a length of between one and six nucleotides, optionally one to five, one to four, one to three, one to two, two to six, two to five, two to four, two to three, three to six, three to five, three to four, four to six, four to five, five to six nucleotides, or one, two, three, four, five or six nucleotides.

As used herein, the term "RNA processing" refers to processing activities performed by components of the siRNA, miRNA or RNase H pathways (*e.g.*, Drosha, Dicer, Argonaute2 or other RISC endoribonucleases, and RNaseH), which are described in greater detail below (see "RNA Processing" section below). The term is explicitly distinguished from the post-transcriptional processes of 5' capping of RNA and degradation of RNA *via* non-RISC- or non-RNase H-mediated processes. Such "degradation" of an RNA can take several forms, *e.g.* deadenylation (removal of a 3' poly(A) tail), and/or nuclease digestion of part or all of the body of the RNA by one or more of several endo- or exo-nucleases (*e.g.*, RNase III, RNase P, RNase T1, RNase A (1, 2, 3, 4/5), oligonucleotidase, etc.).

By "homologous sequence" is meant, a nucleotide sequence that is shared by one or more polynucleotide sequences, such as genes, gene transcripts and/or non-coding polynucleotides. For example, a homologous sequence can be a nucleotide sequence that is shared by two or more genes encoding related but different proteins, such as different members of a gene family, different protein epitopes, different protein isoforms or completely divergent genes, such as a cytokine and its corresponding receptors. A homologous sequence can be a nucleotide sequence that is shared by two or more non-coding polynucleotides, such as noncoding DNA or RNA, regulatory sequences, introns, and sites of transcriptional control or regulation. Homologous sequences can also include conserved sequence regions shared by more than one polynucleotide sequence. Homology does not need to be perfect homology (e.g., 100%), as partially homologous sequences are also contemplated by the instant invention (e.g., 99%, 98%, 97%, 96%, 95%, 94%, 93%, 92%, 91%, 90%, 89%, 88%, 87%, 86%, 85%, 84%, 83%, 82%, 81%, 80% etc.). Indeed, design and use of the DsiRNA agents of the instant invention contemplates the possibility of using such DsiRNA agents not only against target RNAs of KRAS possessing perfect complementarity with the presently described DsiRNA agents, but also against target KRAS RNAs possessing sequences that are, *e.g.*, only 99%, 98%, 97%, 96%, 95%, 94%, 93%, 92%, 91%, 90%, 89%, 88%, 87%, 86%, 85%, 84%, 83%, 82%, 81%, 80% etc. complementary to said DsiRNA agents. Similarly, it is contemplated that the presently described DsiRNA agents of the instant invention might be readily altered by the skilled artisan to enhance the extent of complementarity between said DsiRNA agents and a target KRAS RNA, *e.g.*, of a specific allelic variant of KRAS (*e.g.*, an allele of enhanced therapeutic interest). Indeed, DsiRNA agent sequences with insertions, deletions, and single point mutations relative to the target KRAS sequence can also be effective for inhibition. Alternatively, DsiRNA agent sequences with nucleotide analog substitutions or insertions can be effective for inhibition.

Sequence identity may be determined by sequence comparison and alignment algorithms known in the art. To determine the percent identity of two nucleic acid sequences (or of two amino acid sequences), the sequences are aligned for optimal comparison purposes (*e.g.*, gaps can be introduced in the first sequence or second sequence for optimal alignment). The nucleotides (or amino acid residues) at corresponding nucleotide (or amino acid) positions are then compared. When a position in the first sequence is occupied by the same residue as the corresponding position in the second sequence, then the molecules are identical at that position. The percent identity between the two sequences is a function of the number of identical positions shared by the sequences (i.e., % homology=# of identical positions/total # of positions.times.100), optionally penalizing the score for the number of gaps introduced and/or length of gaps introduced.

The comparison of sequences and determination of percent identity between two sequences can be accomplished using a mathematical algorithm. In one embodiment, the alignment generated over a certain portion of the sequence aligned having sufficient identity but not over portions having low degree of identity (i.e., a local alignment). A preferred, non-limiting example of a local alignment algorithm utilized for the comparison of sequences is the algorithm of Karlin and Altschul (1990) Proc. Natl. Acad. Sci. USA 87:2264-68, modified as in Karlin and Altschul (1993) Proc. Natl. Acad. Sci. USA 90:5873-77. Such an algorithm is incorporated into the BLAST programs (version 2.0) of Altschul, et al. (1990) J. Mol. Biol. 215:403-10.

In another embodiment, the alignment is optimized by introducing appropriate gaps and percent identity is determined over the length of the aligned sequences (i.e., a gapped alignment). To obtain gapped alignments for comparison purposes, Gapped BLAST can be utilized as described in Altschul et al., (1997) Nucleic Acids Res. 25(17):3389-3402. In another embodiment, the alignment is optimized by introducing appropriate gaps and percent identity is determined over the entire length of the sequences aligned (i.e., a global alignment). A preferred, non-limiting example of a mathematical algorithm utilized for the global comparison of sequences is the algorithm of Myers and Miller, CABIOS (1989). Such an algorithm is incorporated into the ALIGN program (version 2.0) which is part of the GCG sequence alignment software package. When utilizing the ALIGN program for comparing amino acid sequences, a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4 can be used.

Greater than 80% sequence identity, e.g., 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or even 100%

sequence identity, between the DsiRNA antisense strand and the portion of the KRAS RNA sequence is preferred. Alternatively, the DsiRNA may be defined functionally as a nucleotide sequence (or oligonucleotide sequence) that is capable of hybridizing with a portion of the KRAS RNA (e.g., 400 mM NaCl, 40 mM PIPES pH 6.4, 1 mM EDTA, 50°C or 70°C hybridization for 12-16 hours; followed by washing). Additional preferred hybridization conditions include hybridization at 70°C in 1xSSC or 50°C in 1xSSC, 50% formamide followed by washing at 70°C in 0.3xSSC or hybridization at 70°C. in 4xSSC or 50°C in 4xSSC, 50% formamide followed by washing at 67°C in 1xSSC. The hybridization temperature for hybrids anticipated to be less than 50 base pairs in length should be 5-10°C less than the melting temperature (Tm) of the hybrid, where Tm is determined according to the following equations. For hybrids less than 18 base pairs in length, Tm(°C)=2(# of A+T bases)+4(# of G+C bases). For hybrids between 18 and 49 base pairs in length, Tm(°C)=81.5+16.6(log 10[Na+])+0.41 (% G+C)-(600/N), where N is the number of bases in the hybrid, and [Na+] is the concentration of sodium ions in the hybridization buffer ([Na+] for 1xSSC=0.165 M). Additional examples of stringency conditions for polynucleotide hybridization are provided in Sambrook, J., E. F. Fritsch, and T. Maniatis, 1989, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., chapters 9 and 11, and Current Protocols in Molecular Biology, 1995, F. M. Ausubel et al., eds., John Wiley & Sons, Inc., sections 2.10 and 6.3-6.4. The length of the identical nucleotide sequences may be at least 10, 12, 15, 17, 20, 22, 25, 27 or 30 bases.

By "conserved sequence region" is meant, a nucleotide sequence of one or more regions in a polynucleotide does not vary significantly between generations or from one biological system, subject, or organism to another biological system, subject, or organism. The polynucleotide can include both coding and non-coding DNA and RNA.

By "sense region" is meant a nucleotide sequence of a DsiRNA molecule having complementarity to an antisense region of the DsiRNA molecule. In addition, the sense region of a DsiRNA molecule can comprise a nucleic acid sequence having homology with a target nucleic acid sequence.

By "antisense region" is meant a nucleotide sequence of a DsiRNA molecule having complementarity to a target nucleic acid sequence. In addition, the antisense region of a DsiRNA molecule comprises a nucleic acid sequence having complementarity to a sense region of the DsiRNA molecule.

As used herein, "antisense strand" refers to a single stranded nucleic acid molecule which has a sequence complementary to that of a target RNA. When the antisense strand

contains modified nucleotides with base analogs, it is not necessarily complementary over its entire length, but must at least hybridize with a target RNA.

As used herein, "sense strand" refers to a single stranded nucleic acid molecule which has a sequence complementary to that of an antisense strand. When the antisense strand contains modified nucleotides with base analogs, the sense strand need not be complementary over the entire length of the antisense strand, but must at least duplex with the antisense strand.

As used herein, "guide strand" refers to a single stranded nucleic acid molecule of a dsRNA or dsRNA-containing molecule, which has a sequence sufficiently complementary to that of a target RNA to result in RNA interference. After cleavage of the dsRNA or dsRNA-containing molecule by Dicer, a fragment of the guide strand remains associated with RISC, binds a target RNA as a component of the RISC complex, and promotes cleavage of a target RNA by RISC. As used herein, the guide strand does not necessarily refer to a continuous single stranded nucleic acid and may comprise a discontinuity, preferably at a site that is cleaved by Dicer. A guide strand is an antisense strand.

As used herein, "passenger strand" refers to an oligonucleotide strand of a dsRNA or dsRNA-containing molecule, which has a sequence that is complementary to that of the guide strand. As used herein, the passenger strand does not necessarily refer to a continuous single stranded nucleic acid and may comprise a discontinuity, preferably at a site that is cleaved by Dicer. A passenger strand is a sense strand.

By "target nucleic acid" is meant a nucleic acid sequence whose expression, level or activity is to be modulated. The target nucleic acid can be DNA or RNA. For agents that target KRAS, in certain embodiments target nucleic acid is KRAS RNA. KRAS RNA target sites can also interchangeably be referenced by corresponding cDNA sequences. Levels of KRAS may also be targeted *via* targeting of upstream effectors of KRAS, or the effects of modulated or misregulated KRAS may also be modulated by targeting of molecules downstream of KRAS in the Ras signalling pathway.

By "complementarity" is meant that a nucleic acid can form hydrogen bond(s) with another nucleic acid sequence by either traditional Watson-Crick or other non-traditional types. In reference to the nucleic molecules of the present invention, the binding free energy for a nucleic acid molecule with its complementary sequence is sufficient to allow the relevant function of the nucleic acid to proceed, e.g., RNAi activity. Determination of binding free energies for nucleic acid molecules is well known in the art (see, e.g., Turner et al., 1987, CSH Symp. Quant. Biol. LII pp. 123-133; Frier et al., 1986, Proc. Nat. Acad. Sci.

USA 83:9373-9377; Turner et al., 1987, J. Am. Chem. Soc. 109:3783-3785). A percent complementarity indicates the percentage of contiguous residues in a nucleic acid molecule that can form hydrogen bonds (e.g., Watson-Crick base pairing) with a second nucleic acid sequence (e.g., 5, 6, 7, 8, 9, or 10 nucleotides out of a total of 10 nucleotides in the first oligonucleotide being based paired to a second nucleic acid sequence having 10 nucleotides represents 50%, 60%, 70%, 80%, 90%, and 100% complementary respectively). "Perfectly complementary" means that all the contiguous residues of a nucleic acid sequence will hydrogen bond with the same number of contiguous residues in a second nucleic acid sequence. In one embodiment, a DsiRNA molecule of the invention comprises 19 to 30 (e.g., 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, or 30 or more) nucleotides that are complementary to one or more target nucleic acid molecules or a portion thereof.

In one embodiment, DsiRNA molecules of the invention that down regulate or reduce KRAS gene expression are used for treating, preventing or reducing KRAS-related diseases or disorders (*e.g.*, cancer) in a subject or organism.

In one embodiment of the present invention, each sequence of a DsiRNA molecule of the invention is independently 25 to 35 nucleotides in length, in specific embodiments 25, 26, 27, 28, 29, 30, 31, 32, 33, 34 or 35 nucleotides in length. In another embodiment, the DsiRNA duplexes of the invention independently comprise 25 to 30 base pairs (*e.g.*, 25, 26, 27, 28, 29, or 30). In another embodiment, one or more strands of the DsiRNA molecule of the invention independently comprises 19 to 35 nucleotides (e.g., 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34 or 35) that are complementary to a target (KRAS) nucleic acid molecule. In certain embodiments, a DsiRNA molecule of the invention possesses a length of duplexed nucleotides between 25 and 34 nucleotides in length (*e.g.*, 25, 26, 27, 28, 29, 30, 31, 32, 33 or 34 nucleotides in length; optionally, all such nucleotides base pair with cognate nucleotides of the opposite strand). (Exemplary DsiRNA molecules of the invention are shown in Figures 1 and 4, and below.

As used herein "cell" is used in its usual biological sense, and does not refer to an entire multicellular organism, e.g., specifically does not refer to a human. The cell can be present in an organism, e.g., birds, plants and mammals such as humans, cows, sheep, apes, monkeys, swine, dogs, and cats. The cell can be prokaryotic (e.g., bacterial cell) or eukaryotic (e.g., mammalian or plant cell). The cell can be of somatic or germ line origin, totipotent or pluripotent, dividing or non-dividing. The cell can also be derived from or can comprise a gamete or embryo, a stem cell, or a fully differentiated cell. Within certain aspects, the term "cell" refers specifically to mammalian cells, such as human cells, that

contain one or more isolated dsRNA molecules of the present disclosure. In particular aspects, a cell processes dsRNAs or dsRNA-containing molecules resulting in RNA intereference of target nucleic acids, and contains proteins and protein complexes required for RNAi, *e.g.*, Dicer and RISC.

The DsiRNA molecules of the invention are added directly, or can be complexed with cationic lipids, packaged within liposomes, or otherwise delivered to target cells or tissues. The nucleic acid or nucleic acid complexes can be locally administered to relevant tissues *ex vivo*, or *in vivo* through direct dermal application, transdermal application, or injection, with or without their incorporation in biopolymers. In particular embodiments, the nucleic acid molecules of the invention comprise sequences shown in Figures 1 and 4, and the below exemplary structures. Examples of such nucleic acid molecules consist essentially of sequences defined in these figures and exemplary structures. Furthermore, where such agents are modified in accordance with the below description of modification patterning of DsiRNA agents, chemically modified forms of constructs described in Figures 1 and 4, and the below exemplary structures can be used in all uses described for the DsiRNA agents of Figures 1 and 4, and the below exemplary structures.

In another aspect, the invention provides mammalian cells containing one or more DsiRNA molecules of this invention. The one or more DsiRNA molecules can independently be targeted to the same or different sites.

By "RNA" is meant a molecule comprising at least one ribonucleotide residue. By "ribonucleotide" is meant a nucleotide with a hydroxyl group at the 2' position of a β-D-ribofuranose moiety. The terms include double-stranded RNA, single-stranded RNA, isolated RNA such as partially purified RNA, essentially pure RNA, synthetic RNA, recombinantly produced RNA, as well as altered RNA that differs from naturally occurring RNA by the addition, deletion, substitution and/or alteration of one or more nucleotides. Such alterations can include addition of non-nucleotide material, such as to the end(s) of the DsiRNA or internally, for example at one or more nucleotides of the RNA. Nucleotides in the RNA molecules of the instant invention can also comprise non-standard nucleotides, such as non-naturally occurring nucleotides or chemically synthesized nucleotides or deoxynucleotides. These altered RNAs can be referred to as analogs or analogs of naturally-occurring RNA.

By "subject" is meant an organism, which is a donor or recipient of explanted cells or the cells themselves. "Subject" also refers to an organism to which the DsiRNA agents of the

invention can be administered. A subject can be a mammal or mammalian cells, including a human or human cells.

The phrase "pharmaceutically acceptable carrier" refers to a carrier for the administration of a therapeutic agent. Exemplary carriers include saline, buffered saline, dextrose, water, glycerol, ethanol, and combinations thereof. For drugs administered orally, pharmaceutically acceptable carriers include, but are not limited to pharmaceutically acceptable excipients such as inert diluents, disintegrating agents, binding agents, lubricating agents, sweetening agents, flavoring agents, coloring agents and preservatives. Suitable inert diluents include sodium and calcium carbonate, sodium and calcium phosphate, and lactose, while corn starch and alginic acid are suitable disintegrating agents. Binding agents may include starch and gelatin, while the lubricating agent, if present, will generally be magnesium stearate, stearic acid or talc. If desired, the tablets may be coated with a material such as glyceryl monostearate or glyceryl distearate, to delay absorption in the gastrointestinal tract. The pharmaceutically acceptable carrier of the disclosed dsRNA compositions may be micellar structures, such as a liposomes, capsids, capsoids, polymeric nanocapsules, or polymeric microcapsules.

Polymeric nanocapsules or microcapsules facilitate transport and release of the encapsulated or bound dsRNA into the cell. They include polymeric and monomeric materials, especially including polybutylcyanoacrylate. A summary of materials and fabrication methods has been published (see Kreuter, 1991). The polymeric materials which are formed from monomeric and/or oligomeric precursors in the polymerization/nanoparticle generation step, are *per se* known from the prior art, as are the molecular weights and molecular weight distribution of the polymeric material which a person skilled in the field of manufacturing nanoparticles may suitably select in accordance with the usual skill.

Various methodologies of the instant invention include step that involves comparing a value, level, feature, characteristic, property, etc. to a "suitable control", referred to interchangeably herein as an "appropriate control". A "suitable control" or "appropriate control" is a control or standard familiar to one of ordinary skill in the art useful for comparison purposes. In one embodiment, a "suitable control" or "appropriate control" is a value, level, feature, characteristic, property, etc. determined prior to performing an RNAi methodology, as described herein. For example, a transcription rate, mRNA level, translation rate, protein level, biological activity, cellular characteristic or property, genotype, phenotype, etc. can be determined prior to introducing an RNA silencing agent (*e.g.*, DsiRNA) of the invention into a cell or organism. In another embodiment, a "suitable

control" or "appropriate control" is a value, level, feature, characteristic, property, etc. determined in a cell or organism, *e.g.*, a control or normal cell or organism, exhibiting, for example, normal traits. In yet another embodiment, a "suitable control" or "appropriate control" is a predefined value, level, feature, characteristic, property, etc.

The term "*in vitro*" has its art recognized meaning, *e.g.*, involving purified reagents or extracts, *e.g.*, cell extracts. The term "*in vivo*" also has its art recognized meaning, *e.g.*, involving living cells, *e.g.*, immortalized cells, primary cells, cell lines, and/or cells in an organism.

"Treatment", or "treating" as used herein, is defined as the application or administration of a therapeutic agent (*e.g.*, a DsiRNA agent or a vector or transgene encoding same) to a patient, or application or administration of a therapeutic agent to an isolated tissue or cell line from a patient, who has a disorder with the purpose to cure, heal, alleviate, relieve, alter, remedy, ameliorate, improve or affect the disease or disorder, or symptoms of the disease or disorder. The term "treatment" or "treating" is also used herein in the context of administering agents prophylactically. The term "effective dose" or "effective dosage" is defined as an amount sufficient to achieve or at least partially achieve the desired effect. The term "therapeutically effective dose" is defined as an amount sufficient to cure or at least partially arrest the disease and its complications in a patient already suffering from the disease. The term "patient" includes human and other mammalian subjects that receive either prophylactic or therapeutic treatment.

Structures of Anti-KRAS DsiRNA Agents

In certain embodiments, the anti-KRAS DsiRNA agents of the invention can have the following structures:

In one such embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "Y" is an overhang domain comprised of 1-4

RNA monomers that are optionally 2'-O-methyl RNA monomers, and "D"=DNA. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand.

In an additional embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In another such embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In another such embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang

domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2’-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2’-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXX-3'

3′-XXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3′-XXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In other embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXX-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2’-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang

domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In other embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers

and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment,

the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top

strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In other embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2’-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2’-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXX-3'

3′-XXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3′-XXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In other embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXX-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2’-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3′-YXXXXXXXXXXXXXXXXXXXXXXXp-5’

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang

domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers

and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In a related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment,

the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top

strand is the sense strand, and the bottom strand is the antisense strand.

In additional embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

In further embodiments, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. The top strand is the sense strand, and the bottom strand is the antisense strand. In one related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, underlined residues are 2'-O-methyl RNA monomers, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In another related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

5'-pXXXXXXXXXXXXXXXXXXXXXXXDD-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXp-5'

wherein "X"=RNA, "p"=a phosphate group, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.

The above modification patterns can also be incorporated into, *e.g.*, the extended DsiRNA structures and mismatch and/or frayed DsiRNA structures described below.

In another embodiment, the DsiRNA comprises strands having equal lengths possessing 1-3 mismatched residues that serve to orient Dicer cleavage (specifically, one or more of positions 1, 2 or 3 on the first strand of the DsiRNA, when numbering from the 3'-terminal residue, are mismatched with corresponding residues of the 5'-terminal region on the second strand when first and second strands are annealed to one another). An exemplary 27mer DsiRNA agent with two terminal mismatched residues is shown:

5'-pXXXXXXXXXXXXXXXXXXXXXXXXX^{MM}-3'

3'-XXXXXXXXXXXXXXXXXXXXXXXXX$_{MM}$p-5'

wherein "X"=RNA, "p"=a phosphate group, "M"=Nucleic acid residues (RNA, DNA or non-natural or modified nucleic acids) that do not base pair (hydrogen bond) with corresponding "M" residues of otherwise complementary strand when strands are annealed. Any of the residues of such agents can optionally be 2'-O-methyl RNA monomers – alternating positioning of 2'-O-methyl RNA monomers that commences from the 3'-terminal residue of

the bottom (second) strand, as shown for above asymmetric agents, can also be used in the above "blunt/fray" DsiRNA agent. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand.

In certain additional embodiments, the present invention provides compositions for RNA interference (RNAi) that possess one or more base paired deoxyribonucleotides within a region of a double stranded ribonucleic acid (dsRNA) that is positioned 3' of a projected sense strand Dicer cleavage site and correspondingly 5' of a projected antisense strand Dicer cleavage site. The compositions of the invention comprise a dsRNA which is a precursor molecule, *i.e.*, the dsRNA of the present invention is processed *in vivo* to produce an active small interfering nucleic acid (siRNA). The dsRNA is processed by Dicer to an active siRNA which is incorporated into RISC.

In certain embodiments, the DsiRNA agents of the invention can have the following exemplary structures (noting that any of the following exemplary structures can be combined, *e.g.*, with the bottom strand modification patterns of the above-described structures – in one specific example, the bottom strand modification pattern shown in any of the above structures is applied to the 27 most 3' residues of the bottom strand of any of the following structures; in another specific example, the bottom strand modification pattern shown in any of the above structures upon the 23 most 3' residues of the bottom strand is applied to the 23 most 3' residues of the bottom strand of any of the following structures):

In one such embodiment, the DsiRNA comprises the following (an exemplary "right-extended", "DNA extended" DsiRNA):

5'-XXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_N$DD-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_N$XX-5'

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand.

In a related embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_NDD$-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_NDD$-5'

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand.

In an additional embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_NDD$-3'

3'-Y$\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}\underline{X}$XXXXXXXXX$X_{N*}D_NZZ$-5'

wherein "X"=RNA, "$\underline{X}$"=2'-O-methyl RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another such embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_NDD$-3'

3'-Y$\underline{X}X_{N*}D_NZZ$-5'

wherein "X"=RNA, "$\underline{X}$"=2'-O-methyl RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another such embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}D_NDD$-3'

3'-Y$\underline{X}X_{N*}D_NZZ$-5'

wherein "X"=RNA, "$\underline{X}$"=2'-O-methyl RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}[X1/D1]_NDD$-3'

3'-YXXXXXXXXXXXXXXXXXXXXXXXX$X_{N*}[X2/D2]_NZZ$-5'

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10, where at least one $D1_N$ is present in the top strand and is base paired with a corresponding $D2_N$ in the bottom strand. Optionally, $D1_N$ and $D1_{N+1}$ are base paired with corresponding $D2_N$ and $D2_{N+1}$; $D1_N$, $D1_{N+1}$ and $D1_{N+2}$ are base paired with corresponding

$D2_N$, $D1_{N+1}$ and $D1_{N+2}$, etc. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In the structures depicted herein, the 5' end of either the sense strand or antisense strand can optionally comprise a phosphate group.

In another embodiment, the DNA:DNA-extended DsiRNA comprises strands having equal lengths possessing 1-3 mismatched residues that serve to orient Dicer cleavage (specifically, one or more of positions 1, 2 or 3 on the first strand of the DsiRNA, when numbering from the 3'-terminal residue, are mismatched with corresponding residues of the 5'-terminal region on the second strand when first and second strands are annealed to one another). An exemplary DNA:DNA-extended DsiRNA agent with two terminal mismatched residues is shown:

$5'-XXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}D_N{}^{M}{}^{M-3'}$

$3'-XXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}D_N{}_{M}{}_{M-5'}$

wherein "X"=RNA, "M"=Nucleic acid residues (RNA, DNA or non-natural or modified nucleic acids) that do not base pair (hydrogen bond) with corresponding "M" residues of otherwise complementary strand when strands are annealed, "D"=DNA and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. Any of the residues of such agents can optionally be 2'-O-methyl RNA monomers – alternating positioning of 2'-O-methyl RNA monomers that commences from the 3'-terminal residue of the bottom (second) strand, as shown for above asymmetric agents, can also be used in the above "blunt/fray" DsiRNA agent. In one embodiment, the top strand (first strand) is the sense strand, and the bottom strand (second strand) is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand. Modification and DNA:DNA extension patterns paralleling those shown above for asymmetric/overhang agents can also be incorporated into such "blunt/frayed" agents.

In one embodiment, a length-extended DsiRNA agent is provided that comprises deoxyribonucleotides positioned at sites modeled to function *via* specific direction of Dicer cleavage, yet which does not require the presence of a base-paired deoxyribonucleotide in the dsRNA structure. An exemplary structure for such a molecule is shown:

5'-XXXXXXXXXXXXXXXXXXXDDXX-3'

3′-YXXXXXXXXXXXXXXXXXDDXXXX-5′

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, and "D"=DNA. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand. The above structure is modeled to force Dicer to cleave a minimum of a 21mer duplex as its primary post-processing form. In embodiments where the bottom strand of the above structure is the antisense strand, the positioning of two deoxyribonucleotide residues at the ultimate and penultimate residues of the 5' end of the antisense strand is likely to reduce off-target effects (as prior studies have shown a 2'-O-methyl modification of at least the penultimate position from the 5' terminus of the antisense strand to reduce off-target effects; see, *e.g.*, US 2007/0223427).

In one embodiment, the DsiRNA comprises the following (an exemplary "left-extended", "DNA extended" DsiRNA):

5'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}Y-3'

3′-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}-5'

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, "D"=DNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand.

In a related embodiment, the DsiRNA comprises:

5'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}DD-3'

3′-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}XX-5'

wherein "X"=RNA, optionally a 2'-O-methyl RNA monomers "D"=DNA, "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand.

In an additional embodiment, the DsiRNA comprises:

5'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}DD-3'

3'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}ZZ-5'

wherein "X"=RNA, optionally a 2'-O-methyl RNA monomers "D"=DNA, "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. "Z"=DNA or RNA. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another such embodiment, the DsiRNA comprises:

5'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}DD-3'

3'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}ZZ-5'

wherein "X"=RNA, optionally a 2'-O-methyl RNA monomers "D"=DNA, "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. "Z"=DNA or RNA. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another such embodiment, the DsiRNA comprises:

5'-D_NZZXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}DD-3'

3'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}ZZ-5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another such embodiment, the DsiRNA comprises:

5'-D_NZZXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}Y-3'

3'-D_NXXXXXXXXXXXXXXXXXXXXXXXXX_{N*}-5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5

or 6. "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In another embodiment, the DsiRNA comprises:

5'-$[X1/D1]_N$XXXXXXXXXXXXXXXXXXXXXXXX$_{N*}$DD-3'

3'-$[X2/D2]_N$XXXXXXXXXXXXXXXXXXXXXXXX$_{N*}$ZZ-5'

wherein "X"=RNA, "D"=DNA, "Z"=DNA or RNA, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10, where at least one $D1_N$ is present in the top strand and is base paired with a corresponding $D2_N$ in the bottom strand. Optionally, $D1_N$ and $D1_{N+1}$ are base paired with corresponding $D2_N$ and $D2_{N+1}$; $D1_N$, $D1_{N+1}$ and $D1_{N+2}$ are base paired with corresponding $D2_N$, $D1_{N+1}$ and $D1_{N+2}$, etc. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently depicted in the above schematic.

In a related embodiment, the DsiRNA comprises:

5'-$[X1/D1]_N$XXXXXXXXXXXXXXXXXXXXXXXX$_{N*}$Y-3'

3'-$[X2/D2]_N$XXXXXXXXXXXXXXXXXXXXXXXX$_{N*}$-5'

wherein "X"=RNA, "D"=DNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10, where at least one $D1_N$ is present in the top strand and is base paired with a corresponding $D2_N$ in the bottom strand. Optionally, $D1_N$ and $D1_{N+1}$ are base paired with corresponding $D2_N$ and $D2_{N+1}$; $D1_N$, $D1_{N+1}$ and $D1_{N+2}$ are base paired with corresponding $D2_N$, $D1_{N+1}$ and $D1_{N+2}$, etc. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand, with 2'-O-methyl RNA monomers located at alternating residues along the top strand, rather than the bottom strand presently

depicted in the above schematic.

In another embodiment, the DNA:DNA-extended DsiRNA comprises strands having equal lengths possessing 1-3 mismatched residues that serve to orient Dicer cleavage (specifically, one or more of positions 1, 2 or 3 on the first strand of the DsiRNA, when numbering from the 3'-terminal residue, are mismatched with corresponding residues of the 5'-terminal region on the second strand when first and second strands are annealed to one another). An exemplary DNA:DNA-extended DsiRNA agent with two terminal mismatched residues is shown:

$5'\text{-}D_N XXXXXXXXXXXXXXXXXXXXXXXXX_{N^*}{}^{M}{}^{M-3'}$

$3'\text{-}D_N XXXXXXXXXXXXXXXXXXXXXXXXX_{N^*}{}^{M}{}_{M-5'}$

wherein "X"=RNA, "M"=Nucleic acid residues (RNA, DNA or non-natural or modified nucleic acids) that do not base pair (hydrogen bond) with corresponding "M" residues of otherwise complementary strand when strands are annealed, "D"=DNA and "N"=1 to 50 or more, but is optionally 1-8 or 1-10. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. Any of the residues of such agents can optionally be 2'-O-methyl RNA monomers – alternating positioning of 2'-O-methyl RNA monomers that commences from the 3'-terminal residue of the bottom (second) strand, as shown for above asymmetric agents, can also be used in the above "blunt/fray" DsiRNA agent. In one embodiment, the top strand (first strand) is the sense strand, and the bottom strand (second strand) is the antisense strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand. Modification and DNA:DNA extension patterns paralleling those shown above for asymmetric/overhang agents can also be incorporated into such "blunt/frayed" agents.

In another embodiment, a length-extended DsiRNA agent is provided that comprises deoxyribonucleotides positioned at sites modeled to function *via* specific direction of Dicer cleavage, yet which does not require the presence of a base-paired deoxyribonucleotide in the dsRNA structure. An exemplary structure for such a molecule is shown:

$5'\text{-}XXDDXXXXXXXXXXXXXXXXXXXX_{N^*}Y\text{-}3'$

$3'\text{-}DDXXXXXXXXXXXXXXXXXXXXXX_{N^*}\text{-}5'$

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-O-methyl RNA monomers – in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-O-methyl RNA monomers, and "D"=DNA. "N*"=0 to 15 or more, but is optionally 0, 1, 2, 3, 4, 5 or 6. In one embodiment, the top strand is the sense strand, and the bottom strand is the antisense

strand. Alternatively, the bottom strand is the sense strand and the top strand is the antisense strand. The above structure is modeled to force Dicer to cleave a minimum of a 21mer duplex as its primary post-processing form. In embodiments where the bottom strand of the above structure is the antisense strand, the positioning of two deoxyribonucleotide residues at the ultimate and penultimate residues of the 5' end of the antisense strand is likely to reduce off-target effects (as prior studies have shown a 2'-O-methyl modification of at least the penultimate position from the 5' terminus of the antisense strand to reduce off-target effects; see, *e.g.*, US 2007/0223427).

In certain embodiments, the "D" residues of the above structures include at least one PS-DNA or PS-RNA. Optionally, the "D" residues of the above structures include at least one modified nucleotide that inhibits Dicer cleavage.

While the above-described "DNA-extended" DsiRNA agents can be categorized as either "left extended" or "right extended", DsiRNA agents comprising both left- and right-extended DNA-containing sequences within a single agent (*e.g.*, both flanks surrounding a core dsRNA structure are dsDNA extensions) can also be generated and used in similar manner to those described herein for "right-extended" and "left-extended" agents.

In some embodiments, the DsiRNA of the instant invention further comprises a linking moiety or domain that joins the sense and antisense strands of a DNA:DNA-extended DsiRNA agent. Optionally, such a linking moiety domain joins the 3' end of the sense strand and the 5' end of the antisense strand. The linking moiety may be a chemical (non-nucleotide) linker, such as an oligomethylenediol linker, oligoethylene glycol linker, or other art-recognized linker moiety. Alternatively, the linker can be a nucleotide linker, optionally including an extended loop and/or tetraloop.

In one embodiment, the DsiRNA agent has an asymmetric structure, with the sense strand having a 25-base pair length, and the antisense strand having a 27-base pair length with a 1-4 base 3'-overhang (*e.g.*, a one base 3'-overhang, a two base 3'-overhang, a three base 3'-overhang or a four base 3'-overhang). In another embodiment, this DsiRNA agent has an asymmetric structure further containing 2 deoxynucleotides at the 3' end of the sense strand.

In another embodiment, the DsiRNA agent has an asymmetric structure, with the antisense strand having a 25-base pair length, and the sense strand having a 27-base pair length with a 1-4 base 3'-overhang (*e.g.*, a one base 3'-overhang, a two base 3'-overhang, a three base 3'-overhang or a four base 3'-overhang). In another embodiment, this DsiRNA agent has an asymmetric structure further containing 2 deoxynucleotides at the 3' end of the

antisense strand.

Exemplary KRAS targeting DsiRNA agents of the invention include the following:

KRAS-355 Target Site

5′-CAGGUCAAGAGGAGUACAGUGCAau-3′ (SEQ ID NO: 5; DP1148P)
3′-UCGUCCAGUUCUCCUCAUGUCACGUUA-5′ (SEQ ID NO: 14; DP1151G)

5′-AGCAGGUCAAGAGGAGUACAGUGCAAU-3′ (SEQ ID NO: 6; DP1149P)
3′-UCGUCCAGUUCUCCUCAUGUCACGUUA-5′ (SEQ ID NO: 14; DP1151G)

5′-AGCAGGUCAAGAGGAGUACAGUGCA$^{UA-3'}$ (SEQ ID NO: 7; DP1150P)
3′-UCGUCCAGUUCUCCUCAUGUCACGU$_{UA-5'}$ (SEQ ID NO: 14; DP1151G)

KRAS-940 Target Site

5′-UUAGCAUUUGUUUUAGCAUUACCta-3′ (SEQ ID NO: 8; DP1136P)
3′-AUAAUCGUAAACAAAAUCGUAAUGGAU-5′ (SEQ ID NO: 43; DP1139G)

5′-UAUUAGCAUUUGUUUUAGCAUUACCUA-3′ (SEQ ID NO: 9; DP1137P)
3′-AUAAUCGUAAACAAAAUCGUAAUGGAU-5′ (SEQ ID NO: 43; DP1139G)

5′-UAUUAGCAUUUGUUUUAGCAUUACC$^{CC-3'}$ (SEQ ID NO: 10; DP1145P)
3′-AUAAUCGUAAACAAAAUCGUAAUGG$_{AU-5'}$ (SEQ ID NO: 43; DP1139G)

KRAS-355* Alternative (Polymorphic) Target Site

5′-CAGGUCAUGAGGAGUACAGUGCAau-3′ (SEQ ID NO: 132)
3′-UCGUCCAGUACUCCUCAUGUCACGUUA-5′ (SEQ ID NO: 138)

5′-AGCAGGUCAUGAGGAGUACAGUGCAAU-3′ (SEQ ID NO: 187)
3′-UCGUCCAGUACUCCUCAUGUCACGUUA-5′ (SEQ ID NO: 138)

5′-AGCAGGUCAUGAGGAGUACAGUGCA$^{UA-3'}$ (SEQ ID NO: 188)
3′-UCGUCCAGUACUCCUCAUGUCACGU$_{UA-5'}$ (SEQ ID NO: 138)

Other exemplary KRAS targeting DsiRNA agents of the invention include the following:

Table 2: Anti-KRAS DsiRNA Agent and Cognate siRNA Agent Antsense Strands

Name	Pos	Human KRAS DsiRNA Antisense Strand Sequence	SEQ ID NO:	Name	Cognate hKRAS siRNA Antisense Strand Sequence	SEQ ID NO:
KRASm_204	204	UCUUGCCUACGCCACCAGCUCCAACUA	11	KRAS_21_204	P-CUACGCCACCAGCUCCAACtt	51
KRASm_341	341	CUCUUGACCUGCUGUGUCGAGAAUAUC	12	KRAS_21_341	P-ACCUGCUGUGUCGAGAAUAtt	52
KRASm_343	343	UCCUCUUGACCUGCUGUGUCGAGAAUA	13	KRAS_21_343	P-UGACCUGCUGUGUCGAGAAtt	53
KRASm_355	355	AUUGCACUGUACUCCUCUUGACCUGCU	14	KRAS_21_355	P-CUGUACUCCUCUUGACCUGtt	54
KRASm_361	361	UCCCUCAUUGCACUGUACUCCUCUUGA	15	KRAS_21_361	P-AUUGCACUGUACUCCUCUUtt	55
KRASm_371	371	CAUGUACUGGUCCCUCAUUGCACUGUA	16	KRAS_21_371	P-CUGGUCCCUCAUUGCACUGtt	56
KRASm_401	401	AAAUACACAAAGAAAGCCCUCCCCAGU	17	KRAS_21_401	P-ACAAAGAAAGCCCUCCCCAtt	57
KRASm_404	404	GGCAAAUACACAAAGAAAGCCCUCCCC	18	KRAS_21_404	P-AAUACACAAAGAAAGCCCUtt	58
KRASm_406	406	AUGGCAAAUACACAAAGAAAGCCCUCC	19	KRAS_21_406	P-AAAUACACAAAGAAAGCCCtt	59
KRASm_410	410	AUUUAUGGCAAAUACACAAAGAAAGCC	20	KRAS_21_410	P-GGCAAAUACACAAAGAAAGtt	60
KRASm_415	415	GUAUUAUUUAUGGCAAAUACACAAAGA	21	KRAS_21_415	P-UUUAUGGCAAAUACACAAAtt	61
KRASm_416	416	AGUAUUAUUUAUGGCAAAUACACAAAG	22	KRAS_21_416	P-AUUUAUGGCAAAUACACAAtt	62
KRASm_417	417	UAGUAUUAUUUAUGGCAAAUACACAAA	23	KRAS_21_417	P-UAUUUAUGGCAAAUACACAtt	63
KRASm_418	418	UUAGUAUUAUUUAUGGCAAAUACACAA	24	KRAS_21_418	P-UUAUUUAUGGCAAAUACACtt	64
KRASm_419	419	UUUAGUAUUAUUUAUGGCAAAUACACA	25	KRAS_21_419	P-AUUAUUUAUGGCAAAUACAtt	65
KRASm_420	420	AUUUAGUAUUAUUUAUGGCAAAUACAC	26	KRAS_21_420	P-UAUUAUUUAUGGCAAAUACtt	66
KRASm_429	429	CUUCAAAUGAUUUAGUAUUAUUUAUGG	27	KRAS_21_429	P-AUGAUUUAGUAUUAUUUAUtt	67
KRASm_434	434	AAUAUCUUCAAAUGAUUUAGUAUUAUU	28	KRAS_21_434	P-UUCAAAUGAUUUAGUAUUAtt	68
KRASm_438	438	GGUGAAUAUCUUCAAAUGAUUUAGUAU	29	KRAS_21_438	P-UAUCUUCAAAUGAUUUAGUtt	69
KRASm_440	440	AUGGUGAAUAUCUUCAAAUGAUUUAGU	30	KRAS_21_440	P-AAUAUCUUCAAAUGAUUUAtt	70
KRASm_445	445	CUAUAAUGGUGAAUAUCUUCAAAUGAU	31	KRAS_21_445	P-UGGUGAAUAUCUUCAAAUGtt	71
KRASm_450	450	GUUCUCUAUAAUGGUGAAUAUCUUCAA	32	KRAS_21_450	P-UAUAAUGGUGAAUAUCUUCtt	72
KRASm_452	452	UUGUUCUCUAUAAUGGUGAAUAUCUUC	33	KRAS_21_452	P-UCUAUAAUGGUGAAUAUCUtt	73
KRASm_508	508	CAUUUAUUUCCUACUAGGACCAUAGGU	34	KRAS_21_508	P-UUUCCUACUAGGACCAUAGtt	74
KRASm_534	534	UGUCUACUGUUCUAGAAGGCAAAUCAC	35	KRAS_21_534	P-CUGUUCUAGAAGGCAAAUCtt	75
KRASm_760	760	GAACUAAUGUAUAGAAGGCAUCAUCAA	36	KRAS_21_760	P-AUGUAUAGAAGGCAUCAUCtt	76
KRASm_776	776	UGUUUUCGAAUUUCUCGAACUAAUGUA	37	KRAS_21_776	P-CGAAUUUCUCGAACUAAUGtt	77
KRASm_786	786	CUUUUCUUUAUGUUUUCGAAUUUCUCG	38	KRAS_21_786	P-UUUAUGUUUUCGAAUUUCUtt	78
KRASm_795	795	UUUGCUCAUCUUUUCUUUAUGUUUUCG	39	KRAS_21_795	P-CAUCUUUUCUUUAUGUUUUtt	79
KRASm_800	800	CCAUCUUUGCUCAUCUUUUCUUUAUGU	40	KRAS_21_800	P-UUGCUCAUCUUUUCUUUAUtt	80
KRASm_920	920	GCUAAUAAUUUAGUGUAAUGUACAAAA	41	KRAS_21_920	P-AAUUUAGUGUAAUGUACAAtt	81
KRASm_935	935	AAUGCUAAAACAAAUGCUAAUAAUUUA	42	KRAS_21_935	P-AAAACAAAUGCUAAUAAUUtt	82
KRASm_940	940	UAGGUAAUGCUAAAACAAAUGCUAAUA	43	KRAS_21_940	P-AUGCUAAAACAAAUGCUAAtt	83
KRASm_1032	1032	CUGGCACUUAGAGGAAAAAAAAACUUC	44	KRAS_21_1032	P-CUUAGAGGAAAAAAAAACUtt	84
KRASm_1048	1048	CAAAACUCUGGGAAUACUGGCACUUAG	45	KRAS_21_1048	P-UCUGGGAAUACUGGCACUUtt	85
KRASm_1188	1188	AAGCUUCAUUAAUUUGUUUCACACCAA	46	KRAS_21_1188	P-CAUUAAUUUGUUUCACACCtt	86
KRASm_1256	1256	GUCUCAACUGAAAUUAGUAAUUAAUCC	47	KRAS_21_1256	P-ACUGAAAUUAGUAAUUAAUtt	87
KRASm_1634	1634	AAAAAUUUAGUAGCAUGUAAAUAUAGC	48	KRAS_21_1634	P-UUAGUAGCAUGUAAAUAUAtt	88
KRASm_5134	5134	UUUACACUAUACAAAAAUAGUUAAAAU	49	KRAS_21_5134	P-CUAUACAAAAAUAGUUAAAtt	89
KRASm_5208	5208	GAUGGAAAACAACUGGAUCACACUGCA	50	KRAS_21_5208	P-AAACAACUGGAUCACACUGtt	90

Table 3: Exemplary Anti-KRAS Asymmetric DsiRNA Agents

5′-GUUGGAGCUGGUGGCGUAGGCAAga-3′ (SEQ ID NO: 91)

3′-AUCAACCUCGACCACCGCAUCCGUUCU-5′ (SEQ ID NO: 11)

KRAS-204 Target: 5′-TAGTTGGAGCTGGTGGCGTAGGCAAGA-3′ (SEQ ID NO: 141)

5′-GUUGGAGCUGUUGGCGUAGGCAAga-3′ (SEQ ID NO: 129)
3′-AUCAACCUCGACAACCGCAUCCGUUCU-5′ (SEQ ID NO: 135)

KRAS-204* Target: 5′-TAGTTGGAGCTGTTGGCGTAGGCAAGA-3′ (SEQ ID NO: 142)

5′-UAUUCUCGACACAGCAGGUCAAGag-3′ (SEQ ID NO: 92)
3′-CUAUAAGAGCUGUGUCGUCCAGUUCUC-5′ (SEQ ID NO: 12)

KRAS-341 Target: 5′-GATATTCTCGACACAGCAGGTCAAGAG-3′ (SEQ ID NO: 143)

5′-UAUUCUCGACACAGCAGGUCAUGag-3′ (SEQ ID NO: 130)
3′-CUAUAAGAGCUGUGUCGUCCAGUACUC-5′ (SEQ ID NO: 136)

KRAS-341* Target: 5′-GATATTCTCGACACAGCAGGTCATGAG-3′ (SEQ ID NO: 144)

5′-UUCUCGACACAGCAGGUCAAGAGga-3′ (SEQ ID NO: 93)
3′-AUAAGAGCUGUGUCGUCCAGUUCUCCU-5′ (SEQ ID NO: 13)

KRAS-343 Target: 5′-TATTCTCGACACAGCAGGTCAAGAGGA-3′ (SEQ ID NO: 145)

5′-UUCUCGACACAGCAGGUCAUGAGga-3′ (SEQ ID NO: 131)
3′-AUAAGAGCUGUGUCGUCCAGUACUCCU-5′ (SEQ ID NO: 137)

KRAS-343* Target: 5′-TATTCTCGACACAGCAGGTCATGAGGA-3′ (SEQ ID NO: 146)

5′-CAGGUCAAGAGGAGUACAGUGCAat-3′ (SEQ ID NO: 5)
3′-UCGUCCAGUUCUCCUCAUGUCACGUUA-5′ (SEQ ID NO: 14)

KRAS-355 Target: 5′-AGCAGGTCAAGAGGAGTACAGTGCAAT-3′ (SEQ ID NO: 147)

5′-CAGGUCAUGAGGAGUACAGUGCAat-3′ (SEQ ID NO: 132)
3′-UCGUCCAGUACUCCUCAUGUCACGUUA-5′ (SEQ ID NO: 138)

KRAS-355* Target: 5′-AGCAGGTCATGAGGAGTACAGTGCAAT-3′ (SEQ ID NO: 148)

5′-AAGAGGAGUACAGUGCAAUGAGGga-3′ (SEQ ID NO: 94)
3′-AGUUCUCCUCAUGUCACGUUACUCCCU-5′ (SEQ ID NO: 15)

KRAS-361 Target: 5′-TCAAGAGGAGTACAGTGCAATGAGGGA-3′ (SEQ ID NO: 149)

5′-AUGAGGAGUACAGUGCAAUGAGGga-3′ (SEQ ID NO: 133)
3′-AGUACUCCUCAUGUCACGUUACUCCCU-5′ (SEQ ID NO: 139)

KRAS-361* Target: 5′-TCATGAGGAGTACAGTGCAATGAGGGA-3′ (SEQ ID NO: 150)

5′-CAGUGCAAUGAGGGACCAGUACAtg-3′ (SEQ ID NO: 95)
3′-AUGUCACGUUACUCCCUGGUCAUGUAC-5′ (SEQ ID NO: 16)

KRAS-371 Target: 5′-TACAGTGCAATGAGGGACCAGTACATG-3′ (SEQ ID NO: 151)

5′-UGGGGAGGGCUUUCUUUGUGUAUtt-3′ (SEQ ID NO: 96)
3′-UGACCCCUCCCGAAAGAAACACAUAAA-5′ (SEQ ID NO: 17)

KRAS-401 Target: 5′-ACTGGGGAGGGCTTTCTTTGTGTATTT-3′ (SEQ ID NO: 152)

5′-GGAGGGCUUUCUUUGUGUAUUUGcc-3′ (SEQ ID NO: 97)
3′-CCCCUCCCGAAAGAAACACAUAAACGG-5′ (SEQ ID NO: 18)

KRAS-404 Target: 5′-GGGGAGGGCTTTCTTTGTGTATTTGCC-3′ (SEQ ID NO: 153)

5′-AGGGCUUUCUUUGUGUAUUUGCCat-3′ (SEQ ID NO: 98)
3′-CCUCCCGAAAGAAACACAUAAACGGUA-5′ (SEQ ID NO: 19)

KRAS-406 Target: 5′-GGAGGGCTTTCTTTGTGTATTTGCCAT-3′ (SEQ ID NO: 154)

5′-CUUUCUUUGUGUAUUUGCCAUAAat-3′ (SEQ ID NO: 99)
3′-CCGAAAGAAACACAUAAACGGUAUUUA-5′ (SEQ ID NO: 20)

KRAS-410 Target: 5′-GGCTTTCTTTGTGTATTTGCCATAAAT-3′ (SEQ ID NO: 155)

5′-UUUGUGUAUUUGCCAUAAAUAAUac-3′ (SEQ ID NO: 100)
3′-AGAAACACAUAAACGGUAUUUAUUAUG-5′ (SEQ ID NO: 21)

KRAS-415 Target: 5′-TCTTTGTGTATTTGCCATAAATAATAC-3′ (SEQ ID NO: 156)

5′-UUGUGUAUUUGCCAUAAAUAAUAct-3′ (SEQ ID NO: 101)
3′-GAAACACAUAAACGGUAUUUAUUAUGA-5′ (SEQ ID NO: 22)

KRAS-416 Target: 5′-CTTTGTGTATTTGCCATAAATAATACT-3′ (SEQ ID NO: 157)

5′-UGUGUAUUUGCCAUAAAUAAUACta-3′ (SEQ ID NO: 102)
3′-AAACACAUAAACGGUAUUUAUUAUGAU-5′ (SEQ ID NO: 23)

KRAS-417 Target: 5′-TTTGTGTATTTGCCATAAATAATACTA-3′ (SEQ ID NO: 158)

5′-GUGUAUUUGCCAUAAAUAAUACUaa-3′ (SEQ ID NO: 103)
3′-AACACAUAAACGGUAUUUAUUAUGAUU-5′ (SEQ ID NO: 24)

KRAS-418 Target: 5′-TTGTGTATTTGCCATAAATAATACTAA-3′ (SEQ ID NO: 159)

5′-UGUAUUUGCCAUAAAUAAUACUAaa-3′ (SEQ ID NO: 104)
3′-ACACAUAAACGGUAUUUAUUAUGAUUU-5′ (SEQ ID NO: 25)

KRAS-419 Target: 5′-TGTGTATTTGCCATAAATAATACTAAA-3′ (SEQ ID NO: 160)

5′-GUAUUUGCCAUAAAUAAUACUAAat-3′ (SEQ ID NO: 105)
3′-CACAUAAACGGUAUUUAUUAUGAUUUA-5′ (SEQ ID NO: 26)

KRAS-420 Target: 5′-GTGTATTTGCCATAAATAATACTAAAT-3′ (SEQ ID NO: 161)

5′-AUAAAUAAUACUAAAUCAUUUGAag-3′ (SEQ ID NO: 106)
3′-GGUAUUUAUUAUGAUUUAGUAAACUUC-5′ (SEQ ID NO: 27)

KRAS-429 Target: 5′-CCATAAATAATACTAAATCATTTGAAG-3′ (SEQ ID NO: 162)

5′-UAAUACUAAAUCAUUUGAAGAUAtt-3′ (SEQ ID NO: 107)
3′-UUAUUAUGAUUUAGUAAACUUCUAUAA-5′ (SEQ ID NO: 28)

KRAS-434 Target: 5′-AATAATACTAAATCATTTGAAGATATT-3′ (SEQ ID NO: 163)

5′-ACUAAAUCAUUUGAAGAUAUUCAcc-3′ (SEQ ID NO: 108)
3′-UAUGAUUUAGUAAACUUCUAUAAGUGG-5′ (SEQ ID NO: 29)

KRAS-438 Target: 5′-ATACTAAATCATTTGAAGATATTCACC-3′ (SEQ ID NO: 164)

5′-UAAAUCAUUUGAAGAUAUUCACCat-3′ (SEQ ID NO: 109)
3′-UGAUUUAGUAAACUUCUAUAAGUGGUA-5′ (SEQ ID NO: 30)

KRAS-440 Target: 5′-ACTAAATCATTTGAAGATATTCACCAT-3′ (SEQ ID NO: 165)

5′-CAUUUGAAGAUAUUCACCAUUAUag-3′ (SEQ ID NO: 110)
3′-UAGUAAACUUCUAUAAGUGGUAAUAUC-5′ (SEQ ID NO: 31)

KRAS-445 Target: 5′-ATCATTTGAAGATATTCACCATTATAG-3′ (SEQ ID NO: 166)

5′-GAAGAUAUUCACCAUUAUAGAGAac-3′ (SEQ ID NO: 111)
3′-AACUUCUAUAAGUGGUAAUAUCUCUUG-5′ (SEQ ID NO: 32)

KRAS-450 Target: 5′-TTGAAGATATTCACCATTATAGAGAAC-3′ (SEQ ID NO: 167)

5′-AGAUAUUCACCAUUAUAGAGAACaa-3′ (SEQ ID NO: 112)
3′-CUUCUAUAAGUGGUAAUAUCUCUUGUU-5′ (SEQ ID NO: 33)

KRAS-452 Target: 5′-GAAGATATTCACCATTATAGAGAACAA-3′ (SEQ ID NO: 168)

5′-CUAUGGUCCUAGUAGGAAAUAAAtg-3′ (SEQ ID NO: 113)
3′-UGGAUACCAGGAUCAUCCUUUAUUUAC-5′ (SEQ ID NO: 34)

KRAS-508 Target: 5′-ACCTATGGTCCTAGTAGGAAATAAATG-3′ (SEQ ID NO: 169)

5′-GAUUUGCCUUCUAGAACAGUAGAca-3′ (SEQ ID NO: 114)
3′-CACUAAACGGAAGAUCUUGUCAUCUGU-5′ (SEQ ID NO: 35)

KRAS-534 Target: 5′-GTGATTTGCCTTCTAGAACAGTAGACA-3′ (SEQ ID NO: 170)

5′-GAUGAUGCCUUCUAUACAUUAGUtc-3′ (SEQ ID NO: 115)
3′-AACUACUACGGAAGAUAUGUAAUCAAG-5′ (SEQ ID NO: 36)

KRAS-760 Target: 5′-TTGATGATGCCTTCTATACATTAGTTC-3′ (SEQ ID NO: 171)

5′-CAUUAGUUCGAGAAAUUCGAAAAca-3′ (SEQ ID NO: 116)
3′-AUGUAAUCAAGCUCUUUAAGCUUUUGU-5′ (SEQ ID NO: 37)

KRAS-776 Target: 5′-TACATTAGTTCGAGAAATTCGAAAACA-3′ (SEQ ID NO: 172)

5′-AGAAAUUCGAAAACAUAAAGAAAag-3′ (SEQ ID NO: 117)
3′-GCUCUUUAAGCUUUUGUAUUUCUUUUC-5′ (SEQ ID NO: 38)

KRAS-786 Target: 5′-CGAGAAATTCGAAAACATAAAGAAAAG-3′ (SEQ ID NO: 173)

5′-AAAACAUAAAGAAAAGAUGAGCAaa-3′ (SEQ ID NO: 118)
3′-GCUUUUGUAUUUCUUUUCUACUCGUUU-5′ (SEQ ID NO: 39)

KRAS-795 Target: 5′-CGAAAACATAAAGAAAAGATGAGCAAA-3′ (SEQ ID NO: 174)

5′-AUAAAGAAAAGAUGAGCAAAGAUgg-3′ (SEQ ID NO: 119)
3′-UGUAUUUCUUUUCUACUCGUUUCUACC-5′ (SEQ ID NO: 40)

KRAS-800 Target: 5′-ACATAAAGAAAAGATGAGCAAAGATGG-3′ (SEQ ID NO: 175)

5′-AUAAAGAAAAGAUGAGCAAAGACgg-3′ (SEQ ID NO: 134)
3′-UGUAUUUCUUUUCUACUCGUUUCUGCC-5′ (SEQ ID NO: 140)

KRAS-800* Target: 5′-ACATAAAGAAAAGATGAGCAAAGACGG-3′ (SEQ ID NO: 176)

5′-UUGUACAUUACACUAAAUUAUUAgc-3′ (SEQ ID NO: 120)
3′-AAAACAUGUAAUGUGAUUUAAUAAUCG-5′ (SEQ ID NO: 41)

KRAS-920 Target: 5′-TTTTGTACATTACACTAAATTATTAGC-3′ (SEQ ID NO: 177)

5′-AAUUAUUAGCAUUUGUUUUAGCAtt-3′ (SEQ ID NO: 121)
3′-AUUUAAUAAUCGUAAACAAAAUCGUAA-5′ (SEQ ID NO: 42)

KRAS-935 Target: 5′-TAAATTATTAGCATTTGTTTTAGCATT-3′ (SEQ ID NO: 178)

5′-UUAGCAUUUGUUUUAGCAUUACCta-3′ (SEQ ID NO: 8)
3′-AUAAUCGUAAACAAAAUCGUAAUGGAU-5′ (SEQ ID NO: 43)

KRAS-940 Target: 5′-TATTAGCATTTGTTTTAGCATTACCTA-3′ (SEQ ID NO: 179)

5′-AGUUUUUUUUUCCUCUAAGUGCCag-3′ (SEQ ID NO: 122)
3′-CUUCAAAAAAAAAGGAGAUUCACGGUC-5′ (SEQ ID NO: 44)

KRAS-1032 Target: 5′-GAAGTTTTTTTTCCTCTAAGTGCCAG-3′ (SEQ ID NO: 180)

5′-AAGUGCCAGUAUUCCCAGAGUUUtg-3′ (SEQ ID NO: 123)
3′-GAUUCACGGUCAUAAGGGUCUCAAAAC-5′ (SEQ ID NO: 45)

KRAS-1048 Target: 5′-CTAAGTGCCAGTATTCCCAGAGTTTTG-3′ (SEQ ID NO: 181)

5′-GGUGUGAAACAAAUUAAUGAAGCtt-3′ (SEQ ID NO: 124)
3′-AACCACACUUUGUUUAAUUACUUCGAA-5′ (SEQ ID NO: 46)

KRAS-1188 Target: 5′-TTGGTGTGAAACAAATTAATGAAGCTT-3′ (SEQ ID NO: 182)

5′-AUUAAUUACUAAUUUCAGUUGAGac-3′ (SEQ ID NO: 125)
3′-CCUAAUUAAUGAUUAAAGUCAACUCUG-5′ (SEQ ID NO: 47)

KRAS-1256 Target: 5′-GGATTAATTACTAATTTCAGTTGAGAC-3′ (SEQ ID NO: 183)

5′-UAUAUUUACAUGCUACUAAAUUUtt-3′ (SEQ ID NO: 126)
3′-CGAUAUAAAUGUACGAUGAUUUAAAAA-5′ (SEQ ID NO: 48)

KRAS-1634 Target: 5′-GCTATATTTACATGCTACTAAATTTTT-3′ (SEQ ID NO: 184)

5′-UUUAACUAUUUUUGUAUAGUGUAaa-3′ (SEQ ID NO: 127)

3′-UAAAAUUGAUAAAAACAUAUCACAUUU-5′ (SEQ ID NO: 49)

KRAS-5134 Target: 5′-ATTTTAACTATTTTTGTATAGTGTAAA-3′ (SEQ ID NO: 185)

5′-CAGUGUGAUCCAGUUGUUUUCCAtc-3′ (SEQ ID NO: 128)
3′-ACGUCACACUAGGUCAACAAAAGGUAG-5′ (SEQ ID NO: 50)

KRAS-5208 Target: 5′-TGCAGTGTGATCCAGTTGTTTTCCATC-3′ (SEQ ID NO: 186)

Table 4: Additional Preferred Anti-KRAS Asymmetric DsiRNA Agents

5'-CUGAAAAUGACUGAAUAUAAACUtg-3' (SEQ ID NO: 892)
3'-ACGACUUUUACUGACUUAUAUUUGAAC-5' (SEQ ID NO: 189)

KRAS-174 Target: 5'-TGCTGAAAATGACTGAATATAAACTTG-3' (SEQ ID NO: 1595)

5'-AUGACUGAAUAUAAACUUGUGGUag-3' (SEQ ID NO: 893)
3'-UUUACUGACUUAUAUUUGAACACCAUC-5' (SEQ ID NO: 190)

KRAS-180 Target: 5'-AAATGACTGAATATAAACTTGTGGTAG-3' (SEQ ID NO: 1596)

5'-CUGAAUAUAAACUUGUGGUAGUUgg-3' (SEQ ID NO: 894)
3'-CUGACUUAUAUUUGAACACCAUCAACC-5' (SEQ ID NO: 191)

KRAS-184 Target: 5'-GACTGAATATAAACTTGTGGTAGTTGG-3' (SEQ ID NO: 1597)

5'-CUAAUUCAGAAUCAUUUUGUGGAcg-3' (SEQ ID NO: 895)
3'-UCGAUUAAGUCUUAGUAAAACACCUGC-5' (SEQ ID NO: 192)

KRAS-246 Target: 5'-AGCTAATTCAGAATCATTTTGTGGACG-3' (SEQ ID NO: 1598)

5'-GAAUAUGAUCCAACAAUAGAGGAtt-3' (SEQ ID NO: 896)
3'-UGCUUAUACUAGGUUGUUAUCUCCUAA-5' (SEQ ID NO: 193)

KRAS-270 Target: 5'-ACGAATATGATCCAACAATAGAGGATT-3' (SEQ ID NO: 1599)

5'-CAAGUAGUAAUUGAUGGAGAAACct-3' (SEQ ID NO: 897)
3'-UCGUUCAUCAUUAACUACCUCUUUGGA-5' (SEQ ID NO: 194)

KRAS-306 Target: 5'-AGCAAGTAGTAATTGATGGAGAAACCT-3' (SEQ ID NO: 1600)

5'-AGGGCUUUCUUUGUGUAUUUGCCat-3' (SEQ ID NO: 898)
3'-CCUCCCGAAAGAAACACAUAAACGGUA-5' (SEQ ID NO: 195)

KRAS-406 Target: 5'-GGAGGGCTTTCTTTGTGTATTTGCCAT-3' (SEQ ID NO: 1601)

5'-UUUGUGUAUUUGCCAUAAAUAAUac-3' (SEQ ID NO: 899)
3'-AGAAACACAUAAACGGUAUUUAUUAUG-5' (SEQ ID NO: 196)

KRAS-415 Target: 5'-TCTTTGTGTATTTGCCATAAATAATAC-3' (SEQ ID NO: 1602)

5'-UUGUGUAUUUGCCAUAAAUAAUAct-3' (SEQ ID NO: 900)
3'-GAAACACAUAAACGGUAUUUAUUAUGA-5' (SEQ ID NO: 197)

KRAS-416 Target: 5'-CTTTGTGTATTTGCCATAAATAATACT-3' (SEQ ID NO: 1603)

5'-UGUGUAUUUGCCAUAAAUAAUACta-3' (SEQ ID NO: 901)
3'-AAACACAUAAACGGUAUUUAUUAUGAU-5' (SEQ ID NO: 198)

KRAS-417 Target: 5'-TTTGTGTATTTGCCATAAATAATACTA-3' (SEQ ID NO: 1604)

5'-GUGUAUUUGCCAUAAAUAAUACUaa-3' (SEQ ID NO: 902)
3'-AACACAUAAACGGUAUUUAUUAUGAUU-5' (SEQ ID NO: 199)

KRAS-418 Target: 5'-TTGTGTATTTGCCATAAATAATACTAA-3' (SEQ ID NO: 1605)

5'-AUUUGCCAUAAAUAAUACUAAAUca-3' (SEQ ID NO: 903)
3'-CAUAAACGGUAUUUAUUAUGAUUUAGU-5' (SEQ ID NO: 200)

KRAS-422 Target: 5'-GTATTTGCCATAAATAATACTAAATCA-3' (SEQ ID NO: 1606)

5'-UUUGCCAUAAAUAAUACUAAAUCat-3' (SEQ ID NO: 904)
3'-AUAAACGGUAUUUAUUAUGAUUUAGUA-5' (SEQ ID NO: 201)

KRAS-423 Target: 5'-TATTTGCCATAAATAATACTAAATCAT-3' (SEQ ID NO: 1607)

5'-AUAAAUAAUACUAAAUCAUUUGAag-3' (SEQ ID NO: 905)
3'-GGUAUUUAUUAUGAUUUAGUAAACUUC-5' (SEQ ID NO: 202)

KRAS-429 Target: 5'-CCATAAATAATACTAAATCATTTGAAG-3' (SEQ ID NO: 1608)

5'-UAAAUAAUACUAAAUCAUUUGAAga-3' (SEQ ID NO: 906)
3'-GUAUUUAUUAUGAUUUAGUAAACUUCU-5' (SEQ ID NO: 203)

KRAS-430 Target: 5'-CATAAATAATACTAAATCATTTGAAGA-3' (SEQ ID NO: 1609)

5'-AAUAAUACUAAAUCAUUUGAAGAta-3' (SEQ ID NO: 907)
3'-AUUUAUUAUGAUUUAGUAAACUUCUAU-5' (SEQ ID NO: 204)

KRAS-432 Target: 5'-TAAATAATACTAAATCATTTGAAGATA-3' (SEQ ID NO: 1610)

5'-AUAAUACUAAAUCAUUUGAAGAUat-3' (SEQ ID NO: 908)
3'-UUUAUUAUGAUUUAGUAAACUUCUAUA-5' (SEQ ID NO: 205)

KRAS-433 Target: 5'-AAATAATACTAAATCATTTGAAGATAT-3' (SEQ ID NO: 1611)

5'-UAAUACUAAAUCAUUUGAAGAUAtt-3' (SEQ ID NO: 909)
3'-UUAUUAUGAUUUAGUAAACUUCUAUAA-5' (SEQ ID NO: 206)

KRAS-434 Target: 5'-AATAATACTAAATCATTTGAAGATATT-3' (SEQ ID NO: 1612)

5'-AAUACUAAAUCAUUUGAAGAUAUtc-3' (SEQ ID NO: 910)
3'-UAUUAUGAUUUAGUAAACUUCUAUAAG-5' (SEQ ID NO: 207)

KRAS-435 Target: 5'-ATAATACTAAATCATTTGAAGATATTC-3' (SEQ ID NO: 1613)

5'-UUGAAGAUAUUCACCAUUAUAGAga-3' (SEQ ID NO: 911)
3'-UAAACUUCUAUAAGUGGUAAUAUCUCU-5' (SEQ ID NO: 208)

KRAS-448 Target: 5'-ATTTGAAGATATTCACCATTATAGAGA-3' (SEQ ID NO: 1614)

5'-GAAGAUAUUCACCAUUAUAGAGAac-3' (SEQ ID NO: 912)
3'-AACUUCUAUAAGUGGUAAUAUCUCUUG-5' (SEQ ID NO: 209)

KRAS-450 Target: 5'-TTGAAGATATTCACCATTATAGAGAAC-3' (SEQ ID NO: 1615)

5'-AAGAUAUUCACCAUUAUAGAGAAca-3' (SEQ ID NO: 913)
3'-ACUUCUAUAAGUGGUAAUAUCUCUUGU-5' (SEQ ID NO: 210)

KRAS-451 Target: 5'-TGAAGATATTCACCATTATAGAGAACA-3' (SEQ ID NO: 1616)

5'-AGAUAUUCACCAUUAUAGAGAACaa-3' (SEQ ID NO: 914)
3'-CUUCUAUAAGUGGUAAUAUCUCUUGUU-5' (SEQ ID NO: 211)

KRAS-452 Target: 5'-GAAGATATTCACCATTATAGAGAACAA-3' (SEQ ID NO: 1617)

5'-GAUAUUCACCAUUAUAGAGAACAaa-3' (SEQ ID NO: 915)
3'-UUCUAUAAGUGGUAAUAUCUCUUGUUU-5' (SEQ ID NO: 212)

KRAS-453 Target: 5'-AAGATATTCACCATTATAGAGAACAAA-3' (SEQ ID NO: 1618)

5'-AUUAUAGAGAACAAAUUAAAAGAgt-3' (SEQ ID NO: 916)
3'-GGUAAUAUCUCUUGUUUAAUUUUCUCA-5' (SEQ ID NO: 213)

KRAS-463 Target: 5'-CCATTATAGAGAACAAATTAAAAGAGT-3' (SEQ ID NO: 1619)

5'-UAUAGAGAACAAAUUAAAAGAGUta-3' (SEQ ID NO: 917)
3'-UAAUAUCUCUUGUUUAAUUUUCUCAAU-5' (SEQ ID NO: 214)

KRAS-465 Target: 5'-ATTATAGAGAACAAATTAAAAGAGTTA-3' (SEQ ID NO: 1620)

5'-AUAGAGAACAAAUUAAAAGAGUUaa-3' (SEQ ID NO: 918)
3'-AAUAUCUCUUGUUUAAUUUUCUCAAUU-5' (SEQ ID NO: 215)

KRAS-466 Target: 5'-TTATAGAGAACAAATTAAAAGAGTTAA-3' (SEQ ID NO: 1621)

5'-UAGAGAACAAAUUAAAAGAGUUAag-3' (SEQ ID NO: 919)
3'-AUAUCUCUUGUUUAAUUUUCUCAAUUC-5' (SEQ ID NO: 216)

KRAS-467 Target: 5'-TATAGAGAACAAATTAAAAGAGTTAAG-3' (SEQ ID NO: 1622)

5'-AGAGAACAAAUUAAAAGAGUUAAgg-3' (SEQ ID NO: 920)
3'-UAUCUCUUGUUUAAUUUUCUCAAUUCC-5' (SEQ ID NO: 217)

KRAS-468 Target: 5'-ATAGAGAACAAATTAAAAGAGTTAAGG-3' (SEQ ID NO: 1623)

5'-AGUAGGAAAUAAAUGUGAUUUGCct-3' (SEQ ID NO: 921)
3'-GAUCAUCCUUUAUUUACACUAAACGGA-5' (SEQ ID NO: 218)

KRAS-518 Target: 5'-CTAGTAGGAAATAAATGTGATTTGCCT-3' (SEQ ID NO: 1624)

5'-GUAGGAAAUAAAUGUGAUUUGCCtt-3' (SEQ ID NO: 922)
3'-AUCAUCCUUUAUUUACACUAAACGGAA-5' (SEQ ID NO: 219)

KRAS-519 Target: 5'-TAGTAGGAAATAAATGTGATTTGCCTT-3' (SEQ ID NO: 1625)

5'-GAAGUUAUGGAAUUCCUUUUAUUga-3' (SEQ ID NO: 923)
3'-UUCUUCAAUACCUUAAGGAAAAUAACU-5' (SEQ ID NO: 220)

KRAS-583 Target: 5'-AAGAAGTTATGGAATTCCTTTTATTGA-3' (SEQ ID NO: 1626)

5'-GUUAUGGAAUUCCUUUUAUUGAAac-3' (SEQ ID NO: 924)
3'-UUCAAUACCUUAAGGAAAAUAACUUUG-5' (SEQ ID NO: 221)

KRAS-586 Target: 5'-AAGTTATGGAATTCCTTTTATTGAAAC-3' (SEQ ID NO: 1627)

5'-UUAUGGAAUUCCUUUUAUUGAAAca-3' (SEQ ID NO: 925)
3'-UCAAUACCUUAAGGAAAAUAACUUUGU-5' (SEQ ID NO: 222)

KRAS-587 Target: 5'-AGTTATGGAATTCCTTTTATTGAAACA-3' (SEQ ID NO: 1628)

5'-UAUGGAAUUCCUUUUAUUGAAACat-3' (SEQ ID NO: 926)

3'-CAAUACCUUAAGGAAAAUAACUUUGUA-5' (SEQ ID NO: 223)

KRAS-588 Target: 5'-GTTATGGAATTCCTTTTATTGAAACAT-3' (SEQ ID NO: 1629)

5'-AUGGAAUUCCUUUUAUUGAAACAtc-3' (SEQ ID NO: 927)
3'-AAUACCUUAAGGAAAAUAACUUUGUAG-5' (SEQ ID NO: 224)

KRAS-589 Target: 5'-TTATGGAATTCCTTTTATTGAAACATC-3' (SEQ ID NO: 1630)

5'-GAGGAUGCUUUUUAUACAUUGGUga-3' (SEQ ID NO: 928)
3'-ACCUCCUACGAAAAAUAUGUAACCACU-5' (SEQ ID NO: 225)

KRAS-636 Target: 5'-TGGAGGATGCTTTTTATACATTGGTGA-3' (SEQ ID NO: 1631)

5'-GGAUGCUUUUUAUACAUUGGUGAgg-3' (SEQ ID NO: 929)
3'-CUCCUACGAAAAAUAUGUAACCACUCC-5' (SEQ ID NO: 226)

KRAS-638 Target: 5'-GAGGATGCTTTTTATACATTGGTGAGG-3' (SEQ ID NO: 1632)

5'-AGAUUGAAAAAAAUCAGCAAAGAag-3' (SEQ ID NO: 930)
3'-UGUCUAACUUUUUUUAGUCGUUUCUUC-5' (SEQ ID NO: 227)

KRAS-678 Target: 5'-ACAGATTGAAAAAAATCAGCAAAGAAG-3' (SEQ ID NO: 1633)

5'-GAUUGAAAAAAAUCAGCAAAGAAga-3' (SEQ ID NO: 931)
3'-GUCUAACUUUUUUUAGUCGUUUCUUCU-5' (SEQ ID NO: 228)

KRAS-679 Target: 5'-CAGATTGAAAAAAATCAGCAAAGAAGA-3' (SEQ ID NO: 1634)

5'-UUGAAAAAAAUCAGCAAAGAAGAaa-3' (SEQ ID NO: 932)
3'-CUAACUUUUUUUAGUCGUUUCUUCUUU-5' (SEQ ID NO: 229)

KRAS-681 Target: 5'-GATTGAAAAAAATCAGCAAAGAAGAAA-3' (SEQ ID NO: 1635)

5'-UGAAAAAAAUCAGCAAAGAAGAAaa-3' (SEQ ID NO: 933)
3'-UAACUUUUUUUAGUCGUUUCUUCUUUU-5' (SEQ ID NO: 230)

KRAS-682 Target: 5'-ATTGAAAAAAATCAGCAAAGAAGAAAA-3' (SEQ ID NO: 1636)

5'-GAAAAAAAUCAGCAAAGAAGAAAag-3' (SEQ ID NO: 934)
3'-AACUUUUUUUAGUCGUUUCUUCUUUUC-5' (SEQ ID NO: 231)

KRAS-683 Target: 5'-TTGAAAAAAATCAGCAAAGAAGAAAAG-3' (SEQ ID NO: 1637)

5'-AAAAAAAUCAGCAAAGAAGAAAAga-3' (SEQ ID NO: 935)
3'-ACUUUUUUUAGUCGUUUCUUCUUUUCU-5' (SEQ ID NO: 232)

KRAS-684 Target: 5'-TGAAAAAAATCAGCAAAGAAGAAAAGA-3' (SEQ ID NO: 1638)

5'-CUGGCUGUGUGAAAAUUAAAAAAtg-3' (SEQ ID NO: 936)
3'-AGGACCGACACACUUUUAAUUUUUUAC-5' (SEQ ID NO: 233)

KRAS-712 Target: 5'-TCCTGGCTGTGTGAAAATTAAAAAATG-3' (SEQ ID NO: 1639)

5'-CUGUGUGAAAAUUAAAAAAUGCAtt-3' (SEQ ID NO: 937)
3'-CCGACACACUUUUAAUUUUUUACGUAA-5' (SEQ ID NO: 234)

KRAS-716 Target: 5'-GGCTGTGTGAAAATTAAAAAATGCATT-3' (SEQ ID NO: 1640)

5'-GUGAAAAUUAAAAAAUGCAUUAUaa-3' (SEQ ID NO: 938)
3'-CACACUUUUAAUUUUUUACGUAAUAUU-5' (SEQ ID NO: 235)

KRAS-720 Target: 5'-GTGTGAAAATTAAAAAATGCATTATAA-3' (SEQ ID NO: 1641)

5'-UGAAAAUUAAAAAAUGCAUUAUAat-3' (SEQ ID NO: 939)
3'-ACACUUUUAAUUUUUUACGUAAUAUUA-5' (SEQ ID NO: 236)

KRAS-721 Target: 5'-TGTGAAAATTAAAAAATGCATTATAAT-3' (SEQ ID NO: 1642)

5'-GAAAAUUAAAAAAUGCAUUAUAAtg-3' (SEQ ID NO: 940)
3'-CACUUUUAAUUUUUUACGUAAUAUUAC-5' (SEQ ID NO: 237)

KRAS-722 Target: 5'-GTGAAAATTAAAAAATGCATTATAATG-3' (SEQ ID NO: 1643)

5'-AAAAUUAAAAAAUGCAUUAUAAUgt-3' (SEQ ID NO: 941)
3'-ACUUUUAAUUUUUUACGUAAUAUUACA-5' (SEQ ID NO: 238)

KRAS-723 Target: 5'-TGAAAATTAAAAAATGCATTATAATGT-3' (SEQ ID NO: 1644)

5'-AAUUAAAAAAAUGCAUUAUAAUGUaa-3' (SEQ ID NO: 942)
3'-UUUUAAUUUUUUACGUAAUAUUACAUU-5' (SEQ ID NO: 239)

KRAS-725 Target: 5'-AAAATTAAAAAATGCATTATAATGTAA-3' (SEQ ID NO: 1645)

5'-AUUAAAAAAAUGCAUUAUAAUGUAat-3' (SEQ ID NO: 943)
3'-UUUAAUUUUUUACGUAAUAUUACAUUA-5' (SEQ ID NO: 240)

KRAS-726 Target: 5'-AAATTAAAAAATGCATTATAATGTAAT-3' (SEQ ID NO: 1646)

5'-UUAAAAAAAUGCAUUAUAAUGUAAtc-3' (SEQ ID NO: 944)
3'-UUAAUUUUUUACGUAAUAUUACAUUAG-5' (SEQ ID NO: 241)

KRAS-727 Target: 5'-AATTAAAAAATGCATTATAATGTAATC-3' (SEQ ID NO: 1647)

5'-UAAAAAAUGCAUUAUAAUGUAAUct-3' (SEQ ID NO: 945)
3'-UAAUUUUUUACGUAAUAUUACAUUAGA-5' (SEQ ID NO: 242)

KRAS-728 Target: 5'-ATTAAAAAATGCATTATAATGTAATCT-3' (SEQ ID NO: 1648)

5'-AAAAAUGCAUUAUAAUGUAAUCUgg-3' (SEQ ID NO: 946)
3'-AUUUUUUACGUAAUAUUACAUUAGACC-5' (SEQ ID NO: 243)

KRAS-730 Target: 5'-TAAAAAATGCATTATAATGTAATCTGG-3' (SEQ ID NO: 1649)

5'-CAUUAUAAUGUAAUCUGGGUGUUga-3' (SEQ ID NO: 947)
3'-ACGUAAUAUUACAUUAGACCCACAACU-5' (SEQ ID NO: 244)

KRAS-737 Target: 5'-TGCATTATAATGTAATCTGGGTGTTGA-3' (SEQ ID NO: 1650)

5'-CGAGAAAUUCGAAAACAUAAAGAaa-3' (SEQ ID NO: 948)
3'-AAGCUCUUUAAGCUUUUGUAUUUCUUU-5' (SEQ ID NO: 245)

KRAS-784 Target: 5'-TTCGAGAAATTCGAAAACATAAAGAAA-3' (SEQ ID NO: 1651)

5'-GAGAAAUUCGAAAACAUAAAGAAaa-3' (SEQ ID NO: 949)
3'-AGCUCUUUAAGCUUUUGUAUUUCUUUU-5' (SEQ ID NO: 246)

KRAS-785 Target: 5'-TCGAGAAATTCGAAAACATAAAGAAAA-3' (SEQ ID NO: 1652)

5'-AGAAAUUCGAAAACAUAAAGAAAag-3' (SEQ ID NO: 950)
3'-GCUCUUUAAGCUUUUGUAUUUCUUUUC-5' (SEQ ID NO: 247)

KRAS-786 Target: 5'-CGAGAAATTCGAAAACATAAAGAAAAG-3' (SEQ ID NO: 1653)

5'-AAUUCGAAAACAUAAAGAAAAGAtg-3' (SEQ ID NO: 951)
3'-CUUUAAGCUUUUGUAUUUCUUUUCUAC-5' (SEQ ID NO: 248)

KRAS-789 Target: 5'-GAAATTCGAAAACATAAAGAAAAGATG-3' (SEQ ID NO: 1654)

5'-GAAAACAUAAAGAAAAGAUGAGCaa-3' (SEQ ID NO: 952)
3'-AGCUUUUGUAUUUCUUUUCUACUCGUU-5' (SEQ ID NO: 249)

KRAS-794 Target: 5'-TCGAAAACATAAAGAAAAGATGAGCAA-3' (SEQ ID NO: 1655)

5'-AAAACAUAAAGAAAAGAUGAGCAaa-3' (SEQ ID NO: 953)
3'-GCUUUUGUAUUUCUUUUCUACUCGUUU-5' (SEQ ID NO: 250)

KRAS-795 Target: 5'-CGAAAACATAAAGAAAAGATGAGCAAA-3' (SEQ ID NO: 1656)

5'-AGAUGGUAAAAAGAAGAAAAAGAag-3' (SEQ ID NO: 954)
3'-UUUCUACCAUUUUUCUUCUUUUUCUUC-5' (SEQ ID NO: 251)

KRAS-819 Target: 5'-AAAGATGGTAAAAAGAAGAAAAAGAAG-3' (SEQ ID NO: 1657)

5'-GAUGGUAAAAAGAAGAAAAAGAAgt-3' (SEQ ID NO: 955)
3'-UUCUACCAUUUUUCUUCUUUUUCUUCA-5' (SEQ ID NO: 252)

KRAS-820 Target: 5'-AAGATGGTAAAAAGAAGAAAAAGAAGT-3' (SEQ ID NO: 1658)

5'-UGGUAAAAAGAAGAAAAAGAAGUca-3' (SEQ ID NO: 956)
3'-CUACCAUUUUUCUUCUUUUUCUUCAGU-5' (SEQ ID NO: 253)

KRAS-822 Target: 5'-GATGGTAAAAAGAAGAAAAAGAAGTCA-3' (SEQ ID NO: 1659)

5'-GGUAAAAAGAAGAAAAAGAAGUCaa-3' (SEQ ID NO: 957)
3'-UACCAUUUUUCUUCUUUUUCUUCAGUU-5' (SEQ ID NO: 254)

KRAS-823 Target: 5'-ATGGTAAAAAGAAGAAAAAGAAGTCAA-3' (SEQ ID NO: 1660)

5'-AAAGAAGAAAAAGAAGUCAAAGAca-3' (SEQ ID NO: 958)
3'-UUUUUCUUCUUUUUCUUCAGUUUCUGU-5' (SEQ ID NO: 255)

KRAS-828 Target: 5'-AAAAAGAAGAAAAAGAAGTCAAAGACA-3' (SEQ ID NO: 1661)

5'-AAGAAGAAAAAGAAGUCAAAGACaa-3' (SEQ ID NO: 959)
3'-UUUUCUUCUUUUUCUUCAGUUUCUGUU-5' (SEQ ID NO: 256)

KRAS-829 Target: 5'-AAAAGAAGAAAAAGAAGTCAAAGACAA-3' (SEQ ID NO: 1662)

5'-AGAAGAAAAAGAAGUCAAAGACAaa-3' (SEQ ID NO: 960)
3'-UUUCUUCUUUUUCUUCAGUUUCUGUUU-5' (SEQ ID NO: 257)

KRAS-830 Target: 5'-AAAGAAGAAAAAGAAGTCAAAGACAAA-3' (SEQ ID NO: 1663)

5'-AAAGACAAAGUGUGUAAUUAUGUaa-3' (SEQ ID NO: 961)
3'-AGUUUCUGUUUCACACAUUAAUACAUU-5' (SEQ ID NO: 258)

KRAS-846 Target: 5'-TCAAAGACAAAGTGTGTAATTATGTAA-3' (SEQ ID NO: 1664)

5'-AAGACAAAGUGUGUAAUUAUGUAaa-3' (SEQ ID NO: 962)
3'-GUUUCUGUUUCACACAUUAAUACAUUU-5' (SEQ ID NO: 259)

KRAS-847 Target: 5'-CAAAGACAAAGTGTGTAATTATGTAAA-3' (SEQ ID NO: 1665)

5'-CAAAGUGUGUAAUUAUGUAAAUAca-3' (SEQ ID NO: 963)
3'-CUGUUUCACACAUUAAUACAUUUAUGU-5' (SEQ ID NO: 260)

KRAS-851 Target: 5'-GACAAAGTGTGTAATTATGTAAATACA-3' (SEQ ID NO: 1666)

5'-AAGUGUGUAAUUAUGUAAAUACAat-3' (SEQ ID NO: 964)
3'-GUUUCACACAUUAAUACAUUUAUGUUA-5' (SEQ ID NO: 261)

KRAS-853 Target: 5'-CAAAGTGTGTAATTATGTAAATACAAT-3' (SEQ ID NO: 1667)

5'-GUGUAAUUAUGUAAAUACAAUUUgt-3' (SEQ ID NO: 965)
3'-CACACAUUAAUACAUUUAUGUUAAACA-5' (SEQ ID NO: 262)

KRAS-857 Target: 5'-GTGTGTAATTATGTAAATACAATTTGT-3' (SEQ ID NO: 1668)

5'-GUAAUUAUGUAAAUACAAUUUGUac-3' (SEQ ID NO: 966)
3'-CACAUUAAUACAUUUAUGUUAAACAUG-5' (SEQ ID NO: 263)

KRAS-859 Target: 5'-GTGTAATTATGTAAATACAATTTGTAC-3' (SEQ ID NO: 1669)

5'-AAUUAUGUAAAUACAAUUUGUACtt-3' (SEQ ID NO: 967)
3'-CAUUAAUACAUUUAUGUUAAACAUGAA-5' (SEQ ID NO: 264)

KRAS-861 Target: 5'-GTAATTATGTAAATACAATTTGTACTT-3' (SEQ ID NO: 1670)

5'-AUUAUGUAAAUACAAUUUGUACUtt-3' (SEQ ID NO: 968)
3'-AUUAAUACAUUUAUGUUAAACAUGAAA-5' (SEQ ID NO: 265)

KRAS-862 Target: 5'-TAATTATGTAAATACAATTTGTACTTT-3' (SEQ ID NO: 1671)

5'-UGUAAAUACAAUUUGUACUUUUUtc-3' (SEQ ID NO: 969)
3'-AUACAUUUAUGUUAAACAUGAAAAAAG-5' (SEQ ID NO: 266)

KRAS-866 Target: 5'-TATGTAAATACAATTTGTACTTTTTTC-3' (SEQ ID NO: 1672)

5'-GUAAAUACAAUUUGUACUUUUUUct-3' (SEQ ID NO: 970)
3'-UACAUUUAUGUUAAACAUGAAAAAAGA-5' (SEQ ID NO: 267)

KRAS-867 Target: 5'-ATGTAAATACAATTTGTACTTTTTTCT-3' (SEQ ID NO: 1673)

5'-UAAAUACAAUUUGUACUUUUUUCtt-3' (SEQ ID NO: 971)
3'-ACAUUUAUGUUAAACAUGAAAAAAGAA-5' (SEQ ID NO: 268)

KRAS-868 Target: 5'-TGTAAATACAATTTGTACTTTTTTCTT-3' (SEQ ID NO: 1674)

5'-AAAUACAAUUUGUACUUUUUUCUta-3' (SEQ ID NO: 972)
3'-CAUUUAUGUUAAACAUGAAAAAAGAAU-5' (SEQ ID NO: 269)

KRAS-869 Target: 5'-GTAAATACAATTTGTACTTTTTTCTTA-3' (SEQ ID NO: 1675)

5'-AAUUUGUACUUUUUUCUUAAGGCat-3' (SEQ ID NO: 973)
3'-UGUUAAACAUGAAAAAAGAAUUCCGUA-5' (SEQ ID NO: 270)

KRAS-875 Target: 5'-ACAATTTGTACTTTTTTCTTAAGGCAT-3' (SEQ ID NO: 1676)

5'-AUUUGUACUUUUUUCUUAAGGCAta-3' (SEQ ID NO: 974)
3'-GUUAAACAUGAAAAAAGAAUUCCGUAU-5' (SEQ ID NO: 271)

KRAS-876 Target: 5'-CAATTTGTACTTTTTTCTTAAGGCATA-3' (SEQ ID NO: 1677)

5'-CUAGUACAAGUGGUAAUUUUUGUac-3' (SEQ ID NO: 975)
3'-AUGAUCAUGUUCACCAUUAAAAAACAUG-5' (SEQ ID NO: 272)

KRAS-901 Target: 5'-TACTAGTACAAGTGGTAATTTTTGTAC-3' (SEQ ID NO: 1678)

5'-UAGUACAAGUGGUAAUUUUUGUAca-3' (SEQ ID NO: 976)
3'-UGAUCAUGUUCACCAUUAAAAACAUGU-5' (SEQ ID NO: 273)

KRAS-902 Target: 5'-ACTAGTACAAGTGGTAATTTTTGTACA-3' (SEQ ID NO: 1679)

5'-AAGUGGUAAUUUUUGUACAUUACac-3' (SEQ ID NO: 977)
3'-UGUUCACCAUUAAAAACAUGUAAUGUG-5' (SEQ ID NO: 274)

KRAS-908 Target: 5'-ACAAGTGGTAATTTTTGTACATTACAC-3' (SEQ ID NO: 1680)

5'-AGUGGUAAUUUUUGUACAUUACAct-3' (SEQ ID NO: 978)
3'-GUUCACCAUUAAAAACAUGUAAUGUGA-5' (SEQ ID NO: 275)

KRAS-909 Target: 5'-CAAGTGGTAATTTTTGTACATTACACT-3' (SEQ ID NO: 1681)

5'-AUUUUUGUACAUUACACUAAAUUat-3' (SEQ ID NO: 979)

3'-AUUAAAAACAUGUAAUGUGAUUUAAUA-5' (SEQ ID NO: 276)

KRAS-916 Target: 5'-TAATTTTTGTACATTACACTAAATTAT-3' (SEQ ID NO: 1682)

5'-UUUUUGUACAUUACACUAAAUUAtt-3' (SEQ ID NO: 980)
3'-UUAAAAACAUGUAAUGUGAUUUAAUAA-5' (SEQ ID NO: 277)

KRAS-917 Target: 5'-AATTTTTGTACATTACACTAAATTATT-3' (SEQ ID NO: 1683)

5'-UUUUGUACAUUACACUAAAUUAUta-3' (SEQ ID NO: 981)
3'-UAAAAACAUGUAAUGUGAUUUAAUAAU-5' (SEQ ID NO: 278)

KRAS-918 Target: 5'-ATTTTTGTACATTACACTAAATTATTA-3' (SEQ ID NO: 1684)

5'-UUUGUACAUUACACUAAAUUAUUag-3' (SEQ ID NO: 982)
3'-AAAAACAUGUAAUGUGAUUUAAUAAUC-5' (SEQ ID NO: 279)

KRAS-919 Target: 5'-TTTTTGTACATTACACTAAATTATTAG-3' (SEQ ID NO: 1685)

5'-UUGUACAUUACACUAAAUUAUUAgc-3' (SEQ ID NO: 983)
3'-AAAACAUGUAAUGUGAUUUAAUAAUCG-5' (SEQ ID NO: 280)

KRAS-920 Target: 5'-TTTTGTACATTACACTAAATTATTAGC-3' (SEQ ID NO: 1686)

5'-CUAAAUUAUUAGCAUUUGUUUUAgc-3' (SEQ ID NO: 984)
3'-GUGAUUUAAUAAUCGUAAACAAAAUCG-5' (SEQ ID NO: 281)

KRAS-932 Target: 5'-CACTAAATTATTAGCATTTGTTTTAGC-3' (SEQ ID NO: 1687)

5'-AAAUUAUUAGCAUUUGUUUUAGCat-3' (SEQ ID NO: 985)
3'-GAUUUAAUAAUCGUAAACAAAAUCGUA-5' (SEQ ID NO: 282)

KRAS-934 Target: 5'-CTAAATTATTAGCATTTGTTTTAGCAT-3' (SEQ ID NO: 1688)

5'-AAUUAUUAGCAUUUGUUUUAGCAtt-3' (SEQ ID NO: 986)
3'-AUUUAAUAAUCGUAAACAAAAUCGUAA-5' (SEQ ID NO: 283)

KRAS-935 Target: 5'-TAAATTATTAGCATTTGTTTTAGCATT-3' (SEQ ID NO: 1689)

5'-UUAGCAUUUGUUUUAGCAUUACCta-3' (SEQ ID NO: 987)
3'-AUAAUCGUAAACAAAAUCGUAAUGGAU-5' (SEQ ID NO: 284)

KRAS-940 Target: 5'-TATTAGCATTTGTTTTAGCATTACCTA-3' (SEQ ID NO: 1690)

5'-UUUGUUUUAGCAUUACCUAAUUUtt-3' (SEQ ID NO: 988)
3'-GUAAACAAAAUCGUAAUGGAUUAAAAA-5' (SEQ ID NO: 285)

KRAS-946 Target: 5'-CATTTGTTTTAGCATTACCTAATTTTT-3' (SEQ ID NO: 1691)

5'-UUGUUUUAGCAUUACCUAAUUUUtt-3' (SEQ ID NO: 989)
3'-UAAACAAAAUCGUAAUGGAUUAAAAAA-5' (SEQ ID NO: 286)

KRAS-947 Target: 5'-ATTTGTTTTAGCATTACCTAATTTTTT-3' (SEQ ID NO: 1692)

5'-GUUUUAGCAUUACCUAAUUUUUUtc-3' (SEQ ID NO: 990)
3'-AACAAAAUCGUAAUGGAUUAAAAAAAG-5' (SEQ ID NO: 287)

KRAS-949 Target: 5'-TTGTTTTAGCATTACCTAATTTTTTTC-3' (SEQ ID NO: 1693)

5'-UUUUAGCAUUACCUAAUUUUUUUcc-3' (SEQ ID NO: 991)
3'-ACAAAAUCGUAAUGGAUUAAAAAAAGG-5' (SEQ ID NO: 288)

KRAS-950 Target: 5'-TGTTTTAGCATTACCTAATTTTTTTCC-3' (SEQ ID NO: 1694)

5'-UUUAGCAUUACCUAAUUUUUUUCct-3' (SEQ ID NO: 992)
3'-CAAAAUCGUAAUGGAUUAAAAAAAGGA-5' (SEQ ID NO: 289)

KRAS-951 Target: 5'-GTTTTAGCATTACCTAATTTTTTTCCT-3' (SEQ ID NO: 1695)

5'-UUAGCAUUACCUAAUUUUUUUCCtg-3' (SEQ ID NO: 993)
3'-AAAAUCGUAAUGGAUUAAAAAAAGGAC-5' (SEQ ID NO: 290)

KRAS-952 Target: 5'-TTTTAGCATTACCTAATTTTTTTCCTG-3' (SEQ ID NO: 1696)

5'-CUGUUAGCUUUUACCUUAAAUGCtt-3' (SEQ ID NO: 994)
3'-CUGACAAUCGAAAAUGGAAUUUACGAA-5' (SEQ ID NO: 291)

KRAS-988 Target: 5'-GACTGTTAGCTTTTACCTTAAATGCTT-3' (SEQ ID NO: 1697)

5'-UGUUAGCUUUUACCUUAAAUGCUta-3' (SEQ ID NO: 995)
3'-UGACAAUCGAAAAUGGAAUUUACGAAU-5' (SEQ ID NO: 292)

KRAS-989 Target: 5'-ACTGTTAGCTTTTACCTTAAATGCTTA-3' (SEQ ID NO: 1698)

5'-CUUUUACCUUAAAUGCUUAUUUUaa-3' (SEQ ID NO: 996)
3'-UCGAAAAUGGAAUUUACGAAUAAAAUU-5' (SEQ ID NO: 293)

KRAS-995 Target: 5'-AGCTTTTACCTTAAATGCTTATTTTAA-3' (SEQ ID NO: 1699)

5'-UUUUACCUUAAAUGCUUAUUUUAaa-3' (SEQ ID NO: 997)
3'-CGAAAAUGGAAUUUACGAAUAAAAUUU-5' (SEQ ID NO: 294)

KRAS-996 Target: 5'-GCTTTTACCTTAAATGCTTATTTTAAA-3' (SEQ ID NO: 1700)

5'-UUUACCUUAAAUGCUUAUUUUAAaa-3' (SEQ ID NO: 998)
3'-GAAAAUGGAAUUUACGAAUAAAAUUUU-5' (SEQ ID NO: 295)

KRAS-997 Target: 5'-CTTTTACCTTAAATGCTTATTTTAAAA-3' (SEQ ID NO: 1701)

5'-UUAAAUGCUUAUUUUAAAAUGACag-3' (SEQ ID NO: 999)
3'-GGAAUUUACGAAUAAAAUUUUACUGUC-5' (SEQ ID NO: 296)

KRAS-1003 Target: 5'-CCTTAAATGCTTATTTTAAAATGACAG-3' (SEQ ID NO: 1702)

5'-UAAAUGCUUAUUUUAAAAUGACAgt-3' (SEQ ID NO: 1000)
3'-GAAUUUACGAAUAAAAUUUUACUGUCA-5' (SEQ ID NO: 297)

KRAS-1004 Target: 5'-CTTAAATGCTTATTTTAAAATGACAGT-3' (SEQ ID NO: 1703)

5'-CUUAUUUUAAAAUGACAGUGGAAgt-3' (SEQ ID NO: 1001)
3'-ACGAAUAAAAUUUUACUGUCACCUUCA-5' (SEQ ID NO: 298)

KRAS-1010 Target: 5'-TGCTTATTTTAAAATGACAGTGGAAGT-3' (SEQ ID NO: 1704)

5'-UAUUUUAAAAUGACAGUGGAAGUtt-3' (SEQ ID NO: 1002)
3'-GAAUAAAAUUUUACUGUCACCUUCAAA-5' (SEQ ID NO: 299)

KRAS-1012 Target: 5'-CTTATTTTAAAATGACAGTGGAAGTTT-3' (SEQ ID NO: 1705)

5'-GGAAGUUUUUUUUCCUCUAAGUgc-3' (SEQ ID NO: 1003)
3'-CACCUUCAAAAAAAAAGGAGAUUCACG-5' (SEQ ID NO: 300)

KRAS-1029 Target: 5'-GTGGAAGTTTTTTTTCCTCTAAGTGC-3' (SEQ ID NO: 1706)

5'-AAGUUUUUUUUCCUCUAAGUGCca-3' (SEQ ID NO: 1004)
3'-CCUUCAAAAAAAAAGGAGAUUCACGGU-5' (SEQ ID NO: 301)

KRAS-1031 Target: 5'-GGAAGTTTTTTTTCCTCTAAGTGCCA-3' (SEQ ID NO: 1707)

5'-AGUUUUUUUUCCUCUAAGUGCCag-3' (SEQ ID NO: 1005)
3'-CUUCAAAAAAAAAGGAGAUUCACGGUC-5' (SEQ ID NO: 302)

KRAS-1032 Target: 5'-GAAGTTTTTTTTCCTCTAAGTGCCAG-3' (SEQ ID NO: 1708)

5'-UUGGUUUUUGAACUAGCAAUGCCtg-3' (SEQ ID NO: 1006)
3'-AAAACCAAAAACUUGAUCGUUACGGAC-5' (SEQ ID NO: 303)

KRAS-1070 Target: 5'-TTTTGGTTTTTGAACTAGCAATGCCTG-3' (SEQ ID NO: 1709)

5'-CUGUGAAAAAGAAACUGAAUACCta-3' (SEQ ID NO: 1007)
3'-CGGACACUUUUUCUUUGACUUAUGGAU-5' (SEQ ID NO: 304)

KRAS-1092 Target: 5'-GCCTGTGAAAAAGAAACTGAATACCTA-3' (SEQ ID NO: 1710)

5'-AAAGAAACUGAAUACCUAAGAUUtc-3' (SEQ ID NO: 1008)
3'-UUUUUCUUUGACUUAUGGAUUCUAAAG-5' (SEQ ID NO: 305)

KRAS-1099 Target: 5'-AAAAAGAAACTGAATACCTAAGATTTC-3' (SEQ ID NO: 1711)

5'-AAGAAACUGAAUACCUAAGAUUUct-3' (SEQ ID NO: 1009)
3'-UUUUCUUUGACUUAUGGAUUCUAAAGA-5' (SEQ ID NO: 306)

KRAS-1100 Target: 5'-AAAAGAAACTGAATACCTAAGATTTCT-3' (SEQ ID NO: 1712)

5'-CUGAAUACCUAAGAUUUCUGUCUtg-3' (SEQ ID NO: 1010)
3'-UUGACUUAUGGAUUCUAAAGACAGAAC-5' (SEQ ID NO: 307)

KRAS-1106 Target: 5'-AACTGAATACCTAAGATTTCTGTCTTG-3' (SEQ ID NO: 1713)

5'-CAGUUGAUUACUUCUUAUUUUUCtt-3' (SEQ ID NO: 1011)
3'-ACGUCAACUAAUGAAGAAUAAAAAGAA-5' (SEQ ID NO: 308)

KRAS-1147 Target: 5'-TGCAGTTGATTACTTCTTATTTTTCTT-3' (SEQ ID NO: 1714)

5'-AGUUGAUUACUUCUUAUUUUUCUta-3' (SEQ ID NO: 1012)
3'-CGUCAACUAAUGAAGAAUAAAAAGAAU-5' (SEQ ID NO: 309)

KRAS-1148 Target: 5'-GCAGTTGATTACTTCTTATTTTTCTTA-3' (SEQ ID NO: 1715)

5'-GAUUACUUCUUAUUUUUCUUACCaa-3' (SEQ ID NO: 1013)
3'-AACUAAUGAAGAAUAAAAAGAAUGGUU-5' (SEQ ID NO: 310)

KRAS-1152 Target: 5'-TTGATTACTTCTTATTTTTCTTACCAA-3' (SEQ ID NO: 1716)

5'-CUUAUUUUUCUUACCAAUUGUGAat-3' (SEQ ID NO: 1014)
3'-AAGAAUAAAAAGAAUGGUUAACACUUA-5' (SEQ ID NO: 311)

KRAS-1160 Target: 5'-TTCTTATTTTTCTTACCAATTGTGAAT-3' (SEQ ID NO: 1717)

5'-UUAUUUUUCUUACCAAUUGUGAAtg-3' (SEQ ID NO: 1015)
3'-AGAAUAAAAAGAAUGGUUAACACUUAC-5' (SEQ ID NO: 312)

KRAS-1161 Target: 5'-TCTTATTTTTCTTACCAATTGTGAATG-3' (SEQ ID NO: 1718)

5'-UAUUUUUCUUACCAAUUGUGAAUgt-3' (SEQ ID NO: 1016)
3'-GAAUAAAAAGAAUGGUUAACACUUACA-5' (SEQ ID NO: 313)

KRAS-1162 Target: 5'-CTTATTTTTCTTACCAATTGTGAATGT-3' (SEQ ID NO: 1719)

5'-GUUGGUGUGAAACAAAUUAAUGAag-3' (SEQ ID NO: 1017)
3'-UACAACCACACUUUGUUUAAUUACUUC-5' (SEQ ID NO: 314)

KRAS-1185 Target: 5'-ATGTTGGTGTGAAACAAATTAATGAAG-3' (SEQ ID NO: 1720)

5'-GGUGUGAAACAAAUUAAUGAAGCtt-3' (SEQ ID NO: 1018)
3'-AACCACACUUUGUUUAAUUACUUCGAA-5' (SEQ ID NO: 315)

KRAS-1188 Target: 5'-TTGGTGTGAAACAAATTAATGAAGCTT-3' (SEQ ID NO: 1721)

5'-GUGUGAAACAAAUUAAUGAAGCUtt-3' (SEQ ID NO: 1019)
3'-ACCACACUUUGUUUAAUUACUUCGAAA-5' (SEQ ID NO: 316)

KRAS-1189 Target: 5'-TGGTGTGAAACAAATTAATGAAGCTTT-3' (SEQ ID NO: 1722)

5'-CAAAUUAAUGAAGCUUUUGAAUCat-3' (SEQ ID NO: 1020)
3'-UUGUUUAAUUACUUCGAAAACUUAGUA-5' (SEQ ID NO: 317)

KRAS-1197 Target: 5'-AACAAATTAATGAAGCTTTTGAATCAT-3' (SEQ ID NO: 1723)

5'-AAAUUAAUGAAGCUUUUGAAUCAtc-3' (SEQ ID NO: 1021)
3'-UGUUUAAUUACUUCGAAAACUUAGUAG-5' (SEQ ID NO: 318)

KRAS-1198 Target: 5'-ACAAATTAATGAAGCTTTTGAATCATC-3' (SEQ ID NO: 1724)

5'-UGUGUUUUAUCUAGUCACAUAAAtg-3' (SEQ ID NO: 1022)
3'-AGACACAAAAUAGAUCAGUGUAUUUAC-5' (SEQ ID NO: 319)

KRAS-1230 Target: 5'-TCTGTGTTTTATCTAGTCACATAAATG-3' (SEQ ID NO: 1725)

5'-GUGUUUUAUCUAGUCACAUAAAUgg-3' (SEQ ID NO: 1023)
3'-GACACAAAAUAGAUCAGUGUAUUUACC-5' (SEQ ID NO: 320)

KRAS-1231 Target: 5'-CTGTGTTTTATCTAGTCACATAAATGG-3' (SEQ ID NO: 1726)

5'-UUUUAUCUAGUCACAUAAAUGGAtt-3' (SEQ ID NO: 1024)
3'-ACAAAAUAGAUCAGUGUAUUUACCUAA-5' (SEQ ID NO: 321)

KRAS-1234 Target: 5'-TGTTTTATCTAGTCACATAAATGGATT-3' (SEQ ID NO: 1727)

5'-UUUAUCUAGUCACAUAAAUGGAUta-3' (SEQ ID NO: 1025)
3'-CAAAAUAGAUCAGUGUAUUUACCUAAU-5' (SEQ ID NO: 322)

KRAS-1235 Target: 5'-GTTTTATCTAGTCACATAAATGGATTA-3' (SEQ ID NO: 1728)

5'-CUAGUCACAUAAAUGGAUUAAUUac-3' (SEQ ID NO: 1026)
3'-UAGAUCAGUGUAUUUACCUAAUUAAUG-5' (SEQ ID NO: 323)

KRAS-1240 Target: 5'-ATCTAGTCACATAAATGGATTAATTAC-3' (SEQ ID NO: 1729)

5'-UAGUCACAUAAAUGGAUUAAUUAct-3' (SEQ ID NO: 1027)
3'-AGAUCAGUGUAUUUACCUAAUUAAUGA-5' (SEQ ID NO: 324)

KRAS-1241 Target: 5'-TCTAGTCACATAAATGGATTAATTACT-3' (SEQ ID NO: 1730)

5'-UAAAUGGAUUAAUUACUAAUUUCag-3' (SEQ ID NO: 1028)
3'-GUAUUUACCUAAUUAAUGAUUAAAGUC-5' (SEQ ID NO: 325)

KRAS-1249 Target: 5'-CATAAATGGATTAATTACTAATTTCAG-3' (SEQ ID NO: 1731)

5'-AAAUGGAUUAAUUACUAAUUUCAgt-3' (SEQ ID NO: 1029)
3'-UAUUUACCUAAUUAAUGAUUAAAGUCA-5' (SEQ ID NO: 326)

KRAS-1250 Target: 5'-ATAAATGGATTAATTACTAATTTCAGT-3' (SEQ ID NO: 1732)

5'-GAUUAAUUACUAAUUUCAGUUGAga-3' (SEQ ID NO: 1030)
3'-ACCUAAUUAAUGAUUAAAGUCAACUCU-5' (SEQ ID NO: 327)

KRAS-1255 Target: 5'-TGGATTAATTACTAATTTCAGTTGAGA-3' (SEQ ID NO: 1733)

5'-UUAAUUACUAAUUUCAGUUGAGAcc-3' (SEQ ID NO: 1031)
3'-CUAAUUAAUGAUUAAAGUCAACUCUGG-5' (SEQ ID NO: 328)

KRAS-1257 Target: 5'-GATTAATTACTAATTTCAGTTGAGACC-3' (SEQ ID NO: 1734)

5'-UAAUUACUAAUUUCAGUUGAGACct-3' (SEQ ID NO: 1032)

3'-UAAUUAAUGAUUAAAGUCAACUCUGGA-5' (SEQ ID NO: 329)

KRAS-1258 Target: 5'-ATTAATTACTAATTTCAGTTGAGACCT-3' (SEQ ID NO: 1735)

5'-AAUUACUAAUUUCAGUUGAGACCtt-3' (SEQ ID NO: 1033)
3'-AAUUAAUGAUUAAAGUCAACUCUGGAA-5' (SEQ ID NO: 330)

KRAS-1259 Target: 5'-TTAATTACTAATTTCAGTTGAGACCTT-3' (SEQ ID NO: 1736)

5'-AUUGGUUUUUACUGAAACAUUGAgg-3' (SEQ ID NO: 1034)
3'-AUUAACCAAAAAUGACUUUGUAACUCC-5' (SEQ ID NO: 331)

KRAS-1287 Target: 5'-TAATTGGTTTTTACTGAAACATTGAGG-3' (SEQ ID NO: 1737)

5'-GUUUUUACUGAAACAUUGAGGGAac-3' (SEQ ID NO: 1035)
3'-ACCAAAAAAUGACUUUGUAACUCCCUUG-5' (SEQ ID NO: 332)

KRAS-1291 Target: 5'-TGGTTTTTACTGAAACATTGAGGGAAC-3' (SEQ ID NO: 1738)

5'-UUUUUACUGAAACAUUGAGGGAAca-3' (SEQ ID NO: 1036)
3'-CCAAAAAAUGACUUUGUAACUCCCUUGU-5' (SEQ ID NO: 333)

KRAS-1292 Target: 5'-GGTTTTTACTGAAACATTGAGGGAACA-3' (SEQ ID NO: 1739)

5'-UGAGGGAACACAAAUUUAUGGGCtt-3' (SEQ ID NO: 1037)
3'-UAACUCCCUUGUGUUUAAAUACCCGAA-5' (SEQ ID NO: 334)

KRAS-1307 Target: 5'-ATTGAGGGAACACAAATTTATGGGCTT-3' (SEQ ID NO: 1740)

5'-GAGGGAACACAAAUUUAUGGGCUtc-3' (SEQ ID NO: 1038)
3'-AACUCCCUUGUGUUUAAAUACCCGAAG-5' (SEQ ID NO: 335)

KRAS-1308 Target: 5'-TTGAGGGAACACAAATTTATGGGCTTC-3' (SEQ ID NO: 1741)

5'-AUGAAUGUAAAGUUACACUGUUCac-3' (SEQ ID NO: 1039)
3'-ACUACUUACAUUUCAAUGUGACAAGUG-5' (SEQ ID NO: 336)

KRAS-1381 Target: 5'-TGATGAATGTAAAGTTACACTGTTCAC-3' (SEQ ID NO: 1742)

5'-UGAAUGUAAAGUUACACUGUUCAca-3' (SEQ ID NO: 1040)
3'-CUACUUACAUUUCAAUGUGACAAGUGU-5' (SEQ ID NO: 337)

KRAS-1382 Target: 5'-GATGAATGTAAAGTTACACTGTTCACA-3' (SEQ ID NO: 1743)

5'-AAAAUAUUAUAUUUUUUCUAUAAaa-3' (SEQ ID NO: 1041)
3'-GGUUUUAUAAUAUAAAAAAGAUAUUUU-5' (SEQ ID NO: 338)

KRAS-1454 Target: 5'-CCAAAATATTATATTTTTTCTATAAAA-3' (SEQ ID NO: 1744)

5'-AAAUAUUAUAUUUUUUCUAUAAAaa-3' (SEQ ID NO: 1042)
3'-GUUUUAUAAUAUAAAAAAGAUAUUUUU-5' (SEQ ID NO: 339)

KRAS-1455 Target: 5'-CAAAATATTATATTTTTTCTATAAAAA-3' (SEQ ID NO: 1745)

5'-AAUAUUAUAUUUUUUCUAUAAAAag-3' (SEQ ID NO: 1043)
3'-UUUUAUAAUAUAAAAAAGAUAUUUUUC-5' (SEQ ID NO: 340)

KRAS-1456 Target: 5'-AAAATATTATATTTTTTCTATAAAAAG-3' (SEQ ID NO: 1746)

5'-AUAUUAUAUUUUUUCUAUAAAAAga-3' (SEQ ID NO: 1044)
3'-UUUAUAAUAUAAAAAAGAUAUUUUUCU-5' (SEQ ID NO: 341)

KRAS-1457 Target: 5'-AAATATTATATTTTTTCTATAAAAAGA-3' (SEQ ID NO: 1747)

5'-AUUAUAUUUUUUCUAUAAAAAGAaa-3' (SEQ ID NO: 1045)
3'-UAUAAUAUAAAAAAGAUAUUUUUCUUU-5' (SEQ ID NO: 342)

KRAS-1459 Target: 5'-ATATTATATTTTTTCTATAAAAAGAAA-3' (SEQ ID NO: 1748)

5'-UUAUAUUUUUUCUAUAAAAAGAAaa-3' (SEQ ID NO: 1046)
3'-AUAAUAUAAAAAAGAUAUUUUUCUUUU-5' (SEQ ID NO: 343)

KRAS-1460 Target: 5'-TATTATATTTTTTCTATAAAAAGAAAA-3' (SEQ ID NO: 1749)

5'-UAUAUUUUUUCUAUAAAAAGAAAaa-3' (SEQ ID NO: 1047)
3'-UAAUAUAAAAAAGAUAUUUUUCUUUUU-5' (SEQ ID NO: 344)

KRAS-1461 Target: 5'-ATTATATTTTTTCTATAAAAAGAAAAA-3' (SEQ ID NO: 1750)

5'-AUAUUUUUUCUAUAAAAAGAAAAaa-3' (SEQ ID NO: 1048)
3'-AAUAUAAAAAAGAUAUUUUUCUUUUUU-5' (SEQ ID NO: 345)

KRAS-1462 Target: 5'-TTATATTTTTTCTATAAAAAGAAAAAA-3' (SEQ ID NO: 1751)

5'-UAUUUUUUCUAUAAAAAGAAAAAaa-3' (SEQ ID NO: 1049)
3'-AUAUAAAAAAGAUAUUUUUCUUUUUUU-5' (SEQ ID NO: 346)

KRAS-1463 Target: 5'-TATATTTTTTCTATAAAAAGAAAAAAA-3' (SEQ ID NO: 1752)

5'-AUUUUUUCUAUAAAAAGAAAAAAat-3' (SEQ ID NO: 1050)
3'-UAUAAAAAAGAUAUUUUUCUUUUUUUA-5' (SEQ ID NO: 347)

KRAS-1464 Target: 5'-ATATTTTTTCTATAAAAAGAAAAAAAT-3' (SEQ ID NO: 1753)

5'-UUUUUUCUAUAAAAAGAAAAAAAtg-3' (SEQ ID NO: 1051)
3'-AUAAAAAAGAUAUUUUUCUUUUUUUAC-5' (SEQ ID NO: 348)

KRAS-1465 Target: 5'-TATTTTTTCTATAAAAAGAAAAAAATG-3' (SEQ ID NO: 1754)

5'-UUUUUCUAUAAAAAGAAAAAAAUgg-3' (SEQ ID NO: 1052)
3'-UAAAAAAGAUAUUUUUCUUUUUUUACC-5' (SEQ ID NO: 349)

KRAS-1466 Target: 5'-ATTTTTTCTATAAAAAGAAAAAAATGG-3' (SEQ ID NO: 1755)

5'-CUAUAAAAAGAAAAAAAUGGAAAaa-3' (SEQ ID NO: 1053)
3'-AAGAUAUUUUUCUUUUUUUACCUUUUU-5' (SEQ ID NO: 350)

KRAS-1471 Target: 5'-TTCTATAAAAAGAAAAAAATGGAAAAA-3' (SEQ ID NO: 1756)

5'-UAUAAAAAGAAAAAAAUGGAAAAaa-3' (SEQ ID NO: 1054)
3'-AGAUAUUUUUCUUUUUUUACCUUUUUU-5' (SEQ ID NO: 351)

KRAS-1472 Target: 5'-TCTATAAAAAGAAAAAAATGGAAAAAA-3' (SEQ ID NO: 1757)

5'-UAAAAAGAAAAAAAUGGAAAAAAat-3' (SEQ ID NO: 1055)
3'-AUAUUUUUCUUUUUUUACCUUUUUUUA-5' (SEQ ID NO: 352)

KRAS-1474 Target: 5'-TATAAAAAGAAAAAAATGGAAAAAAAT-3' (SEQ ID NO: 1758)

5'-AAAAAGAAAAAAAUGGAAAAAAAtt-3' (SEQ ID NO: 1056)
3'-UAUUUUUCUUUUUUUACCUUUUUUUAA-5' (SEQ ID NO: 353)

KRAS-1475 Target: 5'-ATAAAAAGAAAAAAATGGAAAAAAATT-3' (SEQ ID NO: 1759)

5'-AAAAGAAAAAAAUGGAAAAAAAUta-3' (SEQ ID NO: 1057)
3'-AUUUUUCUUUUUUUACCUUUUUUUAAU-5' (SEQ ID NO: 354)

KRAS-1476 Target: 5'-TAAAAAGAAAAAAATGGAAAAAAATTA-3' (SEQ ID NO: 1760)

5'-AAAGAAAAAAAUGGAAAAAAAUUac-3' (SEQ ID NO: 1058)
3'-UUUUUCUUUUUUUACCUUUUUUUAAUG-5' (SEQ ID NO: 355)

KRAS-1477 Target: 5'-AAAAAGAAAAAAATGGAAAAAAATTAC-3' (SEQ ID NO: 1761)

5'-AAGAAAAAAAAUGGAAAAAAAAUUAca-3' (SEQ ID NO: 1059)
3'-UUUUCUUUUUUUACCUUUUUUUUAAUGU-5' (SEQ ID NO: 356)

KRAS-1478 Target: 5'-AAAAGAAAAAAATGGAAAAAAATTACA-3' (SEQ ID NO: 1762)

5'-AGAAAAAAAAUGGAAAAAAAAUUACaa-3' (SEQ ID NO: 1060)
3'-UUUCUUUUUUUACCUUUUUUUUAAUGUU-5' (SEQ ID NO: 357)

KRAS-1479 Target: 5'-AAAGAAAAAAATGGAAAAAAATTACAA-3' (SEQ ID NO: 1763)

5'-GAAAAAAAAUGGAAAAAAAAUUACAag-3' (SEQ ID NO: 1061)
3'-UUCUUUUUUUACCUUUUUUUUAAUGUUC-5' (SEQ ID NO: 358)

KRAS-1480 Target: 5'-AAGAAAAAAATGGAAAAAAATTACAAG-3' (SEQ ID NO: 1764)

5'-AAAAUGGAAAAAAAAUUACAAGGCaa-3' (SEQ ID NO: 1062)
3'-UUUUUUACCUUUUUUUUAAUGUUCCGUU-5' (SEQ ID NO: 359)

KRAS-1484 Target: 5'-AAAAAATGGAAAAAAATTACAAGGCAA-3' (SEQ ID NO: 1765)

5'-AAAUGGAAAAAAAAUUACAAGGCAat-3' (SEQ ID NO: 1063)
3'-UUUUUACCUUUUUUUUAAUGUUCCGUUA-5' (SEQ ID NO: 360)

KRAS-1485 Target: 5'-AAAAATGGAAAAAAATTACAAGGCAAT-3' (SEQ ID NO: 1766)

5'-GAAAAAAAAUUACAAGGCAAUGGAaa-3' (SEQ ID NO: 1064)
3'-ACCUUUUUUUUAAUGUUCCGUUACCUUU-5' (SEQ ID NO: 361)

KRAS-1490 Target: 5'-TGGAAAAAAATTACAAGGCAATGGAAA-3' (SEQ ID NO: 1767)

5'-AAAAAAAAUUACAAGGCAAUGGAAac-3' (SEQ ID NO: 1065)
3'-CCUUUUUUUUAAUGUUCCGUUACCUUUG-5' (SEQ ID NO: 362)

KRAS-1491 Target: 5'-GGAAAAAAATTACAAGGCAATGGAAAC-3' (SEQ ID NO: 1768)

5'-AAAAAAAUUACAAGGCAAUGGAAAct-3' (SEQ ID NO: 1066)
3'-CUUUUUUUUAAUGUUCCGUUACCUUUGA-5' (SEQ ID NO: 363)

KRAS-1492 Target: 5'-GAAAAAAATTACAAGGCAATGGAAACT-3' (SEQ ID NO: 1769)

5'-CAUUUCCUUUUCACAUUAGAUAAAat-3' (SEQ ID NO: 1067)
3'-CGGUAAAGGAAAAGUGUAAUCUAUUUA-5' (SEQ ID NO: 364)

KRAS-1527 Target: 5'-GCCATTTCCTTTTCACATTAGATAAAT-3' (SEQ ID NO: 1770)

5'-CUUUUCACAUUAGAUAAAAUUACUat-3' (SEQ ID NO: 1068)
3'-AGGAAAAGUGUAAUCUAUUUAAUGAUA-5' (SEQ ID NO: 365)

KRAS-1533 Target: 5'-TCCTTTTCACATTAGATAAATTACTAT-3' (SEQ ID NO: 1771)

5'-CAUUAGAUAAAUUACUAUAAAGAct-3' (SEQ ID NO: 1069)
3'-GUGUAAUCUAUUUAAUGAUAUUUCUGA-5' (SEQ ID NO: 366)

KRAS-1540 Target: 5'-CACATTAGATAAATTACTATAAAGACT-3' (SEQ ID NO: 1772)

5'-AUUAGAUAAAUUACUAUAAAGACtc-3' (SEQ ID NO: 1070)
3'-UGUAAUCUAUUUAAUGAUAUUUCUGAG-5' (SEQ ID NO: 367)

KRAS-1541 Target: 5'-ACATTAGATAAATTACTATAAAGACTC-3' (SEQ ID NO: 1773)

5'-UUAGAUAAAUUACUAUAAAGACUcc-3' (SEQ ID NO: 1071)
3'-GUAAUCUAUUUAAUGAUAUUUCUGAGG-5' (SEQ ID NO: 368)

KRAS-1542 Target: 5'-CATTAGATAAATTACTATAAAGACTCC-3' (SEQ ID NO: 1774)

5'-UAUGAAAUGGGGAUUAUUAUAGCaa-3' (SEQ ID NO: 1072)
3'-UCAUACUUUACCCCUAAUAAUAUCGUU-5' (SEQ ID NO: 369)

KRAS-1597 Target: 5'-AGTATGAAATGGGGATTATTATAGCAA-3' (SEQ ID NO: 1775)

5'-GGGAUUAUUAUAGCAACCAUUUUgg-3' (SEQ ID NO: 1073)
3'-ACCCCUAAUAAUAUCGUUGGUAAAACC-5' (SEQ ID NO: 370)

KRAS-1606 Target: 5'-TGGGGATTATTATAGCAACCATTTTGG-3' (SEQ ID NO: 1776)

5'-CUAUAUUUACAUGCUACUAAAUUtt-3' (SEQ ID NO: 1074)
3'-CCGAUAUAAAUGUACGAUGAUUUAAAA-5' (SEQ ID NO: 371)

KRAS-1633 Target: 5'-GGCTATATTTACATGCTACTAAATTTT-3' (SEQ ID NO: 1777)

5'-UAUAUUUACAUGCUACUAAAUUUtt-3' (SEQ ID NO: 1075)
3'-CGAUAUAAAUGUACGAUGAUUUAAAAA-5' (SEQ ID NO: 372)

KRAS-1634 Target: 5'-GCTATATTTACATGCTACTAAATTTTT-3' (SEQ ID NO: 1778)

5'-AUAUUUACAUGCUACUAAAUUUUta-3' (SEQ ID NO: 1076)
3'-GAUAUAAAUGUACGAUGAUUUAAAAAU-5' (SEQ ID NO: 373)

KRAS-1635 Target: 5'-CTATATTTACATGCTACTAAATTTTTA-3' (SEQ ID NO: 1779)

5'-UAUUUACAUGCUACUAAAUUUUUat-3' (SEQ ID NO: 1077)
3'-AUAUAAAUGUACGAUGAUUUAAAAAUA-5' (SEQ ID NO: 374)

KRAS-1636 Target: 5'-TATATTTACATGCTACTAAATTTTTAT-3' (SEQ ID NO: 1780)

5'-AUUUACAUGCUACUAAAUUUUUAta-3' (SEQ ID NO: 1078)
3'-UAUAAAUGUACGAUGAUUUAAAAAUAU-5' (SEQ ID NO: 375)

KRAS-1637 Target: 5'-ATATTTACATGCTACTAAATTTTTATA-3' (SEQ ID NO: 1781)

5'-CAUGCUACUAAAUUUUUAUAAUAat-3' (SEQ ID NO: 1079)
3'-AUGUACGAUGAUUUAAAAAUAUUAUUA-5' (SEQ ID NO: 376)

KRAS-1642 Target: 5'-TACATGCTACTAAATTTTTATAATAAT-3' (SEQ ID NO: 1782)

5'-CUAAAUUUUUAUAAUAAUUGAAAag-3' (SEQ ID NO: 1080)
3'-AUGAUUUAAAAAUAUUAUUAACUUUUC-5' (SEQ ID NO: 377)

KRAS-1649 Target: 5'-TACTAAATTTTTATAATAATTGAAAAG-3' (SEQ ID NO: 1783)

5'-UAAAUUUUUAUAAUAAUUGAAAAga-3' (SEQ ID NO: 1081)
3'-UGAUUUAAAAAUAUUAUUAACUUUUCU-5' (SEQ ID NO: 378)

KRAS-1650 Target: 5'-ACTAAATTTTTATAATAATTGAAAAGA-3' (SEQ ID NO: 1784)

5'-AAUUUUUAUAAUAAUUGAAAAGAtt-3' (SEQ ID NO: 1082)
3'-AUUUAAAAAUAUUAUUAACUUUUCUAA-5' (SEQ ID NO: 379)

KRAS-1652 Target: 5'-TAAATTTTTATAATAATTGAAAAGATT-3' (SEQ ID NO: 1785)

5'-AUUUUUAUAAUAAUUGAAAAGAUtt-3' (SEQ ID NO: 1083)
3'-UUUAAAAAUAUUAUUAACUUUUCUAAA-5' (SEQ ID NO: 380)

KRAS-1653 Target: 5'-AAATTTTTATAATAATTGAAAAGATTT-3' (SEQ ID NO: 1786)

5'-UUUUUAUAAUAAUUGAAAAGAUUtt-3' (SEQ ID NO: 1084)
3'-UUAAAAAUAUUAUUAACUUUUCUAAAA-5' (SEQ ID NO: 381)

KRAS-1654 Target: 5'-AATTTTTATAATAATTGAAAAGATTTT-3' (SEQ ID NO: 1787)

5'-UUUUAUAAUAAUUGAAAAGAUUUta-3' (SEQ ID NO: 1085)

3'-UAAAAAUAUUAUUAACUUUUCUAAAAU-5' (SEQ ID NO: 382)

KRAS-1655 Target: 5'-ATTTTTATAATAATTGAAAAGATTTTA-3' (SEQ ID NO: 1788)

5'-UUUAUAAUAAUUGAAAAGAUUUUaa-3' (SEQ ID NO: 1086)
3'-AAAAAUAUUAUUAACUUUUCUAAAAUU-5' (SEQ ID NO: 383)

KRAS-1656 Target: 5'-TTTTTATAATAATTGAAAAGATTTTAA-3' (SEQ ID NO: 1789)

5'-UUAUAAUAAUUGAAAAGAUUUUAac-3' (SEQ ID NO: 1087)
3'-AAAAUAUUAUUAACUUUUCUAAAAUUG-5' (SEQ ID NO: 384)

KRAS-1657 Target: 5'-TTTTATAATAATTGAAAAGATTTTAAC-3' (SEQ ID NO: 1790)

5'-UAUAAUAAUUGAAAAGAUUUUAAca-3' (SEQ ID NO: 1088)
3'-AAAUAUUAUUAACUUUUCUAAAAUUGU-5' (SEQ ID NO: 385)

KRAS-1658 Target: 5'-TTTATAATAATTGAAAAGATTTTAACA-3' (SEQ ID NO: 1791)

5'-AUAAUAAUUGAAAAGAUUUUAACaa-3' (SEQ ID NO: 1089)
3'-AAUAUUAUUAACUUUUCUAAAAUUGUU-5' (SEQ ID NO: 386)

KRAS-1659 Target: 5'-TTATAATAATTGAAAAGATTTTAACAA-3' (SEQ ID NO: 1792)

5'-UAAUAAUUGAAAAGAUUUUAACAag-3' (SEQ ID NO: 1090)
3'-AUAUUAUUAACUUUUCUAAAAUUGUUC-5' (SEQ ID NO: 387)

KRAS-1660 Target: 5'-TATAATAATTGAAAAGATTTTAACAAG-3' (SEQ ID NO: 1793)

5'-AAUUGAAAAGAUUUUAACAAGUAta-3' (SEQ ID NO: 1091)
3'-UAUUAACUUUUCUAAAAUUGUUCAUAU-5' (SEQ ID NO: 388)

KRAS-1664 Target: 5'-ATAATTGAAAAGATTTTAACAAGTATA-3' (SEQ ID NO: 1794)

5'-AUUGAAAAGAUUUUAACAAGUAUaa-3' (SEQ ID NO: 1092)
3'-AUUAACUUUUCUAAAAUUGUUCAUAUU-5' (SEQ ID NO: 389)

KRAS-1665 Target: 5'-TAATTGAAAAGATTTTAACAAGTATAA-3' (SEQ ID NO: 1795)

5'-UGAAAAGAUUUUAACAAGUAUAAaa-3' (SEQ ID NO: 1093)
3'-UAACUUUUCUAAAAUUGUUCAUAUUUU-5' (SEQ ID NO: 390)

KRAS-1667 Target: 5'-ATTGAAAAGATTTTAACAAGTATAAAA-3' (SEQ ID NO: 1796)

5'-GAAAAGAUUUUAACAAGUAUAAAaa-3' (SEQ ID NO: 1094)
3'-AACUUUUCUAAAAUUGUUCAUAUUUU-5' (SEQ ID NO: 391)

KRAS-1668 Target: 5'-TTGAAAAGATTTTAACAAGTATAAAAA-3' (SEQ ID NO: 1797)

5'-AAAAGAUUUUAACAAGUAUAAAAaa-3' (SEQ ID NO: 1095)
3'-ACUUUUCUAAAAUUGUUCAUAUUUUU-5' (SEQ ID NO: 392)

KRAS-1669 Target: 5'-TGAAAAGATTTTAACAAGTATAAAAAA-3' (SEQ ID NO: 1798)

5'-AAAGAUUUUAACAAGUAUAAAAAat-3' (SEQ ID NO: 1096)
3'-CUUUUCUAAAAUUGUUCAUAUUUUUA-5' (SEQ ID NO: 393)

KRAS-1670 Target: 5'-GAAAAGATTTTAACAAGTATAAAAAAT-3' (SEQ ID NO: 1799)

5'-AAGAUUUUAACAAGUAUAAAAAAtt-3' (SEQ ID NO: 1097)
3'-UUUUCUAAAAUUGUUCAUAUUUUUAA-5' (SEQ ID NO: 394)

KRAS-1671 Target: 5'-AAAAGATTTTAACAAGTATAAAAAATT-3' (SEQ ID NO: 1800)

5'-AGAUUUUAACAAGUAUAAAAAAUtc-3' (SEQ ID NO: 1098)
3'-UUUCUAAAAUUGUUCAUAUUUUUUAAG-5' (SEQ ID NO: 395)

KRAS-1672 Target: 5'-AAAGATTTTAACAAGTATAAAAAATTC-3' (SEQ ID NO: 1801)

5'-GAUUUUAACAAGUAUAAAAAAUUct-3' (SEQ ID NO: 1099)
3'-UUCUAAAAUUGUUCAUAUUUUUUAAGA-5' (SEQ ID NO: 396)

KRAS-1673 Target: 5'-AAGATTTTAACAAGTATAAAAAATTCT-3' (SEQ ID NO: 1802)

5'-AUUUUAACAAGUAUAAAAAAUUCtc-3' (SEQ ID NO: 1100)
3'-UCUAAAAUUGUUCAUAUUUUUUAAGAG-5' (SEQ ID NO: 397)

KRAS-1674 Target: 5'-AGATTTTAACAAGTATAAAAAATTCTC-3' (SEQ ID NO: 1803)

5'-UUUUAACAAGUAUAAAAAAUUCUca-3' (SEQ ID NO: 1101)
3'-CUAAAAUUGUUCAUAUUUUUUAAGAGU-5' (SEQ ID NO: 398)

KRAS-1675 Target: 5'-GATTTTAACAAGTATAAAAAATTCTCA-3' (SEQ ID NO: 1804)

5'-AAGUAUAAAAAAUUCUCAUAGGAat-3' (SEQ ID NO: 1102)
3'-UGUUCAUAUUUUUUAAGAGUAUCCUUA-5' (SEQ ID NO: 399)

KRAS-1682 Target: 5'-ACAAGTATAAAAAATTCTCATAGGAAT-3' (SEQ ID NO: 1805)

5'-AGUAUAAAAAAUUCUCAUAGGAAtt-3' (SEQ ID NO: 1103)
3'-GUUCAUAUUUUUUAAGAGUAUCCUUAA-5' (SEQ ID NO: 400)

KRAS-1683 Target: 5'-CAAGTATAAAAAATTCTCATAGGAATT-3' (SEQ ID NO: 1806)

5'-GUAUAAAAAAUUCUCAUAGGAAUta-3' (SEQ ID NO: 1104)
3'-UUCAUAUUUUUUAAGAGUAUCCUUAAU-5' (SEQ ID NO: 401)

KRAS-1684 Target: 5'-AAGTATAAAAAATTCTCATAGGAATTA-3' (SEQ ID NO: 1807)

5'-UAUAAAAAAUUCUCAUAGGAAUUaa-3' (SEQ ID NO: 1105)
3'-UCAUAUUUUUUAAGAGUAUCCUUAAUU-5' (SEQ ID NO: 402)

KRAS-1685 Target: 5'-AGTATAAAAAATTCTCATAGGAATTAA-3' (SEQ ID NO: 1808)

5'-AUAAAAAAUUCUCAUAGGAAUUAaa-3' (SEQ ID NO: 1106)
3'-CAUAUUUUUUAAGAGUAUCCUUAAUUU-5' (SEQ ID NO: 403)

KRAS-1686 Target: 5'-GTATAAAAAATTCTCATAGGAATTAAA-3' (SEQ ID NO: 1809)

5'-UAAAAAAUUCUCAUAGGAAUUAAat-3' (SEQ ID NO: 1107)
3'-AUAUUUUUUAAGAGUAUCCUUAAUUUA-5' (SEQ ID NO: 404)

KRAS-1687 Target: 5'-TATAAAAAATTCTCATAGGAATTAAAT-3' (SEQ ID NO: 1810)

5'-AAAAAAUUCUCAUAGGAAUUAAAtg-3' (SEQ ID NO: 1108)
3'-UAUUUUUUAAGAGUAUCCUUAAUUUAC-5' (SEQ ID NO: 405)

KRAS-1688 Target: 5'-ATAAAAAATTCTCATAGGAATTAAATG-3' (SEQ ID NO: 1811)

5'-AAAAAUUCUCAUAGGAAUUAAAUgt-3' (SEQ ID NO: 1109)
3'-AUUUUUUAAGAGUAUCCUUAAUUUACA-5' (SEQ ID NO: 406)

KRAS-1689 Target: 5'-TAAAAAATTCTCATAGGAATTAAATGT-3' (SEQ ID NO: 1812)

5'-AAAUUCUCAUAGGAAUUAAAUGUag-3' (SEQ ID NO: 1110)
3'-UUUUUAAGAGUAUCCUUAAUUUACAUC-5' (SEQ ID NO: 407)

KRAS-1691 Target: 5'-AAAAATTCTCATAGGAATTAAATGTAG-3' (SEQ ID NO: 1813)

5'-AAUUCUCAUAGGAAUUAAAUGUAgt-3' (SEQ ID NO: 1111)
3'-UUUUAAGAGUAUCCUUAAUUUACAUCA-5' (SEQ ID NO: 408)

KRAS-1692 Target: 5'-AAAATTCTCATAGGAATTAAATGTAGT-3' (SEQ ID NO: 1814)

5'-CUUUCAUAGUAUAACUUUAAAUCtt-3' (SEQ ID NO: 1112)
3'-GAGAAAGUAUCAUAUUGAAAUUUAGAA-5' (SEQ ID NO: 409)

KRAS-1736 Target: 5'-CTCTTTCATAGTATAACTTTAAATCTT-3' (SEQ ID NO: 1815)

5'-AUAGUAUAACUUUAAAUCUUUUCtt-3' (SEQ ID NO: 1113)
3'-AGUAUCAUAUUGAAAUUUAGAAAAGAA-5' (SEQ ID NO: 410)

KRAS-1741 Target: 5'-TCATAGTATAACTTTAAATCTTTTCTT-3' (SEQ ID NO: 1816)

5'-UAGUAUAACUUUAAAUCUUUUCUtc-3' (SEQ ID NO: 1114)
3'-GUAUCAUAUUGAAAUUUAGAAAAGAAG-5' (SEQ ID NO: 411)

KRAS-1742 Target: 5'-CATAGTATAACTTTAAATCTTTTCTTC-3' (SEQ ID NO: 1817)

5'-UAAAUCUUUUCUUCAACUUGAGUct-3' (SEQ ID NO: 1115)
3'-AAAUUUAGAAAAGAAGUUGAACUCAGA-5' (SEQ ID NO: 412)

KRAS-1753 Target: 5'-TTTAAATCTTTTCTTCAACTTGAGTCT-3' (SEQ ID NO: 1818)

5'-AAAUCUUUUCUUCAACUUGAGUCtt-3' (SEQ ID NO: 1116)
3'-AAUUUAGAAAAGAAGUUGAACUCAGAA-5' (SEQ ID NO: 413)

KRAS-1754 Target: 5'-TTAAATCTTTTCTTCAACTTGAGTCTT-3' (SEQ ID NO: 1819)

5'-CUUGAGUCUUUGAAGAUAGUUUUaa-3' (SEQ ID NO: 1117)
3'-UUGAACUCAGAAACUUCUAUCAAAAUU-5' (SEQ ID NO: 414)

KRAS-1769 Target: 5'-AACTTGAGTCTTTGAAGATAGTTTTAA-3' (SEQ ID NO: 1820)

5'-UGAGUCUUUGAAGAUAGUUUUAAtt-3' (SEQ ID NO: 1118)
3'-GAACUCAGAAACUUCUAUCAAAAUUAA-5' (SEQ ID NO: 415)

KRAS-1771 Target: 5'-CTTGAGTCTTTGAAGATAGTTTTAATT-3' (SEQ ID NO: 1821)

5'-GAGUCUUUGAAGAUAGUUUUAAUtc-3' (SEQ ID NO: 1119)
3'-AACUCAGAAACUUCUAUCAAAAUUAAG-5' (SEQ ID NO: 416)

KRAS-1772 Target: 5'-TTGAGTCTTTGAAGATAGTTTTAATTC-3' (SEQ ID NO: 1822)

5'-GAUAGUUUUAAUUCUGCUUGUGAca-3' (SEQ ID NO: 1120)
3'-UUCUAUCAAAAUUAAGACGAACACUGU-5' (SEQ ID NO: 417)

KRAS-1783 Target: 5'-AAGATAGTTTTAATTCTGCTTGTGACA-3' (SEQ ID NO: 1823)

5'-AUAGUUUUAAUUCUGCUUGUGACat-3' (SEQ ID NO: 1121)
3'-UCUAUCAAAAUUAAGACGAACACUGUA-5' (SEQ ID NO: 418)

KRAS-1784 Target: 5'-AGATAGTTTTAATTCTGCTTGTGACAT-3' (SEQ ID NO: 1824)

5'-UAGUUUUAAUUCUGCUUGUGACAtt-3' (SEQ ID NO: 1122)
3'-CUAUCAAAAUUAAGACGAACACUGUAA-5' (SEQ ID NO: 419)

KRAS-1785 Target: 5'-GATAGTTTTAATTCTGCTTGTGACATT-3' (SEQ ID NO: 1825)

5'-CUUGUGACAUUAAAAGAUUAUUUgg-3' (SEQ ID NO: 1123)
3'-ACGAACACUGUAAUUUUCUAAUAAACC-5' (SEQ ID NO: 420)

KRAS-1799 Target: 5'-TGCTTGTGACATTAAAAGATTATTTGG-3' (SEQ ID NO: 1826)

5'-CAUUGCUUUUGUUUCUUAAGAAAac-3' (SEQ ID NO: 1124)
3'-UCGUAACGAAAACAAAGAAUUCUUUUG-5' (SEQ ID NO: 421)

KRAS-2047 Target: 5'-AGCATTGCTTTTGTTTCTTAAGAAAAC-3' (SEQ ID NO: 1827)

5'-AUUGCUUUUGUUUCUUAAGAAAAca-3' (SEQ ID NO: 1125)
3'-CGUAACGAAAACAAAGAAUUCUUUUGU-5' (SEQ ID NO: 422)

KRAS-2048 Target: 5'-GCATTGCTTTTGTTTCTTAAGAAAACA-3' (SEQ ID NO: 1828)

5'-UUUGUUUCUUAAGAAAACAAACUct-3' (SEQ ID NO: 1126)
3'-GAAAACAAAGAAUUCUUUUGUUUGAGA-5' (SEQ ID NO: 423)

KRAS-2054 Target: 5'-CTTTTGTTTCTTAAGAAAACAAACTCT-3' (SEQ ID NO: 1829)

5'-CUUAAGAAAACAAACUCUUUUUUaa-3' (SEQ ID NO: 1127)
3'-AAGAAUUCUUUUGUUUGAGAAAAAAUU-5' (SEQ ID NO: 424)

KRAS-2061 Target: 5'-TTCTTAAGAAAACAAACTCTTTTTTAA-3' (SEQ ID NO: 1830)

5'-UUAAGAAAACAAACUCUUUUUUAaa-3' (SEQ ID NO: 1128)
3'-AGAAUUCUUUUGUUUGAGAAAAAAUUU-5' (SEQ ID NO: 425)

KRAS-2062 Target: 5'-TCTTAAGAAAACAAACTCTTTTTTAAA-3' (SEQ ID NO: 1831)

5'-UAAGAAAACAAACUCUUUUUUAAaa-3' (SEQ ID NO: 1129)
3'-GAAUUCUUUUGUUUGAGAAAAAAUUUU-5' (SEQ ID NO: 426)

KRAS-2063 Target: 5'-CTTAAGAAAACAAACTCTTTTTTAAAA-3' (SEQ ID NO: 1832)

5'-AAGAAAACAAACUCUUUUUUAAAaa-3' (SEQ ID NO: 1130)
3'-AAUUCUUUUGUUUGAGAAAAAAUUUUU-5' (SEQ ID NO: 427)

KRAS-2064 Target: 5'-TTAAGAAAACAAACTCTTTTTTAAAAA-3' (SEQ ID NO: 1833)

5'-AGAAAACAAACUCUUUUUUAAAAat-3' (SEQ ID NO: 1131)
3'-AUUCUUUUGUUUGAGAAAAAAUUUUUA-5' (SEQ ID NO: 428)

KRAS-2065 Target: 5'-TAAGAAAACAAACTCTTTTTTAAAAAT-3' (SEQ ID NO: 1834)

5'-GAAAACAAACUCUUUUUUAAAAAtt-3' (SEQ ID NO: 1132)
3'-UUCUUUUGUUUGAGAAAAAAUUUUUAA-5' (SEQ ID NO: 429)

KRAS-2066 Target: 5'-AAGAAAACAAACTCTTTTTTAAAAATT-3' (SEQ ID NO: 1835)

5'-AAAACAAACUCUUUUUUAAAAAUta-3' (SEQ ID NO: 1133)
3'-UCUUUUGUUUGAGAAAAAAUUUUUAAU-5' (SEQ ID NO: 430)

KRAS-2067 Target: 5'-AGAAAACAAACTCTTTTTTAAAAATTA-3' (SEQ ID NO: 1836)

5'-CAAACUCUUUUUUAAAAAUUACUtt-3' (SEQ ID NO: 1134)
3'-UUGUUUGAGAAAAAAUUUUUAAUGAAA-5' (SEQ ID NO: 431)

KRAS-2071 Target: 5'-AACAAACTCTTTTTTAAAAATTACTTT-3' (SEQ ID NO: 1837)

5'-CUUUUUUAAAAAUUACUUUUAAAta-3' (SEQ ID NO: 1135)
3'-GAGAAAAAAUUUUUAAUGAAAAUUUAU-5' (SEQ ID NO: 432)

KRAS-2077 Target: 5'-CTCTTTTTTAAAAATTACTTTTAAATA-3' (SEQ ID NO: 1838)

5'-UUUUUUAAAAAUUACUUUUAAAUat-3' (SEQ ID NO: 1136)
3'-AGAAAAAAUUUUUAAUGAAAAUUUAUA-5' (SEQ ID NO: 433)

KRAS-2078 Target: 5'-TCTTTTTTAAAAATTACTTTTAAATAT-3' (SEQ ID NO: 1839)

5'-UUUUUAAAAAUUACUUUUAAAUAtt-3' (SEQ ID NO: 1137)
3'-GAAAAAAUUUUUAAUGAAAAUUUAUAA-5' (SEQ ID NO: 434)

KRAS-2079 Target: 5'-CTTTTTTAAAAATTACTTTTAAATATT-3' (SEQ ID NO: 1840)

5'-UUUUAAAAAUUACUUUUAAAUAUta-3' (SEQ ID NO: 1138)

3'-AAAAAAUUUUUAAUGAAAAUUUAUAAU-5' (SEQ ID NO: 435)

KRAS-2080 Target: 5'-TTTTTTAAAAATTACTTTTAAATATTA-3' (SEQ ID NO: 1841)

5'-UUUAAAAAUUACUUUUAAAUAUUaa-3' (SEQ ID NO: 1139)
3'-AAAAAUUUUUAAUGAAAAUUUAUAAUU-5' (SEQ ID NO: 436)

KRAS-2081 Target: 5'-TTTTTAAAAATTACTTTTAAATATTAA-3' (SEQ ID NO: 1842)

5'-UUAAAAAUUACUUUUAAAUAUUAac-3' (SEQ ID NO: 1140)
3'-AAAAUUUUUAAUGAAAAUUUAUAAUUG-5' (SEQ ID NO: 437)

KRAS-2082 Target: 5'-TTTTAAAAATTACTTTTAAATATTAAC-3' (SEQ ID NO: 1843)

5'-UAAAAAUUACUUUUAAAUAUUAAct-3' (SEQ ID NO: 1141)
3'-AAAUUUUUAAUGAAAAUUUAUAAUUGA-5' (SEQ ID NO: 438)

KRAS-2083 Target: 5'-TTTAAAAATTACTTTTAAATATTAACT-3' (SEQ ID NO: 1844)

5'-AAAAAUUACUUUUAAAUAUUAACtc-3' (SEQ ID NO: 1142)
3'-AAUUUUUAAUGAAAAUUUAUAAUUGAG-5' (SEQ ID NO: 439)

KRAS-2084 Target: 5'-TTAAAAATTACTTTTAAATATTAACTC-3' (SEQ ID NO: 1845)

5'-AAAAUUACUUUUAAAUAUUAACUca-3' (SEQ ID NO: 1143)
3'-AUUUUUAAUGAAAAUUUAUAAUUGAGU-5' (SEQ ID NO: 440)

KRAS-2085 Target: 5'-TAAAAATTACTTTTAAATATTAACTCA-3' (SEQ ID NO: 1846)

5'-CUUUUAAAUAUUAACUCAAAAGUtg-3' (SEQ ID NO: 1144)
3'-AUGAAAAUUUAUAAUUGAGUUUUCAAC-5' (SEQ ID NO: 441)

KRAS-2092 Target: 5'-TACTTTTAAATATTAACTCAAAAGTTG-3' (SEQ ID NO: 1847)

5'-UUUUAAAUAUUAACUCAAAAGUUga-3' (SEQ ID NO: 1145)
3'-UGAAAAUUUAUAAUUGAGUUUUCAACU-5' (SEQ ID NO: 442)

KRAS-2093 Target: 5'-ACTTTTAAATATTAACTCAAAAGTTGA-3' (SEQ ID NO: 1848)

5'-UUAAAUAUUAACUCAAAAGUUGAga-3' (SEQ ID NO: 1146)
3'-AAAAUUUAUAAUUGAGUUUUCAACUCU-5' (SEQ ID NO: 443)

KRAS-2095 Target: 5'-TTTTAAATATTAACTCAAAAGTTGAGA-3' (SEQ ID NO: 1849)

5'-AAAUAUUAACUCAAAAGUUGAGAtt-3' (SEQ ID NO: 1147)
3'-AAUUUAUAAUUGAGUUUUCAACUCUAA-5' (SEQ ID NO: 444)

KRAS-2097 Target: 5'-TTAAATATTAACTCAAAAGTTGAGATT-3' (SEQ ID NO: 1850)

5'-AAUAUUAACUCAAAAGUUGAGAUtt-3' (SEQ ID NO: 1148)
3'-AUUUAUAAUUGAGUUUUCAACUCUAAA-5' (SEQ ID NO: 445)

KRAS-2098 Target: 5'-TAAATATTAACTCAAAAGTTGAGATTT-3' (SEQ ID NO: 1851)

5'-AUAUUAACUCAAAAGUUGAGAUUtt-3' (SEQ ID NO: 1149)
3'-UUUAUAAUUGAGUUUUCAACUCUAAAA-5' (SEQ ID NO: 446)

KRAS-2099 Target: 5'-AAATATTAACTCAAAAGTTGAGATTTT-3' (SEQ ID NO: 1852)

5'-UAUUAACUCAAAAGUUGAGAUUUtg-3' (SEQ ID NO: 1150)
3'-UUAUAAUUGAGUUUUCAACUCUAAAAC-5' (SEQ ID NO: 447)

KRAS-2100 Target: 5'-AATATTAACTCAAAAGTTGAGATTTTG-3' (SEQ ID NO: 1853)

5'-UGUGCCAAGACAUUAAUUUUUUUtt-3' (SEQ ID NO: 1151)
3'-CCACACGGUUCUGUAAUUAAAAAAAAA-5' (SEQ ID NO: 448)

KRAS-2134 Target: 5'-GGTGTGCCAAGACATTAATTTTTTTTT-3' (SEQ ID NO: 1854)

5'-CAAGACAUUAAUUUUUUUUUUAAac-3' (SEQ ID NO: 1152)
3'-CGGUUCUGUAAUUAAAAAAAAAAUUUG-5' (SEQ ID NO: 449)

KRAS-2139 Target: 5'-GCCAAGACATTAATTTTTTTTTTAAAC-3' (SEQ ID NO: 1855)

5'-AAGACAUUAAUUUUUUUUUUAAAca-3' (SEQ ID NO: 1153)
3'-GGUUCUGUAAUUAAAAAAAAAAUUUGU-5' (SEQ ID NO: 450)

KRAS-2140 Target: 5'-CCAAGACATTAATTTTTTTTTTAAACA-3' (SEQ ID NO: 1856)

5'-UUAAUUUUUUUUUUAAACAAUGAag-3' (SEQ ID NO: 1154)
3'-GUAAUUAAAAAAAAAAAUUUGUUACUUC-5' (SEQ ID NO: 451)

KRAS-2146 Target: 5'-CATTAATTTTTTTTTTAAACAATGAAG-3' (SEQ ID NO: 1857)

5'-UAAUUUUUUUUUUAAACAAUGAAgt-3' (SEQ ID NO: 1155)
3'-UAAUUAAAAAAAAAAAUUUGUUACUUCA-5' (SEQ ID NO: 452)

KRAS-2147 Target: 5'-ATTAATTTTTTTTTTAAACAATGAAGT-3' (SEQ ID NO: 1858)

5'-AUUUUUUUUUUAAACAAUGAAGUga-3' (SEQ ID NO: 1156)
3'-AUUAAAAAAAAAAAUUUGUUACUUCACU-5' (SEQ ID NO: 453)

KRAS-2149 Target: 5'-TAATTTTTTTTTTAAACAATGAAGTGA-3' (SEQ ID NO: 1859)

5'-UUUUUUUUUAAACAAUGAAGUGAaa-3' (SEQ ID NO: 1157)
3'-UAAAAAAAAAAUUUGUUACUUCACUUU-5' (SEQ ID NO: 454)

KRAS-2151 Target: 5'-ATTTTTTTTTTAAACAATGAAGTGAAA-3' (SEQ ID NO: 1860)

5'-UUUUUUUUAAACAAUGAAGUGAAaa-3' (SEQ ID NO: 1158)
3'-AAAAAAAAAAUUUGUUACUUCACUUUU-5' (SEQ ID NO: 455)

KRAS-2152 Target: 5'-TTTTTTTTTTAAACAATGAAGTGAAAA-3' (SEQ ID NO: 1861)

5'-UUUUUUUAAACAAUGAAGUGAAAaa-3' (SEQ ID NO: 1159)
3'-AAAAAAAAAUUUGUUACUUCACUUUUU-5' (SEQ ID NO: 456)

KRAS-2153 Target: 5'-TTTTTTTTTAAACAATGAAGTGAAAAA-3' (SEQ ID NO: 1862)

5'-UUUUUUAAACAAUGAAGUGAAAAag-3' (SEQ ID NO: 1160)
3'-AAAAAAAAUUUGUUACUUCACUUUUUC-5' (SEQ ID NO: 457)

KRAS-2154 Target: 5'-TTTTTTTTAAACAATGAAGTGAAAAAG-3' (SEQ ID NO: 1863)

5'-UUUUUAAACAAUGAAGUGAAAAAgt-3' (SEQ ID NO: 1161)
3'-AAAAAAAUUUGUUACUUCACUUUUUCA-5' (SEQ ID NO: 458)

KRAS-2155 Target: 5'-TTTTTTTAAACAATGAAGTGAAAAAGT-3' (SEQ ID NO: 1864)

5'-UUUAAACAAUGAAGUGAAAAAGUtt-3' (SEQ ID NO: 1162)
3'-AAAAAUUUGUUACUUCACUUUUUCAAA-5' (SEQ ID NO: 459)

KRAS-2157 Target: 5'-TTTTTAAACAATGAAGTGAAAAAGTTT-3' (SEQ ID NO: 1865)

5'-UUAAACAAUGAAGUGAAAAAGUUtt-3' (SEQ ID NO: 1163)
3'-AAAAUUUGUUACUUCACUUUUUCAAAA-5' (SEQ ID NO: 460)

KRAS-2158 Target: 5'-TTTTAAACAATGAAGTGAAAAAGTTTT-3' (SEQ ID NO: 1866)

5'-UAAACAAUGAAGUGAAAAAGUUUta-3' (SEQ ID NO: 1164)
3'-AAAUUUGUUACUUCACUUUUUCAAAAU-5' (SEQ ID NO: 461)

KRAS-2159 Target: 5'-TTTAAACAATGAAGTGAAAAAGTTTTA-3' (SEQ ID NO: 1867)

5'-GAAGUGAAAAAGUUUUACAAUCUct-3' (SEQ ID NO: 1165)
3'-UACUUCACUUUUUCAAAAUGUUAGAGA-5' (SEQ ID NO: 462)

KRAS-2167 Target: 5'-ATGAAGTGAAAAAGTTTTACAATCTCT-3' (SEQ ID NO: 1868)

5'-AAAAAGUUUUACAAUCUCUAGGUtt-3' (SEQ ID NO: 1166)
3'-ACUUUUUCAAAAUGUUAGAGAUCCAAA-5' (SEQ ID NO: 463)

KRAS-2173 Target: 5'-TGAAAAAGTTTTACAATCTCTAGGTTT-3' (SEQ ID NO: 1869)

5'-AAAAGUUUUACAAUCUCUAGGUUtg-3' (SEQ ID NO: 1167)
3'-CUUUUUCAAAAUGUUAGAGAUCCAAAC-5' (SEQ ID NO: 464)

KRAS-2174 Target: 5'-GAAAAAGTTTTACAATCTCTAGGTTTG-3' (SEQ ID NO: 1870)

5'-AAAGUUUUACAAUCUCUAGGUUUgg-3' (SEQ ID NO: 1168)
3'-UUUUUCAAAAUGUUAGAGAUCCAAACC-5' (SEQ ID NO: 465)

KRAS-2175 Target: 5'-AAAAAGTTTTACAATCTCTAGGTTTGG-3' (SEQ ID NO: 1871)

5'-UGGUUAAAUUAACAUUGCAUAAAca-3' (SEQ ID NO: 1169)
3'-UGACCAAUUUAAUUGUAACGUAUUUGU-5' (SEQ ID NO: 466)

KRAS-2216 Target: 5'-ACTGGTTAAATTAACATTGCATAAACA-3' (SEQ ID NO: 1872)

5'-GGUUAAAUUAACAUUGCAUAAACac-3' (SEQ ID NO: 1170)
3'-GACCAAUUUAAUUGUAACGUAUUUGUG-5' (SEQ ID NO: 467)

KRAS-2217 Target: 5'-CTGGTTAAATTAACATTGCATAAACAC-3' (SEQ ID NO: 1873)

5'-GUUAAAUUAACAUUGCAUAAACAct-3' (SEQ ID NO: 1171)
3'-ACCAAUUUAAUUGUAACGUAUUUGUGA-5' (SEQ ID NO: 468)

KRAS-2218 Target: 5'-TGGTTAAATTAACATTGCATAAACACT-3' (SEQ ID NO: 1874)

5'-AUUGCAUAAACACUUUUCAAGUCtg-3' (SEQ ID NO: 1172)
3'-UGUAACGUAUUUGUGAAAAGUUCAGAC-5' (SEQ ID NO: 469)

KRAS-2229 Target: 5'-ACATTGCATAAACACTTTTCAAGTCTG-3' (SEQ ID NO: 1875)

5'-AAGUCUGAUCCAUAUUUAAUAAUgc-3' (SEQ ID NO: 1173)
3'-AGUUCAGACUAGGUAUAAAUUAUUACG-5' (SEQ ID NO: 470)

KRAS-2247 Target: 5'-TCAAGTCTGATCCATATTTAATAATGC-3' (SEQ ID NO: 1876)

5'-CAUAUUUAAUAAUGCUUUAAAAUaa-3' (SEQ ID NO: 1174)
3'-AGGUAUAAAUUAUUACGAAAUUUUAUU-5' (SEQ ID NO: 471)

KRAS-2257 Target: 5'-TCCATATTTAATAATGCTTTAAAATAA-3' (SEQ ID NO: 1877)

5'-AUAUUUAAUAAUGCUUUAAAAUAaa-3' (SEQ ID NO: 1175)
3'-GGUAUAAAUUAUUACGAAAUUUUAUUU-5' (SEQ ID NO: 472)

KRAS-2258 Target: 5'-CCATATTTAATAATGCTTTAAAATAAA-3' (SEQ ID NO: 1878)

5'-UAUUUAAUAAUGCUUUAAAAUAAaa-3' (SEQ ID NO: 1176)
3'-GUAUAAAUUAUUACGAAAUUUUAUUUU-5' (SEQ ID NO: 473)

KRAS-2259 Target: 5'-CATATTTAATAATGCTTTAAAATAAAA-3' (SEQ ID NO: 1879)

5'-AUUUAAUAAUGCUUUAAAAUAAAaa-3' (SEQ ID NO: 1177)
3'-UAUAAAUUAUUACGAAAUUUUAUUUUU-5' (SEQ ID NO: 474)

KRAS-2260 Target: 5'-ATATTTAATAATGCTTTAAAATAAAAA-3' (SEQ ID NO: 1880)

5'-UUUAAUAAUGCUUUAAAAUAAAAat-3' (SEQ ID NO: 1178)
3'-AUAAAUUAUUACGAAAUUUUAUUUUUA-5' (SEQ ID NO: 475)

KRAS-2261 Target: 5'-TATTTAATAATGCTTTAAAATAAAAAT-3' (SEQ ID NO: 1881)

5'-UUAAUAAUGCUUUAAAAUAAAAAta-3' (SEQ ID NO: 1179)
3'-UAAAUUAUUACGAAAUUUUAUUUUUAU-5' (SEQ ID NO: 476)

KRAS-2262 Target: 5'-ATTTAATAATGCTTTAAAATAAAAATA-3' (SEQ ID NO: 1882)

5'-AAUAAUGCUUUAAAAUAAAAAUAaa-3' (SEQ ID NO: 1180)
3'-AAUUAUUACGAAAUUUUAUUUUUAUUU-5' (SEQ ID NO: 477)

KRAS-2264 Target: 5'-TTAATAATGCTTTAAAATAAAAATAAA-3' (SEQ ID NO: 1883)

5'-AUAAUGCUUUAAAAUAAAAAUAAaa-3' (SEQ ID NO: 1181)
3'-AUUAUUACGAAAUUUUAUUUUUAUUUU-5' (SEQ ID NO: 478)

KRAS-2265 Target: 5'-TAATAATGCTTTAAAATAAAAATAAAA-3' (SEQ ID NO: 1884)

5'-UAAUGCUUUAAAAUAAAAAUAAAaa-3' (SEQ ID NO: 1182)
3'-UUAUUACGAAAUUUUAUUUUUAUUUU-5' (SEQ ID NO: 479)

KRAS-2266 Target: 5'-AATAATGCTTTAAAATAAAAATAAAAA-3' (SEQ ID NO: 1885)

5'-AAUGCUUUAAAAUAAAAAUAAAAac-3' (SEQ ID NO: 1183)
3'-UAUUACGAAAUUUUAUUUUUAUUUUG-5' (SEQ ID NO: 480)

KRAS-2267 Target: 5'-ATAATGCTTTAAAATAAAAATAAAAAC-3' (SEQ ID NO: 1886)

5'-UAAAAUAAAAAUAAAAACAAUCCtt-3' (SEQ ID NO: 1184)
3'-AAAUUUUAUUUUUAUUUUUGUUAGGAA-5' (SEQ ID NO: 481)

KRAS-2274 Target: 5'-TTTAAAATAAAAATAAAAACAATCCTT-3' (SEQ ID NO: 1887)

5'-AAAAAUAAAAACAAUCCUUUUGAta-3' (SEQ ID NO: 1185)
3'-UAUUUUUAUUUUUGUUAGGAAAACUAU-5' (SEQ ID NO: 482)

KRAS-2280 Target: 5'-ATAAAAATAAAAACAATCCTTTTGATA-3' (SEQ ID NO: 1888)

5'-AAAAUAAAAACAAUCCUUUUGAUaa-3' (SEQ ID NO: 1186)
3'-AUUUUUAUUUUUGUUAGGAAAACUAUU-5' (SEQ ID NO: 483)

KRAS-2281 Target: 5'-TAAAAATAAAAACAATCCTTTTGATAA-3' (SEQ ID NO: 1889)

5'-AAAUAAAAACAAUCCUUUUGAUAaa-3' (SEQ ID NO: 1187)
3'-UUUUUAUUUUUGUUAGGAAAACUAUUU-5' (SEQ ID NO: 484)

KRAS-2282 Target: 5'-AAAAATAAAAACAATCCTTTTGATAAA-3' (SEQ ID NO: 1890)

5'-AAUAAAAACAAUCCUUUUGAUAAat-3' (SEQ ID NO: 1188)
3'-UUUUAUUUUUGUUAGGAAAACUAUUUA-5' (SEQ ID NO: 485)

KRAS-2283 Target: 5'-AAAATAAAAACAATCCTTTTGATAAAT-3' (SEQ ID NO: 1891)

5'-AUAAAAACAAUCCUUUUGAUAAAtt-3' (SEQ ID NO: 1189)
3'-UUUAUUUUUGUUAGGAAAACUAUUUAA-5' (SEQ ID NO: 486)

KRAS-2284 Target: 5'-AAATAAAAACAATCCTTTTGATAAATT-3' (SEQ ID NO: 1892)

5'-UAAAAACAAUCCUUUUGAUAAAUtt-3' (SEQ ID NO: 1190)
3'-UUAUUUUUGUUAGGAAAACUAUUUAAA-5' (SEQ ID NO: 487)

KRAS-2285 Target: 5'-AATAAAAACAATCCTTTTGATAAATTT-3' (SEQ ID NO: 1893)

5'-AAAAACAAUCCUUUUGAUAAAUUta-3' (SEQ ID NO: 1191)

3'-UAUUUUUGUUAGGAAAACUAUUUAAAU-5' (SEQ ID NO: 488)

KRAS-2286 Target: 5'-ATAAAAACAATCCTTTTGATAAATTTA-3' (SEQ ID NO: 1894)

5'-AAAACAAUCCUUUUGAUAAAAUUUaa-3' (SEQ ID NO: 1192)
3'-AUUUUUGUUAGGAAAACUAUUUAAAUU-5' (SEQ ID NO: 489)

KRAS-2287 Target: 5'-TAAAAACAATCCTTTTGATAAATTTAA-3' (SEQ ID NO: 1895)

5'-CAAUCCUUUUGAUAAAUUUAAAAtg-3' (SEQ ID NO: 1193)
3'-UUGUUAGGAAAACUAUUUAAAUUUUAC-5' (SEQ ID NO: 490)

KRAS-2291 Target: 5'-AACAATCCTTTTGATAAATTTAAAATG-3' (SEQ ID NO: 1896)

5'-CUUUUGAUAAAUUUAAAAUGUUAct-3' (SEQ ID NO: 1194)
3'-AGGAAAACUAUUUAAAUUUUACAAUGA-5' (SEQ ID NO: 491)

KRAS-2296 Target: 5'-TCCTTTTGATAAATTTAAAATGTTACT-3' (SEQ ID NO: 1897)

5'-UUUUGAUAAAUUUAAAAUGUUACtt-3' (SEQ ID NO: 1195)
3'-GGAAAACUAUUUAAAUUUUACAAUGAA-5' (SEQ ID NO: 492)

KRAS-2297 Target: 5'-CCTTTTGATAAATTTAAAATGTTACTT-3' (SEQ ID NO: 1898)

5'-UUUGAUAAAUUUAAAAUGUUACUta-3' (SEQ ID NO: 1196)
3'-GAAAACUAUUUAAAUUUUACAAUGAAU-5' (SEQ ID NO: 493)

KRAS-2298 Target: 5'-CTTTTGATAAATTTAAAATGTTACTTA-3' (SEQ ID NO: 1899)

5'-AUAAAUUUAAAAUGUUACUUAUUtt-3' (SEQ ID NO: 1197)
3'-ACUAUUUAAAUUUUACAAUGAAUAAAA-5' (SEQ ID NO: 494)

KRAS-2302 Target: 5'-TGATAAATTTAAAATGTTACTTATTTT-3' (SEQ ID NO: 1900)

5'-UAAAUUUAAAAUGUUACUUAUUUta-3' (SEQ ID NO: 1198)
3'-CUAUUUAAAUUUUACAAUGAAUAAAAU-5' (SEQ ID NO: 495)

KRAS-2303 Target: 5'-GATAAATTTAAAATGTTACTTATTTTA-3' (SEQ ID NO: 1901)

5'-AAAUUUAAAAUGUUACUUAUUUUaa-3' (SEQ ID NO: 1199)
3'-UAUUUAAAUUUUACAAUGAAUAAAAUU-5' (SEQ ID NO: 496)

KRAS-2304 Target: 5'-ATAAATTTAAAATGTTACTTATTTTAA-3' (SEQ ID NO: 1902)

5'-AAUUUAAAAUGUUACUUAUUUUAaa-3' (SEQ ID NO: 1200)
3'-AUUUAAAUUUUACAAUGAAUAAAAUUU-5' (SEQ ID NO: 497)

KRAS-2305 Target: 5'-TAAATTTAAAATGTTACTTATTTTAAA-3' (SEQ ID NO: 1903)

5'-AUUUAAAAUGUUACUUAUUUUAAaa-3' (SEQ ID NO: 1201)
3'-UUUAAAUUUUACAAUGAAUAAAAUUUU-5' (SEQ ID NO: 498)

KRAS-2306 Target: 5'-AAATTTAAAATGTTACTTATTTTAAAA-3' (SEQ ID NO: 1904)

5'-UUUAAAAUGUUACUUAUUUUAAAat-3' (SEQ ID NO: 1202)
3'-UUAAAUUUUACAAUGAAUAAAAUUUUA-5' (SEQ ID NO: 499)

KRAS-2307 Target: 5'-AATTTAAAATGTTACTTATTTTAAAAT-3' (SEQ ID NO: 1905)

5'-UAAAAUGUUACUUAUUUUAAAAUaa-3' (SEQ ID NO: 1203)
3'-AAAUUUUACAAUGAAUAAAAUUUUAUU-5' (SEQ ID NO: 500)

KRAS-2309 Target: 5'-TTTAAAATGTTACTTATTTTAAAATAA-3' (SEQ ID NO: 1906)

5'-AAAAUGUUACUUAUUUUAAAAUAaa-3' (SEQ ID NO: 1204)
3'-AAUUUUACAAUGAAUAAAAUUUUAUUU-5' (SEQ ID NO: 501)

KRAS-2310 Target: 5'-TTAAAATGTTACTTATTTTAAAATAAA-3' (SEQ ID NO: 1907)

5'-AAAUGUUACUUAUUUUAAAAUAAat-3' (SEQ ID NO: 1205)
3'-AUUUUACAAUGAAUAAAAUUUUAUUUA-5' (SEQ ID NO: 502)

KRAS-2311 Target: 5'-TAAAATGTTACTTATTTTAAAATAAAT-3' (SEQ ID NO: 1908)

5'-AAUGUUACUUAUUUUAAAAUAAAtg-3' (SEQ ID NO: 1206)
3'-UUUUACAAUGAAUAAAAUUUUAUUUAC-5' (SEQ ID NO: 503)

KRAS-2312 Target: 5'-AAAATGTTACTTATTTTAAAATAAATG-3' (SEQ ID NO: 1909)

5'-AUGUUACUUAUUUUAAAAUAAAUga-3' (SEQ ID NO: 1207)
3'-UUUACAAUGAAUAAAAUUUUAUUUACU-5' (SEQ ID NO: 504)

KRAS-2313 Target: 5'-AAATGTTACTTATTTTAAAATAAATGA-3' (SEQ ID NO: 1910)

5'-GUUACUUAUUUUAAAAUAAAUGAag-3' (SEQ ID NO: 1208)
3'-UACAAUGAAUAAAAUUUUAUUUACUUC-5' (SEQ ID NO: 505)

KRAS-2315 Target: 5'-ATGTTACTTATTTTAAAATAAATGAAG-3' (SEQ ID NO: 1911)

5'-UUAUUUUAAAAUAAAUGAAGUGAga-3' (SEQ ID NO: 1209)
3'-UGAAUAAAAUUUUAUUUACUUCACUCU-5' (SEQ ID NO: 506)

KRAS-2320 Target: 5'-ACTTATTTTAAAATAAATGAAGTGAGA-3' (SEQ ID NO: 1912)

5'-AUUUUAAAAUAAAUGAAGUGAGAtg-3' (SEQ ID NO: 1210)
3'-AAUAAAAUUUUAUUUACUUCACUCUAC-5' (SEQ ID NO: 507)

KRAS-2322 Target: 5'-TTATTTTAAAATAAATGAAGTGAGATG-3' (SEQ ID NO: 1913)

5'-UUUUAAAAUAAAUGAAGUGAGAUgg-3' (SEQ ID NO: 1211)
3'-AUAAAAUUUUAUUUACUUCACUCUACC-5' (SEQ ID NO: 508)

KRAS-2323 Target: 5'-TATTTTAAAATAAATGAAGTGAGATGG-3' (SEQ ID NO: 1914)

5'-UAAAAUAAAUGAAGUGAGAUGGCat-3' (SEQ ID NO: 1212)
3'-AAAUUUUAUUUACUUCACUCUACCGUA-5' (SEQ ID NO: 509)

KRAS-2326 Target: 5'-TTTAAAATAAATGAAGTGAGATGGCAT-3' (SEQ ID NO: 1915)

5'-AAAAUAAAUGAAGUGAGAUGGCAtg-3' (SEQ ID NO: 1213)
3'-AAUUUUAUUUACUUCACUCUACCGUAC-5' (SEQ ID NO: 510)

KRAS-2327 Target: 5'-TTAAAATAAATGAAGTGAGATGGCATG-3' (SEQ ID NO: 1916)

5'-CAUUUCUUCAUGUUAAAAGAAGUca-3' (SEQ ID NO: 1214)
3'-AGGUAAAGAAGUACAAUUUUCUUCAGU-5' (SEQ ID NO: 511)

KRAS-2447 Target: 5'-TCCATTTCTTCATGTTAAAAGAAGTCA-3' (SEQ ID NO: 1917)

5'-AUUUCUUCAUGUUAAAAGAAGUCat-3' (SEQ ID NO: 1215)
3'-GGUAAAGAAGUACAAUUUUCUUCAGUA-5' (SEQ ID NO: 512)

KRAS-2448 Target: 5'-CCATTTCTTCATGTTAAAAGAAGTCAT-3' (SEQ ID NO: 1918)

5'-CAAACUCUUAGUUUUUUUUUUUUac-3' (SEQ ID NO: 1216)
3'-GAGUUUGAGAAUCAAAAAAAAAAAAAUG-5' (SEQ ID NO: 513)

KRAS-2475 Target: 5'-CTCAAACTCTTAGTTTTTTTTTTTTAC-3' (SEQ ID NO: 1919)

5'-GUUUUUUUUUUUUACAACUAUGUaa-3' (SEQ ID NO: 1217)
3'-AUCAAAAAAAAAAAAAUGUUGAUACAUU-5' (SEQ ID NO: 514)

KRAS-2485 Target: 5'-TAGTTTTTTTTTTTTACAACTATGTAA-3' (SEQ ID NO: 1920)

5'-UUUUUUUUUUUUACAACUAUGUAat-3' (SEQ ID NO: 1218)
3'-UCAAAAAAAAAAAAAUGUUGAUACAUUA-5' (SEQ ID NO: 515)

KRAS-2486 Target: 5'-AGTTTTTTTTTTTTACAACTATGTAAT-3' (SEQ ID NO: 1921)

5'-UUUUUUUUUUUACAACUAUGUAAtt-3' (SEQ ID NO: 1219)
3'-CAAAAAAAAAAAAAUGUUGAUACAUUAA-5' (SEQ ID NO: 516)

KRAS-2487 Target: 5'-GTTTTTTTTTTTTACAACTATGTAATT-3' (SEQ ID NO: 1922)

5'-UUUUUUUUUUACAACUAUGUAAUtt-3' (SEQ ID NO: 1220)
3'-AAAAAAAAAAAAAUGUUGAUACAUUAAA-5' (SEQ ID NO: 517)

KRAS-2488 Target: 5'-TTTTTTTTTTTTACAACTATGTAATTT-3' (SEQ ID NO: 1923)

5'-UUUUUUUUUACAACUAUGUAAUUta-3' (SEQ ID NO: 1221)
3'-AAAAAAAAAAAUGUUGAUACAUUAAAU-5' (SEQ ID NO: 518)

KRAS-2489 Target: 5'-TTTTTTTTTTTACAACTATGTAATTTA-3' (SEQ ID NO: 1924)

5'-UUUUUUUUACAACUAUGUAAUUUat-3' (SEQ ID NO: 1222)
3'-AAAAAAAAAAUGUUGAUACAUUAAAUA-5' (SEQ ID NO: 519)

KRAS-2490 Target: 5'-TTTTTTTTTTACAACTATGTAATTTAT-3' (SEQ ID NO: 1925)

5'-UUUUUUUACAACUAUGUAAUUUAta-3' (SEQ ID NO: 1223)
3'-AAAAAAAAAUGUUGAUACAUUAAAUAU-5' (SEQ ID NO: 520)

KRAS-2491 Target: 5'-TTTTTTTTTACAACTATGTAATTTATA-3' (SEQ ID NO: 1926)

5'-UUUUUUACAACUAUGUAAUUUAUat-3' (SEQ ID NO: 1224)
3'-AAAAAAAAUGUUGAUACAUUAAAUAUA-5' (SEQ ID NO: 521)

KRAS-2492 Target: 5'-TTTTTTTTACAACTATGTAATTTATAT-3' (SEQ ID NO: 1927)

5'-UUUUUACAACUAUGUAAUUUAUAtt-3' (SEQ ID NO: 1225)
3'-AAAAAAAUGUUGAUACAUUAAAUAUAA-5' (SEQ ID NO: 522)

KRAS-2493 Target: 5'-TTTTTTTACAACTATGTAATTTATATT-3' (SEQ ID NO: 1928)

5'-UUUUACAACUAUGUAAUUUAUAUtc-3' (SEQ ID NO: 1226)
3'-AAAAAAUGUUGAUACAUUAAAUAUAAG-5' (SEQ ID NO: 523)

KRAS-2494 Target: 5'-TTTTTTACAACTATGTAATTTATATTC-3' (SEQ ID NO: 1929)

5'-UUUACAACUAUGUAAUUUAUAUUcc-3' (SEQ ID NO: 1227)
3'-AAAAAUGUUGAUACAUUAAAUAUAAGG-5' (SEQ ID NO: 524)

KRAS-2495 Target: 5'-TTTTTACAACTATGTAATTTATATTCC-3' (SEQ ID NO: 1930)

5'-CUAUGUAAUUUAUAUUCCAUUUAca-3' (SEQ ID NO: 1228)
3'-UUGAUACAUUAAAUAUAAGGUAAAUGU-5' (SEQ ID NO: 525)

KRAS-2502 Target: 5'-AACTATGTAATTTATATTCCATTTACA-3' (SEQ ID NO: 1931)

5'-UAUGUAAUUUAUAUUCCAUUUACat-3' (SEQ ID NO: 1229)
3'-UGAUACAUUAAAUAUAAGGUAAAUGUA-5' (SEQ ID NO: 526)

KRAS-2503 Target: 5'-ACTATGTAATTTATATTCCATTTACAT-3' (SEQ ID NO: 1932)

5'-AUGUAAUUUAUAUUCCAUUUACAta-3' (SEQ ID NO: 1230)
3'-GAUACAUUAAAUAUAAGGUAAAUGUAU-5' (SEQ ID NO: 527)

KRAS-2504 Target: 5'-CTATGTAATTTATATTCCATTTACATA-3' (SEQ ID NO: 1933)

5'-UUUAUAUUCCAUUUACAUAAGGAta-3' (SEQ ID NO: 1231)
3'-UUAAAUAUAAGGUAAAUGUAUUCCUAU-5' (SEQ ID NO: 528)

KRAS-2510 Target: 5'-AATTTATATTCCATTTACATAAGGATA-3' (SEQ ID NO: 1934)

5'-UUAUAUUCCAUUUACAUAAGGAUac-3' (SEQ ID NO: 1232)
3'-UAAAUAUAAGGUAAAUGUAUUCCUAUG-5' (SEQ ID NO: 529)

KRAS-2511 Target: 5'-ATTTATATTCCATTTACATAAGGATAC-3' (SEQ ID NO: 1935)

5'-UAUAUUCCAUUUACAUAAGGAUAca-3' (SEQ ID NO: 1233)
3'-AAAUAUAAGGUAAAUGUAUUCCUAUGU-5' (SEQ ID NO: 530)

KRAS-2512 Target: 5'-TTTATATTCCATTTACATAAGGATACA-3' (SEQ ID NO: 1936)

5'-AUAUUCCAUUUACAUAAGGAUACac-3' (SEQ ID NO: 1234)
3'-AAUAUAAGGUAAAUGUAUUCCUAUGUG-5' (SEQ ID NO: 531)

KRAS-2513 Target: 5'-TTATATTCCATTTACATAAGGATACAC-3' (SEQ ID NO: 1937)

5'-CAUAAGGAUACACUUAUUUGUCAag-3' (SEQ ID NO: 1235)
3'-AUGUAUUCCUAUGUGAAUAAACAGUUC-5' (SEQ ID NO: 532)

KRAS-2525 Target: 5'-TACATAAGGATACACTTATTTGTCAAG-3' (SEQ ID NO: 1938)

5'-AGGAUACACUUAUUUGUCAAGCUca-3' (SEQ ID NO: 1236)
3'-AUUCCUAUGUGAAUAAACAGUUCGAGU-5' (SEQ ID NO: 533)

KRAS-2529 Target: 5'-TAAGGATACACTTATTTGTCAAGCTCA-3' (SEQ ID NO: 1939)

5'-CUGUAAAUUUUUAACCUAUGUUAca-3' (SEQ ID NO: 1237)
3'-UAGACAUUUAAAAAUUGGAUACAAUGU-5' (SEQ ID NO: 534)

KRAS-2561 Target: 5'-ATCTGTAAATTTTTAACCTATGTTACA-3' (SEQ ID NO: 1940)

5'-UGUAAAUUUUUAACCUAUGUUACac-3' (SEQ ID NO: 1238)
3'-AGACAUUUAAAAAUUGGAUACAAUGUG-5' (SEQ ID NO: 535)

KRAS-2562 Target: 5'-TCTGTAAATTTTTAACCTATGTTACAC-3' (SEQ ID NO: 1941)

5'-GUAAAUUUUUAACCUAUGUUACAcc-3' (SEQ ID NO: 1239)
3'-GACAUUUAAAAAUUGGAUACAAUGUGG-5' (SEQ ID NO: 536)

KRAS-2563 Target: 5'-CTGTAAATTTTTAACCTATGTTACACC-3' (SEQ ID NO: 1942)

5'-CAAGAGGUGAAGUUUAUAUUUGAat-3' (SEQ ID NO: 1240)
3'-ACGUUCUCCACUUCAAAUAUAAACUUA-5' (SEQ ID NO: 537)

KRAS-2619 Target: 5'-TGCAAGAGGTGAAGTTTATATTTGAAT-3' (SEQ ID NO: 1943)

5'-AGAGGUGAAGUUUAUAUUUGAAUat-3' (SEQ ID NO: 1241)
3'-GUUCUCCACUUCAAAUAUAAACUUAUA-5' (SEQ ID NO: 538)

KRAS-2621 Target: 5'-CAAGAGGTGAAGTTTATATTTGAATAT-3' (SEQ ID NO: 1944)

5'-GAGGUGAAGUUUAUAUUUGAAUAtc-3' (SEQ ID NO: 1242)
3'-UUCUCCACUUCAAAUAUAAACUUAUAG-5' (SEQ ID NO: 539)

KRAS-2622 Target: 5'-AAGAGGTGAAGTTTATATTTGAATATC-3' (SEQ ID NO: 1945)

5'-GGUGAAGUUUAUAUUUGAAUAUCca-3' (SEQ ID NO: 1243)
3'-CUCCACUUCAAAUAUAAACUUAUAGGU-5' (SEQ ID NO: 540)

KRAS-2624 Target: 5'-GAGGTGAAGTTTATATTTGAATATCCA-3' (SEQ ID NO: 1946)

5'-GUGAAGUUUAUAUUUGAAUAUCCat-3' (SEQ ID NO: 1244)

3'-UCCACUUCAAAUAUAAACUUAUAGGUA-5' (SEQ ID NO: 541)

KRAS-2625 Target: 5'-AGGTGAAGTTTATATTTGAATATCCAT-3' (SEQ ID NO: 1947)

5'-GUUUAUAUUUGAAUAUCCAUUCUcg-3' (SEQ ID NO: 1245)
3'-UUCAAAUAUAAACUUAUAGGUAAGAGC-5' (SEQ ID NO: 542)

KRAS-2630 Target: 5'-AAGTTTATATTTGAATATCCATTCTCG-3' (SEQ ID NO: 1948)

5'-UUGAUGCAGUUUUAAUACUUGUAat-3' (SEQ ID NO: 1246)
3'-UGAACUACGUCAAAAUUAUGAACAUUA-5' (SEQ ID NO: 543)

KRAS-2718 Target: 5'-ACTTGATGCAGTTTTAATACTTGTAAT-3' (SEQ ID NO: 1949)

5'-GAUGCAGUUUUAAUACUUGUAAUtc-3' (SEQ ID NO: 1247)
3'-AACUACGUCAAAAUUAUGAACAUUAAG-5' (SEQ ID NO: 544)

KRAS-2720 Target: 5'-TTGATGCAGTTTTAATACTTGTAATTC-3' (SEQ ID NO: 1950)

5'-UUUGACCUAAUCACUAAUUUUCAgg-3' (SEQ ID NO: 1248)
3'-CUAAACUGGAUUAGUGAUUAAAAGUCC-5' (SEQ ID NO: 545)

KRAS-2871 Target: 5'-GATTTGACCTAATCACTAATTTTCAGG-3' (SEQ ID NO: 1951)

5'-CUAAUCACUAAUUUUCAGGUGGUgg-3' (SEQ ID NO: 1249)
3'-UGGAUUAGUGAUUAAAAGUCCACCACC-5' (SEQ ID NO: 546)

KRAS-2877 Target: 5'-ACCTAATCACTAATTTTCAGGTGGTGG-3' (SEQ ID NO: 1952)

5'-GUAGGAUUUUUCAAACCUGGUAUga-3' (SEQ ID NO: 1250)
3'-GUCAUCCUAAAAAGUUUGGACCAUACU-5' (SEQ ID NO: 547)

KRAS-2946 Target: 5'-CAGTAGGATTTTTCAAACCTGGTATGA-3' (SEQ ID NO: 1953)

5'-UGGAAGGAGAAUUUAAUAAAGAUag-3' (SEQ ID NO: 1251)
3'-UCACCUUCCUCUUAAAUUAUUUCUAUC-5' (SEQ ID NO: 548)

KRAS-2991 Target: 5'-AGTGGAAGGAGAATTTAATAAAGATAG-3' (SEQ ID NO: 1954)

5'-AAGGAGAAUUUAAUAAAGAUAGUgc-3' (SEQ ID NO: 1252)
3'-CCUUCCUCUUAAAUUAUUUCUAUCACG-5' (SEQ ID NO: 549)

KRAS-2994 Target: 5'-GGAAGGAGAATTTAATAAAGATAGTGC-3' (SEQ ID NO: 1955)

5'-GGAGAAUUUAAUAAAGAUAGUGCtg-3' (SEQ ID NO: 1253)
3'-UUCCUCUUAAAUUAUUUCUAUCACGAC-5' (SEQ ID NO: 550)

KRAS-2996 Target: 5'-AAGGAGAATTTAATAAAGATAGTGCTG-3' (SEQ ID NO: 1956)

5'-GAGAAUUUAAUAAAGAUAGUGCUga-3' (SEQ ID NO: 1254)
3'-UCCUCUUAAAUUAUUUCUAUCACGACU-5' (SEQ ID NO: 551)

KRAS-2997 Target: 5'-AGGAGAATTTAATAAAGATAGTGCTGA-3' (SEQ ID NO: 1957)

5'-AUUUAAUAAAGAUAGUGCUGAAAga-3' (SEQ ID NO: 1255)
3'-CUUAAAUUAUUUCUAUCACGACUUUCU-5' (SEQ ID NO: 552)

KRAS-3001 Target: 5'-GAATTTAATAAAGATAGTGCTGAAAGA-3' (SEQ ID NO: 1958)

5'-CUUAGGUAAUCUAUAACUAGGACta-3' (SEQ ID NO: 1256)
3'-AGGAAUCCAUUAGAUAUUGAUCCUGAU-5' (SEQ ID NO: 553)

KRAS-3030 Target: 5'-TCCTTAGGTAATCTATAACTAGGACTA-3' (SEQ ID NO: 1959)

5'-UUAGGUAAUCUAUAACUAGGACUac-3' (SEQ ID NO: 1257)
3'-GGAAUCCAUUAGAUAUUGAUCCUGAUG-5' (SEQ ID NO: 554)

KRAS-3031 Target: 5'-CCTTAGGTAATCTATAACTAGGACTAC-3' (SEQ ID NO: 1960)

5'-CAGUAAUACAUUCCAUUGUUUUAgt-3' (SEQ ID NO: 1258)
3'-UUGUCAUUAUGUAAGGUAACAAAAUCA-5' (SEQ ID NO: 555)

KRAS-3065 Target: 5'-AACAGTAATACATTCCATTGTTTTAGT-3' (SEQ ID NO: 1961)

5'-GUAAUACAUUCCAUUGUUUUAGUaa-3' (SEQ ID NO: 1259)
3'-GUCAUUAUGUAAGGUAACAAAAUCAUU-5' (SEQ ID NO: 556)

KRAS-3067 Target: 5'-CAGTAATACATTCCATTGTTTTAGTAA-3' (SEQ ID NO: 1962)

5'-UAAUACAUUCCAUUGUUUUAGUAac-3' (SEQ ID NO: 1260)
3'-UCAUUAUGUAAGGUAACAAAAUCAUUG-5' (SEQ ID NO: 557)

KRAS-3068 Target: 5'-AGTAATACATTCCATTGTTTTAGTAAC-3' (SEQ ID NO: 1963)

5'-AAUACAUUCCAUUGUUUUAGUAAcc-3' (SEQ ID NO: 1261)
3'-CAUUAUGUAAGGUAACAAAAUCAUUGG-5' (SEQ ID NO: 558)

KRAS-3069 Target: 5'-GTAATACATTCCATTGTTTTAGTAACC-3' (SEQ ID NO: 1964)

5'-AUUGUUUUAGUAACCAGAAAUCUtc-3' (SEQ ID NO: 1262)
3'-GGUAACAAAAUCAUUGGUCUUUAGAAG-5' (SEQ ID NO: 559)

KRAS-3079 Target: 5'-CCATTGTTTTAGTAACCAGAAATCTTC-3' (SEQ ID NO: 1965)

5'-CAGAAAUCUUCAUGCAAUGAAAAat-3' (SEQ ID NO: 1263)
3'-UGGUCUUUAGAAGUACGUUACUUUUUA-5' (SEQ ID NO: 560)

KRAS-3093 Target: 5'-ACCAGAAATCTTCATGCAATGAAAAAT-3' (SEQ ID NO: 1966)

5'-CAUGCAAUGAAAAAUACUUUAAUtc-3' (SEQ ID NO: 1264)
3'-AAGUACGUUACUUUUUAUGAAAUUAAG-5' (SEQ ID NO: 561)

KRAS-3103 Target: 5'-TTCATGCAATGAAAAATACTTTAATTC-3' (SEQ ID NO: 1967)

5'-UGAAAAAUACUUUAAUUCAUGAAgc-3' (SEQ ID NO: 1265)
3'-UUACUUUUUAUGAAAUUAAGUACUUCG-5' (SEQ ID NO: 562)

KRAS-3110 Target: 5'-AATGAAAAATACTTTAATTCATGAAGC-3' (SEQ ID NO: 1968)

5'-AAAAAUACUUUAAUUCAUGAAGCtt-3' (SEQ ID NO: 1266)
3'-ACUUUUUAUGAAAUUAAGUACUUCGAA-5' (SEQ ID NO: 563)

KRAS-3112 Target: 5'-TGAAAAATACTTTAATTCATGAAGCTT-3' (SEQ ID NO: 1969)

5'-AAAAUACUUUAAUUCAUGAAGCUta-3' (SEQ ID NO: 1267)
3'-CUUUUUAUGAAAUUAAGUACUUCGAAU-5' (SEQ ID NO: 564)

KRAS-3113 Target: 5'-GAAAAATACTTTAATTCATGAAGCTTA-3' (SEQ ID NO: 1970)

5'-CAUGAAGCUUACUUUUUUUUUUUgg-3' (SEQ ID NO: 1268)
3'-AAGUACUUCGAAUGAAAAAAAAAAAACC-5' (SEQ ID NO: 565)

KRAS-3127 Target: 5'-TTCATGAAGCTTACTTTTTTTTTTTGG-3' (SEQ ID NO: 1971)

5'-GAAGCUUACUUUUUUUUUUUGGUgt-3' (SEQ ID NO: 1269)
3'-UACUUCGAAUGAAAAAAAAAAACCACA-5' (SEQ ID NO: 566)

KRAS-3130 Target: 5'-ATGAAGCTTACTTTTTTTTTTTGGTGT-3' (SEQ ID NO: 1972)

5'-CUUACUUUUUUUUUUUGGUGUCAga-3' (SEQ ID NO: 1270)
3'-UCGAAUGAAAAAAAAAAAACCACAGUCU-5' (SEQ ID NO: 567)

KRAS-3134 Target: 5'-AGCTTACTTTTTTTTTTTGGTGTCAGA-3' (SEQ ID NO: 1973)

5'-CUUUUUUUUUUUGGUGUCAGAGUct-3' (SEQ ID NO: 1271)
3'-AUGAAAAAAAAAAACCACAGUCUCAGA-5' (SEQ ID NO: 568)

KRAS-3138 Target: 5'-TACTTTTTTTTTTTGGTGTCAGAGTCT-3' (SEQ ID NO: 1974)

5'-UUUUUUUUUUUGGUGUCAGAGUCtc-3' (SEQ ID NO: 1272)
3'-UGAAAAAAAAAAACCACAGUCUCAGAG-5' (SEQ ID NO: 569)

KRAS-3139 Target: 5'-ACTTTTTTTTTTTGGTGTCAGAGTCTC-3' (SEQ ID NO: 1975)

5'-CUAAUUUUUGUAUUUUUAGGAGAga-3' (SEQ ID NO: 1273)
3'-UUGAUUAAAAACAUAAAAAUCCUCUCU-5' (SEQ ID NO: 570)

KRAS-3297 Target: 5'-AACTAATTTTTGTATTTTTAGGAGAGA-3' (SEQ ID NO: 1976)

5'-AUUUUUGUAUUUUUAGGAGAGACgg-3' (SEQ ID NO: 1274)
3'-AUUAAAAAACAUAAAAAUCCUCUCUGCC-5' (SEQ ID NO: 571)

KRAS-3300 Target: 5'-TAATTTTTGTATTTTTAGGAGAGACGG-3' (SEQ ID NO: 1977)

5'-CAUUUAUUCAGCAAAUAUUUAUUga-3' (SEQ ID NO: 1275)
3'-GAGUAAAUAAGUCGUUUAUAAAUAACU-5' (SEQ ID NO: 572)

KRAS-3413 Target: 5'-CTCATTTATTCAGCAAATATTTATTGA-3' (SEQ ID NO: 1978)

5'-UUUAUUCAGCAAAUAUUUAUUGAgt-3' (SEQ ID NO: 1276)
3'-GUAAAUAAGUCGUUUAUAAAUAACUCA-5' (SEQ ID NO: 573)

KRAS-3415 Target: 5'-CATTTATTCAGCAAATATTTATTGAGT-3' (SEQ ID NO: 1979)

5'-UAUUCAGCAAAUAUUUAUUGAGUgc-3' (SEQ ID NO: 1277)
3'-AAAUAAGUCGUUUAUAAAUAACUCACG-5' (SEQ ID NO: 574)

KRAS-3417 Target: 5'-TTTATTCAGCAAATATTTATTGAGTGC-3' (SEQ ID NO: 1980)

5'-UUUUAGUUUUGCAAAGAAGGGGUtt-3' (SEQ ID NO: 1278)
3'-AUAAAAUCAAAACGUUUCUUCCCCAAA-5' (SEQ ID NO: 575)

KRAS-3589 Target: 5'-TATTTTAGTTTTGCAAAGAAGGGGTTT-3' (SEQ ID NO: 1981)

5'-CUAUAAUUGUUUUGCUACGAUUCca-3' (SEQ ID NO: 1279)
3'-GAGAUAUUAACAAAACGAUGCUAAGGU-5' (SEQ ID NO: 576)

KRAS-3630 Target: 5'-CTCTATAATTGTTTTGCTACGATTCCA-3' (SEQ ID NO: 1982)

5'-CUUUAUGUAAAUCACUUCAUUGUtt-3' (SEQ ID NO: 1280)
3'-AUGAAAUACAUUUAGUGAAGUAACAAA-5' (SEQ ID NO: 577)

KRAS-3677 Target: 5'-TACTTTATGTAAATCACTTCATTGTTT-3' (SEQ ID NO: 1983)

5'-UUUAUGUAAAUCACUUCAUUGUUtt-3' (SEQ ID NO: 1281)
3'-UGAAAUACAUUUAGUGAAGUAACAAAA-5' (SEQ ID NO: 578)

KRAS-3678 Target: 5'-ACTTTATGTAAATCACTTCATTGTTTT-3' (SEQ ID NO: 1984)

5'-UUAUGUAAAUCACUUCAUUGUUUta-3' (SEQ ID NO: 1282)
3'-GAAAUACAUUUAGUGAAGUAACAAAAU-5' (SEQ ID NO: 579)

KRAS-3679 Target: 5'-CTTTATGTAAATCACTTCATTGTTTTA-3' (SEQ ID NO: 1985)

5'-UAUGUAAAUCACUUCAUUGUUUUaa-3' (SEQ ID NO: 1283)
3'-AAAUACAUUUAGUGAAGUAACAAAAUU-5' (SEQ ID NO: 580)

KRAS-3680 Target: 5'-TTTATGTAAATCACTTCATTGTTTTAA-3' (SEQ ID NO: 1986)

5'-AUGUAAAUCACUUCAUUGUUUUAaa-3' (SEQ ID NO: 1284)
3'-AAUACAUUUAGUGAAGUAACAAAAUUU-5' (SEQ ID NO: 581)

KRAS-3681 Target: 5'-TTATGTAAATCACTTCATTGTTTTAAA-3' (SEQ ID NO: 1987)

5'-UGUAAAUCACUUCAUUGUUUUAAag-3' (SEQ ID NO: 1285)
3'-AUACAUUUAGUGAAGUAACAAAAUUUC-5' (SEQ ID NO: 582)

KRAS-3682 Target: 5'-TATGTAAATCACTTCATTGTTTTAAAG-3' (SEQ ID NO: 1988)

5'-GUAAAUCACUUCAUUGUUUUAAAgg-3' (SEQ ID NO: 1286)
3'-UACAUUUAGUGAAGUAACAAAAUUUCC-5' (SEQ ID NO: 583)

KRAS-3683 Target: 5'-ATGTAAATCACTTCATTGTTTTAAAGG-3' (SEQ ID NO: 1989)

5'-UGUUUUAAAGGAAUAAACUUGAUta-3' (SEQ ID NO: 1287)
3'-UAACAAAAUUUCCUUAUUUGAACUAAU-5' (SEQ ID NO: 584)

KRAS-3697 Target: 5'-ATTGTTTTAAAGGAATAAACTTGATTA-3' (SEQ ID NO: 1990)

5'-GUUUUAAAGGAAUAAACUUGAUUat-3' (SEQ ID NO: 1288)
3'-AACAAAAUUUCCUUAUUUGAACUAAUA-5' (SEQ ID NO: 585)

KRAS-3698 Target: 5'-TTGTTTTAAAGGAATAAACTTGATTAT-3' (SEQ ID NO: 1991)

5'-UUAAAGGAAUAAACUUGAUUAUAtt-3' (SEQ ID NO: 1289)
3'-AAAAUUUCCUUAUUUGAACUAAUAUAA-5' (SEQ ID NO: 586)

KRAS-3701 Target: 5'-TTTTAAAGGAATAAACTTGATTATATT-3' (SEQ ID NO: 1992)

5'-UAAAGGAAUAAACUUGAUUAUAUtg-3' (SEQ ID NO: 1290)
3'-AAAUUUCCUUAUUUGAACUAAUAUAAC-5' (SEQ ID NO: 587)

KRAS-3702 Target: 5'-TTTAAAGGAATAAACTTGATTATATTG-3' (SEQ ID NO: 1993)

5'-AAAGGAAUAAACUUGAUUAUAUUgt-3' (SEQ ID NO: 1291)
3'-AAUUUCCUUAUUUGAACUAAUAUAACA-5' (SEQ ID NO: 588)

KRAS-3703 Target: 5'-TTAAAGGAATAAACTTGATTATATTGT-3' (SEQ ID NO: 1994)

5'-AGGAAUAAACUUGAUUAUAUUGUtt-3' (SEQ ID NO: 1292)
3'-UUUCCUUAUUUGAACUAAUAUAACAAA-5' (SEQ ID NO: 589)

KRAS-3705 Target: 5'-AAAGGAATAAACTTGATTATATTGTTT-3' (SEQ ID NO: 1995)

5'-GGAAUAAACUUGAUUAUAUUGUUtt-3' (SEQ ID NO: 1293)
3'-UUCCUUAUUUGAACUAAUAUAACAAAA-5' (SEQ ID NO: 590)

KRAS-3706 Target: 5'-AAGGAATAAACTTGATTATATTGTTTT-3' (SEQ ID NO: 1996)

5'-GAAUAAACUUGAUUAUAUUGUUUtt-3' (SEQ ID NO: 1294)
3'-UCCUUAUUUGAACUAAUAUAACAAAAA-5' (SEQ ID NO: 591)

KRAS-3707 Target: 5'-AGGAATAAACTTGATTATATTGTTTTT-3' (SEQ ID NO: 1997)

5'-AAUAAACUUGAUUAUAUUGUUUUtt-3' (SEQ ID NO: 1295)
3'-CCUUAUUUGAACUAAUAUAACAAAAAA-5' (SEQ ID NO: 592)

KRAS-3708 Target: 5'-GGAATAAACTTGATTATATTGTTTTTT-3' (SEQ ID NO: 1998)

5'-AUAAACUUGAUUAUAUUGUUUUUtt-3' (SEQ ID NO: 1296)
3'-CUUAUUUGAACUAAUAUAACAAAAAAA-5' (SEQ ID NO: 593)

KRAS-3709 Target: 5'-GAATAAACTTGATTATATTGTTTTTTT-3' (SEQ ID NO: 1999)

5'-CUUGAUUAUAUUGUUUUUUUAUUtg-3' (SEQ ID NO: 1297)

3'-UUGAACUAAUAUAACAAAAAAAUAAAC-5' (SEQ ID NO: 594)

KRAS-3714 Target: 5'-AACTTGATTATATTGTTTTTTTATTTG-3' (SEQ ID NO: 2000)

5'-UUGAUUAUAUUGUUUUUUUAUUUgg-3' (SEQ ID NO: 1298)
3'-UGAACUAAUAUAACAAAAAAAUAAACC-5' (SEQ ID NO: 595)

KRAS-3715 Target: 5'-ACTTGATTATATTGTTTTTTTATTTGG-3' (SEQ ID NO: 2001)

5'-AUUAUAUUGUUUUUUUAUUUGGCat-3' (SEQ ID NO: 1299)
3'-ACUAAUAUAACAAAAAAAUAAACCGUA-5' (SEQ ID NO: 596)

KRAS-3718 Target: 5'-TGATTATATTGTTTTTTTATTTGGCAT-3' (SEQ ID NO: 2002)

5'-AUUGUUUUUUUAUUUGGCAUAACtg-3' (SEQ ID NO: 1300)
3'-UAUAACAAAAAAAUAAACCGUAUUGAC-5' (SEQ ID NO: 597)

KRAS-3723 Target: 5'-ATATTGTTTTTTTATTTGGCATAACTG-3' (SEQ ID NO: 2003)

5'-UUGUUUUUUUAUUUGGCAUAACUgt-3' (SEQ ID NO: 1301)
3'-AUAACAAAAAAAUAAACCGUAUUGACA-5' (SEQ ID NO: 598)

KRAS-3724 Target: 5'-TATTGTTTTTTTATTTGGCATAACTGT-3' (SEQ ID NO: 2004)

5'-UUUUUUAUUUGGCAUAACUGUGAtt-3' (SEQ ID NO: 1302)
3'-CAAAAAAAUAAACCGUAUUGACACUAA-5' (SEQ ID NO: 599)

KRAS-3728 Target: 5'-GTTTTTTTATTTGGCATAACTGTGATT-3' (SEQ ID NO: 2005)

5'-UUUUUAUUUGGCAUAACUGUGAUtc-3' (SEQ ID NO: 1303)
3'-AAAAAAAUAAACCGUAUUGACACUAAG-5' (SEQ ID NO: 600)

KRAS-3729 Target: 5'-TTTTTTTATTTGGCATAACTGTGATTC-3' (SEQ ID NO: 2006)

5'-AUAACUGUGAUUCUUUUAGGACAat-3' (SEQ ID NO: 1304)
3'-CGUAUUGACACUAAGAAAAUCCUGUUA-5' (SEQ ID NO: 601)

KRAS-3741 Target: 5'-GCATAACTGTGATTCTTTTAGGACAAT-3' (SEQ ID NO: 2007)

5'-UGUGAUUCUUUUAGGACAAUUACtg-3' (SEQ ID NO: 1305)
3'-UGACACUAAGAAAAUCCUGUUAAUGAC-5' (SEQ ID NO: 602)

KRAS-3746 Target: 5'-ACTGTGATTCTTTTAGGACAATTACTG-3' (SEQ ID NO: 2008)

5'-GUGAUUCUUUUAGGACAAUUACUgt-3' (SEQ ID NO: 1306)
3'-GACACUAAGAAAAUCCUGUUAAUGACA-5' (SEQ ID NO: 603)

KRAS-3747 Target: 5'-CTGTGATTCTTTTAGGACAATTACTGT-3' (SEQ ID NO: 2009)

5'-UGUAUGUCAGAUAUUCAUAUUGAcc-3' (SEQ ID NO: 1307)
3'-CCACAUACAGUCUAUAAGUAUAACUGG-5' (SEQ ID NO: 604)

KRAS-3783 Target: 5'-GGTGTATGTCAGATATTCATATTGACC-3' (SEQ ID NO: 2010)

5'-GUAUGUCAGAUAUUCAUAUUGACcc-3' (SEQ ID NO: 1308)
3'-CACAUACAGUCUAUAAGUAUAACUGGG-5' (SEQ ID NO: 605)

KRAS-3784 Target: 5'-GTGTATGTCAGATATTCATATTGACCC-3' (SEQ ID NO: 2011)

5'-AAUGUGUAAUAUUCCAGUUUUCUct-3' (SEQ ID NO: 1309)
3'-GUUUACACAUUAUAAGGUCAAAAGAGA-5' (SEQ ID NO: 606)

KRAS-3810 Target: 5'-CAAATGTGTAATATTCCAGTTTTCTCT-3' (SEQ ID NO: 2012)

5'-UAAGUAAUUAAAAUAUACUUAAAaa-3' (SEQ ID NO: 1310)
3'-GUAUUCAUUAAUUUUAUAUGAAUUUUU-5' (SEQ ID NO: 607)

KRAS-3838 Target: 5'-CATAAGTAATTAAAATATACTTAAAAA-3' (SEQ ID NO: 2013)

5'-AAGUAAUUAAAAUAUACUUAAAAat-3' (SEQ ID NO: 1311)
3'-UAUUCAUUAAUUUUAUAUGAAUUUUUA-5' (SEQ ID NO: 608)

KRAS-3839 Target: 5'-ATAAGTAATTAAAATATACTTAAAAAT-3' (SEQ ID NO: 2014)

5'-AGUAAUUAAAAUAUACUUAAAAAtt-3' (SEQ ID NO: 1312)
3'-AUUCAUUAAUUUUAUAUGAAUUUUUAA-5' (SEQ ID NO: 609)

KRAS-3840 Target: 5'-TAAGTAATTAAAATATACTTAAAAATT-3' (SEQ ID NO: 2015)

5'-GUAAUUAAAAUAUACUUAAAAAUta-3' (SEQ ID NO: 1313)
3'-UUCAUUAAUUUUAUAUGAAUUUUUAAU-5' (SEQ ID NO: 610)

KRAS-3841 Target: 5'-AAGTAATTAAAATATACTTAAAAATTA-3' (SEQ ID NO: 2016)

5'-UAAUUAAAAUAUACUUAAAAAUUaa-3' (SEQ ID NO: 1314)
3'-UCAUUAAUUUUAUAUGAAUUUUUAAUU-5' (SEQ ID NO: 611)

KRAS-3842 Target: 5'-AGTAATTAAAATATACTTAAAAATTAA-3' (SEQ ID NO: 2017)

5'-AAUUAAAAUAUACUUAAAAAUUAat-3' (SEQ ID NO: 1315)
3'-CAUUAAUUUUAUAUGAAUUUUUAAUUA-5' (SEQ ID NO: 612)

KRAS-3843 Target: 5'-GTAATTAAAATATACTTAAAAATTAAT-3' (SEQ ID NO: 2018)

5'-AUUAAAAUAUACUUAAAAAUUAAta-3' (SEQ ID NO: 1316)
3'-AUUAAUUUUAUAUGAAUUUUUAAUUAU-5' (SEQ ID NO: 613)

KRAS-3844 Target: 5'-TAATTAAAATATACTTAAAAATTAATA-3' (SEQ ID NO: 2019)

5'-UUAAAAUAUACUUAAAAAUUAAUag-3' (SEQ ID NO: 1317)
3'-UUAAUUUUAUAUGAAUUUUUAAUUAUC-5' (SEQ ID NO: 614)

KRAS-3845 Target: 5'-AATTAAAATATACTTAAAAATTAATAG-3' (SEQ ID NO: 2020)

5'-UAAAAUAUACUUAAAAAUUAAUAgt-3' (SEQ ID NO: 1318)
3'-UAAUUUUAUAUGAAUUUUUAAUUAUCA-5' (SEQ ID NO: 615)

KRAS-3846 Target: 5'-ATTAAAATATACTTAAAAATTAATAGT-3' (SEQ ID NO: 2021)

5'-AAAUAUACUUAAAAAUUAAUAGUtt-3' (SEQ ID NO: 1319)
3'-AUUUUAUAUGAAUUUUUAAUUAUCAAA-5' (SEQ ID NO: 616)

KRAS-3848 Target: 5'-TAAAATATACTTAAAAATTAATAGTTT-3' (SEQ ID NO: 2022)

5'-AAUAUACUUAAAAAUUAAUAGUUtt-3' (SEQ ID NO: 1320)
3'-UUUUAUAUGAAUUUUUAAUUAUCAAAA-5' (SEQ ID NO: 617)

KRAS-3849 Target: 5'-AAAATATACTTAAAAATTAATAGTTTT-3' (SEQ ID NO: 2023)

5'-AUAUACUUAAAAAUUAAUAGUUUta-3' (SEQ ID NO: 1321)
3'-UUUAUAUGAAUUUUUAAUUAUCAAAAU-5' (SEQ ID NO: 618)

KRAS-3850 Target: 5'-AAATATACTTAAAAATTAATAGTTTTA-3' (SEQ ID NO: 2024)

5'-UAUACUUAAAAAUUAAUAGUUUUat-3' (SEQ ID NO: 1322)
3'-UUAUAUGAAUUUUUAAUUAUCAAAAUA-5' (SEQ ID NO: 619)

KRAS-3851 Target: 5'-AATATACTTAAAAATTAATAGTTTTAT-3' (SEQ ID NO: 2025)

5'-CUUAAAAAUUAAUAGUUUUAUCUgg-3' (SEQ ID NO: 1323)
3'-AUGAAUUUUUAAUUAUCAAAAUAGACC-5' (SEQ ID NO: 620)

KRAS-3855 Target: 5'-TACTTAAAAATTAATAGTTTTATCTGG-3' (SEQ ID NO: 2026)

5'-AAAAUUAAUAGUUUUAUCUGGGUac-3' (SEQ ID NO: 1324)
3'-AUUUUUAAUUAUCAAAAUAGACCCAUG-5' (SEQ ID NO: 621)

KRAS-3859 Target: 5'-TAAAAATTAATAGTTTTATCTGGGTAC-3' (SEQ ID NO: 2027)

5'-AAAUUAAUAGUUUUAUCUGGGUAca-3' (SEQ ID NO: 1325)
3'-UUUUUAAUUAUCAAAAUAGACCCAUGU-5' (SEQ ID NO: 622)

KRAS-3860 Target: 5'-AAAAATTAATAGTTTTATCTGGGTACA-3' (SEQ ID NO: 2028)

5'-AAUUAAUAGUUUUAUCUGGGUACaa-3' (SEQ ID NO: 1326)
3'-UUUUAAUUAUCAAAAUAGACCCAUGUU-5' (SEQ ID NO: 623)

KRAS-3861 Target: 5'-AAAATTAATAGTTTTATCTGGGTACAA-3' (SEQ ID NO: 2029)

5'-CUGGGUACAAAUAAACAGGUGCCtg-3' (SEQ ID NO: 1327)
3'-UAGACCCAUGUUUAUUUGUCCACGGAC-5' (SEQ ID NO: 624)

KRAS-3876 Target: 5'-ATCTGGGTACAAATAAACAGGTGCCTG-3' (SEQ ID NO: 2030)

5'-CAAGGAAACUUCUAUGUAAAAAUca-3' (SEQ ID NO: 1328)
3'-CUGUUCCUUUGAAGAUACAUUUUUAGU-5' (SEQ ID NO: 625)

KRAS-3915 Target: 5'-GACAAGGAAACTTCTATGTAAAAATCA-3' (SEQ ID NO: 2031)

5'-AAGGAAACUUCUAUGUAAAAAUCac-3' (SEQ ID NO: 1329)
3'-UGUUCCUUUGAAGAUACAUUUUUAGUG-5' (SEQ ID NO: 626)

KRAS-3916 Target: 5'-ACAAGGAAACTTCTATGTAAAAATCAC-3' (SEQ ID NO: 2032)

5'-AGGAAACUUCUAUGUAAAAAUCAct-3' (SEQ ID NO: 1330)
3'-GUUCCUUUGAAGAUACAUUUUUAGUGA-5' (SEQ ID NO: 627)

KRAS-3917 Target: 5'-CAAGGAAACTTCTATGTAAAAATCACT-3' (SEQ ID NO: 2033)

5'-CUAUGUAAAAAUCACUAUGAUUUct-3' (SEQ ID NO: 1331)
3'-AAGAUACAUUUUUAGUGAUACUAAAGA-5' (SEQ ID NO: 628)

KRAS-3926 Target: 5'-TTCTATGTAAAAATCACTATGATTTCT-3' (SEQ ID NO: 2034)

5'-UAUGUAAAAAUCACUAUGAUUUCtg-3' (SEQ ID NO: 1332)
3'-AGAUACAUUUUUAGUGAUACUAAAGAC-5' (SEQ ID NO: 629)

KRAS-3927 Target: 5'-TCTATGTAAAAATCACTATGATTTCTG-3' (SEQ ID NO: 2035)

5'-AUGUAAAAAUCACUAUGAUUUCUga-3' (SEQ ID NO: 1333)
3'-GAUACAUUUUUAGUGAUACUAAAGACU-5' (SEQ ID NO: 630)

KRAS-3928 Target: 5'-CTATGTAAAAATCACTATGATTTCTGA-3' (SEQ ID NO: 2036)

5'-AAAAAUCACUAUGAUUUCUGAAUtg-3' (SEQ ID NO: 1334)
3'-CAUUUUUAGUGAUACUAAAGACUUAAC-5' (SEQ ID NO: 631)

KRAS-3932 Target: 5'-GTAAAAATCACTATGATTTCTGAATTG-3' (SEQ ID NO: 2037)

5'-AAAAUCACUAUGAUUUCUGAAUUgc-3' (SEQ ID NO: 1335)
3'-AUUUUUAGUGAUACUAAAGACUUAACG-5' (SEQ ID NO: 632)

KRAS-3933 Target: 5'-TAAAAATCACTATGATTTCTGAATTGC-3' (SEQ ID NO: 2038)

5'-AUGAUUUCUGAAUUGCUAUGUGAaa-3' (SEQ ID NO: 1336)
3'-GAUACUAAAGACUUAACGAUACACUUU-5' (SEQ ID NO: 633)

KRAS-3942 Target: 5'-CTATGATTTCTGAATTGCTATGTGAAA-3' (SEQ ID NO: 2039)

5'-UGAUUUCUGAAUUGCUAUGUGAAac-3' (SEQ ID NO: 1337)
3'-AUACUAAAGACUUAACGAUACACUUUG-5' (SEQ ID NO: 634)

KRAS-3943 Target: 5'-TATGATTTCTGAATTGCTATGTGAAAC-3' (SEQ ID NO: 2040)

5'-UGUGAAACUACAGAUCUUUGGAAca-3' (SEQ ID NO: 1338)
3'-AUACACUUUGAUGUCUAGAAACCUUGU-5' (SEQ ID NO: 635)

KRAS-3960 Target: 5'-TATGTGAAACTACAGATCTTTGGAACA-3' (SEQ ID NO: 2041)

5'-GUGAAACUACAGAUCUUUGGAACac-3' (SEQ ID NO: 1339)
3'-UACACUUUGAUGUCUAGAAACCUUGUG-5' (SEQ ID NO: 636)

KRAS-3961 Target: 5'-ATGTGAAACTACAGATCTTTGGAACAC-3' (SEQ ID NO: 2042)

5'-GGUGUUAAGACUUACACAGUACCtc-3' (SEQ ID NO: 1340)
3'-UCCCACAAUUCUGAAUGUGUCAUGGAG-5' (SEQ ID NO: 637)

KRAS-3997 Target: 5'-AGGGTGTTAAGACTTACACAGTACCTC-3' (SEQ ID NO: 2043)

5'-UAGGCCUCUUGAAUUUUUGAUGUag-3' (SEQ ID NO: 1341)
3'-AAAUCCGGAGAACUUAAAAACUACAUC-5' (SEQ ID NO: 638)

KRAS-4084 Target: 5'-TTTAGGCCTCTTGAATTTTTGATGTAG-3' (SEQ ID NO: 2044)

5'-UUGAAUUUUUGAUGUAGAUGGGCat-3' (SEQ ID NO: 1342)
3'-AGAACUUAAAAACUACAUCUACCCGUA-5' (SEQ ID NO: 639)

KRAS-4092 Target: 5'-TCTTGAATTTTTGATGTAGATGGGCAT-3' (SEQ ID NO: 2045)

5'-UGAAUUUUUGAUGUAGAUGGGCAtt-3' (SEQ ID NO: 1343)
3'-GAACUUAAAAACUACAUCUACCCGUAA-5' (SEQ ID NO: 640)

KRAS-4093 Target: 5'-CTTGAATTTTTGATGTAGATGGGCATT-3' (SEQ ID NO: 2046)

5'-GAUGGGCAUUUUUUUAAGGUAGUgg-3' (SEQ ID NO: 1344)
3'-AUCUACCCGUAAAAAAAUUCCAUCACC-5' (SEQ ID NO: 641)

KRAS-4108 Target: 5'-TAGATGGGCATTTTTTTAAGGTAGTGG-3' (SEQ ID NO: 2047)

5'-CAUUUUUUUAAGGUAGUGGUUAAtt-3' (SEQ ID NO: 1345)
3'-CCGUAAAAAAAUUCCAUCACCAAUUAA-5' (SEQ ID NO: 642)

KRAS-4114 Target: 5'-GGCATTTTTTTAAGGTAGTGGTTAATT-3' (SEQ ID NO: 2048)

5'-GUAGUGGUUAAUUACCUUUAUGUga-3' (SEQ ID NO: 1346)
3'-UCCAUCACCAAUUAAUGGAAAUACACU-5' (SEQ ID NO: 643)

KRAS-4126 Target: 5'-AGGTAGTGGTTAATTACCTTTATGTGA-3' (SEQ ID NO: 2049)

5'-AGUGGUUAAUUACCUUUAUGUGAac-3' (SEQ ID NO: 1347)
3'-CAUCACCAAUUAAUGGAAAUACACUUG-5' (SEQ ID NO: 644)

KRAS-4128 Target: 5'-GTAGTGGTTAATTACCTTTATGTGAAC-3' (SEQ ID NO: 2050)

5'-GUGGUUAAUUACCUUUAUGUGAAct-3' (SEQ ID NO: 1348)
3'-AUCACCAAUUAAUGGAAAUACACUUGA-5' (SEQ ID NO: 645)

KRAS-4129 Target: 5'-TAGTGGTTAATTACCTTTATGTGAACT-3' (SEQ ID NO: 2051)

5'-UGGUUAAUUACCUUUAUGUGAACtt-3' (SEQ ID NO: 1349)
3'-UCACCAAUUAAUGGAAAUACACUUGAA-5' (SEQ ID NO: 646)

KRAS-4130 Target: 5'-AGTGGTTAATTACCTTTATGTGAACTT-3' (SEQ ID NO: 2052)

5'-GGUUAAUUACCUUUAUGUGAACUtt-3' (SEQ ID NO: 1350)

3'-CACCAAUUAAUGGAAAUACACUUGAAA-5' (SEQ ID NO: 647)

KRAS-4131 Target: 5'-GTGGTTAATTACCTTTATGTGAACTTT-3' (SEQ ID NO: 2053)

5'-CUUUAUGUGAACUUUGAAUGGUUta-3' (SEQ ID NO: 1351)
3'-UGGAAAUACACUUGAAACUUACCAAAU-5' (SEQ ID NO: 648)

KRAS-4141 Target: 5'-ACCTTTATGTGAACTTTGAATGGTTTA-3' (SEQ ID NO: 2054)

5'-UGUGAACUUUGAAUGGUUUAACAaa-3' (SEQ ID NO: 1352)
3'-AUACACUUGAAACUUACCAAAUUGUUU-5' (SEQ ID NO: 649)

KRAS-4146 Target: 5'-TATGTGAACTTTGAATGGTTTAACAAA-3' (SEQ ID NO: 2055)

5'-CUUUGAAUGGUUUAACAAAAGAUtt-3' (SEQ ID NO: 1353)
3'-UUGAAACUUACCAAAUUGUUUUCUAAA-5' (SEQ ID NO: 650)

KRAS-4152 Target: 5'-AACTTTGAATGGTTTAACAAAAGATTT-3' (SEQ ID NO: 2056)

5'-GAAUGGUUUAACAAAAGAUUUGUtt-3' (SEQ ID NO: 1354)
3'-AACUUACCAAAUUGUUUUCUAAACAAA-5' (SEQ ID NO: 651)

KRAS-4156 Target: 5'-TTGAATGGTTTAACAAAAGATTTGTTT-3' (SEQ ID NO: 2057)

5'-AAUGGUUUAACAAAAGAUUUGUUtt-3' (SEQ ID NO: 1355)
3'-ACUUACCAAAUUGUUUUCUAAACAAAA-5' (SEQ ID NO: 652)

KRAS-4157 Target: 5'-TGAATGGTTTAACAAAAGATTTGTTTT-3' (SEQ ID NO: 2058)

5'-AUGGUUUAACAAAAGAUUUGUUUtt-3' (SEQ ID NO: 1356)
3'-CUUACCAAAUUGUUUUCUAAACAAAAA-5' (SEQ ID NO: 653)

KRAS-4158 Target: 5'-GAATGGTTTAACAAAAGATTTGTTTTT-3' (SEQ ID NO: 2059)

5'-UGGUUUAACAAAAGAUUUGUUUUtg-3' (SEQ ID NO: 1357)
3'-UUACCAAAUUGUUUUCUAAACAAAAAC-5' (SEQ ID NO: 654)

KRAS-4159 Target: 5'-AATGGTTTAACAAAAGATTTGTTTTTG-3' (SEQ ID NO: 2060)

5'-GGUUUAACAAAAGAUUUGUUUUUgt-3' (SEQ ID NO: 1358)
3'-UACCAAAUUGUUUUCUAAACAAAAACA-5' (SEQ ID NO: 655)

KRAS-4160 Target: 5'-ATGGTTTAACAAAAGATTTGTTTTTGT-3' (SEQ ID NO: 2061)

5'-UUUAACAAAAGAUUUGUUUUUGUag-3' (SEQ ID NO: 1359)
3'-CCAAAUUGUUUUCUAAACAAAAACAUC-5' (SEQ ID NO: 656)

KRAS-4162 Target: 5'-GGTTTAACAAAAGATTTGTTTTTGTAG-3' (SEQ ID NO: 2062)

5'-UUAACAAAAGAUUUGUUUUUGUAga-3' (SEQ ID NO: 1360)
3'-CAAAUUGUUUUCUAAACAAAAACAUCU-5' (SEQ ID NO: 657)

KRAS-4163 Target: 5'-GTTTAACAAAAGATTTGTTTTTGTAGA-3' (SEQ ID NO: 2063)

5'-CAAAAGAUUUGUUUUUGUAGAGAtt-3' (SEQ ID NO: 1361)
3'-UUGUUUUCUAAACAAAAACAUCUCUAA-5' (SEQ ID NO: 658)

KRAS-4167 Target: 5'-AACAAAAGATTTGTTTTTGTAGAGATT-3' (SEQ ID NO: 2064)

5'-AAAAGAUUUGUUUUUGUAGAGAUtt-3' (SEQ ID NO: 1362)
3'-UGUUUUCUAAACAAAAACAUCUCUAAA-5' (SEQ ID NO: 659)

KRAS-4168 Target: 5'-ACAAAAGATTTGTTTTTGTAGAGATTT-3' (SEQ ID NO: 2065)

5'-AAAGAUUUGUUUUUGUAGAGAUUtt-3' (SEQ ID NO: 1363)
3'-GUUUUCUAAACAAAAACAUCUCUAAAA-5' (SEQ ID NO: 660)

KRAS-4169 Target: 5'-CAAAAGATTTGTTTTTGTAGAGATTTT-3' (SEQ ID NO: 2066)

5'-AGAUUUGUUUUUGUAGAGAUUUUaa-3' (SEQ ID NO: 1364)
3'-UUUCUAAACAAAAACAUCUCUAAAAUU-5' (SEQ ID NO: 661)

KRAS-4171 Target: 5'-AAAGATTTGTTTTTGTAGAGATTTTAA-3' (SEQ ID NO: 2067)

5'-GAUUUGUUUUUGUAGAGAUUUUAaa-3' (SEQ ID NO: 1365)
3'-UUCUAAACAAAAACAUCUCUAAAAUUU-5' (SEQ ID NO: 662)

KRAS-4172 Target: 5'-AAGATTTGTTTTTGTAGAGATTTTAAA-3' (SEQ ID NO: 2068)

5'-AUUUGUUUUUGUAGAGAUUUUAAag-3' (SEQ ID NO: 1366)
3'-UCUAAACAAAAACAUCUCUAAAAUUUC-5' (SEQ ID NO: 663)

KRAS-4173 Target: 5'-AGATTTGTTTTTGTAGAGATTTTAAAG-3' (SEQ ID NO: 2069)

5'-UUUGUUUUUGUAGAGAUUUUAAAgg-3' (SEQ ID NO: 1367)
3'-CUAAACAAAAACAUCUCUAAAAUUUCC-5' (SEQ ID NO: 664)

KRAS-4174 Target: 5'-GATTTGTTTTTGTAGAGATTTTAAAGG-3' (SEQ ID NO: 2070)

5'-UUUGUAGAGAUUUUAAAGGGGGAga-3' (SEQ ID NO: 1368)
3'-AAAAACAUCUCUAAAAUUUCCCCCUCU-5' (SEQ ID NO: 665)

KRAS-4180 Target: 5'-TTTTTGTAGAGATTTTAAAGGGGGAGA-3' (SEQ ID NO: 2071)

5'-GGGGGAGAAUUCUAGAAAUAAAUgt-3' (SEQ ID NO: 1369)
3'-UUCCCCCUCUUAAGAUCUUUAUUUACA-5' (SEQ ID NO: 666)

KRAS-4197 Target: 5'-AAGGGGGAGAATTCTAGAAATAAATGT-3' (SEQ ID NO: 2072)

5'-GGGAGAAUUCUAGAAAUAAAUGUta-3' (SEQ ID NO: 1370)
3'-CCCCCUCUUAAGAUCUUUAUUUACAAU-5' (SEQ ID NO: 667)

KRAS-4199 Target: 5'-GGGGGAGAATTCTAGAAATAAATGTTA-3' (SEQ ID NO: 2073)

5'-GGAGAAUUCUAGAAAUAAAUGUUac-3' (SEQ ID NO: 1371)
3'-CCCCUCUUAAGAUCUUUAUUUACAAUG-5' (SEQ ID NO: 668)

KRAS-4200 Target: 5'-GGGGAGAATTCTAGAAATAAATGTTAC-3' (SEQ ID NO: 2074)

5'-GAGAAUUCUAGAAAUAAAUGUUAcc-3' (SEQ ID NO: 1372)
3'-CCCUCUUAAGAUCUUUAUUUACAAUGG-5' (SEQ ID NO: 669)

KRAS-4201 Target: 5'-GGGAGAATTCTAGAAATAAATGTTACC-3' (SEQ ID NO: 2075)

5'-AGAAUUCUAGAAAUAAAUGUUACct-3' (SEQ ID NO: 1373)
3'-CCUCUUAAGAUCUUUAUUUACAAUGGA-5' (SEQ ID NO: 670)

KRAS-4202 Target: 5'-GGAGAATTCTAGAAATAAATGTTACCT-3' (SEQ ID NO: 2076)

5'-GAAUUCUAGAAAUAAAUGUUACCta-3' (SEQ ID NO: 1374)
3'-CUCUUAAGAUCUUUAUUUACAAUGGAU-5' (SEQ ID NO: 671)

KRAS-4203 Target: 5'-GAGAATTCTAGAAATAAATGTTACCTA-3' (SEQ ID NO: 2077)

5'-CUAGAAAUAAAUGUUACCUAAUUat-3' (SEQ ID NO: 1375)
3'-AAGAUCUUUAUUUACAAUGGAUUAAUA-5' (SEQ ID NO: 672)

KRAS-4208 Target: 5'-TTCTAGAAATAAATGTTACCTAATTAT-3' (SEQ ID NO: 2078)

5'-UAGAAAUAAAUGUUACCUAAUUAtt-3' (SEQ ID NO: 1376)
3'-AGAUCUUUAUUUACAAUGGAUUAAUAA-5' (SEQ ID NO: 673)

KRAS-4209 Target: 5'-TCTAGAAATAAATGTTACCTAATTATT-3' (SEQ ID NO: 2079)

5'-AGAAAUAAAUGUUACCUAAUUAUta-3' (SEQ ID NO: 1377)
3'-GAUCUUUAUUUACAAUGGAUUAAUAAU-5' (SEQ ID NO: 674)

KRAS-4210 Target: 5'-CTAGAAATAAATGTTACCTAATTATTA-3' (SEQ ID NO: 2080)

5'-GAAAUAAAUGUUACCUAAUUAUUac-3' (SEQ ID NO: 1378)
3'-AUCUUUAUUUACAAUGGAUUAAUAAUG-5' (SEQ ID NO: 675)

KRAS-4211 Target: 5'-TAGAAATAAATGTTACCTAATTATTAC-3' (SEQ ID NO: 2081)

5'-AAAUAAAUGUUACCUAAUUAUUAca-3' (SEQ ID NO: 1379)
3'-UCUUUAUUUACAAUGGAUUAAUAAUGU-5' (SEQ ID NO: 676)

KRAS-4212 Target: 5'-AGAAATAAATGTTACCTAATTATTACA-3' (SEQ ID NO: 2082)

5'-AUAAAUGUUACCUAAUUAUUACAgc-3' (SEQ ID NO: 1380)
3'-UUUAUUUACAAUGGAUUAAUAAUGUCG-5' (SEQ ID NO: 677)

KRAS-4214 Target: 5'-AAATAAATGTTACCTAATTATTACAGC-3' (SEQ ID NO: 2083)

5'-CUAAUUAUUACAGCCUUAAAGACaa-3' (SEQ ID NO: 1381)
3'-UGGAUUAAUAAUGUCGGAAUUUCUGUU-5' (SEQ ID NO: 678)

KRAS-4225 Target: 5'-ACCTAATTATTACAGCCTTAAAGACAA-3' (SEQ ID NO: 2084)

5'-UAAUUAUUACAGCCUUAAAGACAaa-3' (SEQ ID NO: 1382)
3'-GGAUUAAUAAUGUCGGAAUUUCUGUUU-5' (SEQ ID NO: 679)

KRAS-4226 Target: 5'-CCTAATTATTACAGCCTTAAAGACAAA-3' (SEQ ID NO: 2085)

5'-UUAAAGACAAAAAUCCUUGUUGAag-3' (SEQ ID NO: 1383)
3'-GGAAUUUCUGUUUUUAGGAACAACUUC-5' (SEQ ID NO: 680)

KRAS-4240 Target: 5'-CCTTAAAGACAAAAATCCTTGTTGAAG-3' (SEQ ID NO: 2086)

5'-AAGACAAAAAUCCUUGUUGAAGUtt-3' (SEQ ID NO: 1384)
3'-AUUUCUGUUUUUAGGAACAACUUCAAA-5' (SEQ ID NO: 681)

KRAS-4243 Target: 5'-TAAAGACAAAAATCCTTGTTGAAGTTT-3' (SEQ ID NO: 2087)

5'-CUUGUUGAAGUUUUUUUAAAAAAag-3' (SEQ ID NO: 1385)
3'-AGGAACAACUUCAAAAAAAUUUUUUUC-5' (SEQ ID NO: 682)

KRAS-4255 Target: 5'-TCCTTGTTGAAGTTTTTTTAAAAAAAG-3' (SEQ ID NO: 2088)

5'-UUGUUGAAGUUUUUUUAAAAAAAgc-3' (SEQ ID NO: 1386)
3'-GGAACAACUUCAAAAAAAUUUUUUUCG-5' (SEQ ID NO: 683)

KRAS-4256 Target: 5'-CCTTGTTGAAGTTTTTTTAAAAAAAGC-3' (SEQ ID NO: 2089)

5'-GUUGAAGUUUUUUUAAAAAAAGCta-3' (SEQ ID NO: 1387)
3'-AACAACUUCAAAAAAAUUUUUUUCGAU-5' (SEQ ID NO: 684)

KRAS-4258 Target: 5'-TTGTTGAAGTTTTTTTAAAAAAAGCTA-3' (SEQ ID NO: 2090)

5'-UUGAAGUUUUUUUAAAAAAAGCUaa-3' (SEQ ID NO: 1388)
3'-ACAACUUCAAAAAAAUUUUUUUCGAUU-5' (SEQ ID NO: 685)

KRAS-4259 Target: 5'-TGTTGAAGTTTTTTTAAAAAAAGCTAA-3' (SEQ ID NO: 2091)

5'-AGUUUUUUUAAAAAAAGCUAAAUta-3' (SEQ ID NO: 1389)
3'-CUUCAAAAAAAUUUUUUUCGAUUUAAU-5' (SEQ ID NO: 686)

KRAS-4263 Target: 5'-GAAGTTTTTTTAAAAAAAGCTAAATTA-3' (SEQ ID NO: 2092)

5'-GUUUUUUUAAAAAAAGCUAAAUUac-3' (SEQ ID NO: 1390)
3'-UUCAAAAAAAUUUUUUUCGAUUUAAUG-5' (SEQ ID NO: 687)

KRAS-4264 Target: 5'-AAGTTTTTTTAAAAAAAGCTAAATTAC-3' (SEQ ID NO: 2093)

5'-UUUUUUUAAAAAAAGCUAAAUUAca-3' (SEQ ID NO: 1391)
3'-UCAAAAAAAUUUUUUUCGAUUUAAUGU-5' (SEQ ID NO: 688)

KRAS-4265 Target: 5'-AGTTTTTTTAAAAAAAGCTAAATTACA-3' (SEQ ID NO: 2094)

5'-UUUUUUAAAAAAAGCUAAAUUACat-3' (SEQ ID NO: 1392)
3'-CAAAAAAAUUUUUUUCGAUUUAAUGUA-5' (SEQ ID NO: 689)

KRAS-4266 Target: 5'-GTTTTTTTAAAAAAAGCTAAATTACAT-3' (SEQ ID NO: 2095)

5'-UUUUUAAAAAAAGCUAAAUUACAta-3' (SEQ ID NO: 1393)
3'-AAAAAAAUUUUUUUCGAUUUAAUGUAU-5' (SEQ ID NO: 690)

KRAS-4267 Target: 5'-TTTTTTTAAAAAAAGCTAAATTACATA-3' (SEQ ID NO: 2096)

5'-UAAAAAAAGCUAAAUUACAUAGAct-3' (SEQ ID NO: 1394)
3'-AAAUUUUUUUCGAUUUAAUGUAUCUGA-5' (SEQ ID NO: 691)

KRAS-4271 Target: 5'-TTTAAAAAAAGCTAAATTACATAGACT-3' (SEQ ID NO: 2097)

5'-AAAAAAGCUAAAUUACAUAGACUta-3' (SEQ ID NO: 1395)
3'-AUUUUUUUCGAUUUAAUGUAUCUGAAU-5' (SEQ ID NO: 692)

KRAS-4273 Target: 5'-TAAAAAAAGCTAAATTACATAGACTTA-3' (SEQ ID NO: 2098)

5'-UUAGGCAUUAACAUGUUUGUGGAag-3' (SEQ ID NO: 1396)
3'-UGAAUCCGUAAUUGUACAAACACCUUC-5' (SEQ ID NO: 693)

KRAS-4295 Target: 5'-ACTTAGGCATTAACATGTTTGTGGAAG-3' (SEQ ID NO: 2099)

5'-UAGGCAUUAACAUGUUUGUGGAAga-3' (SEQ ID NO: 1397)
3'-GAAUCCGUAAUUGUACAAACACCUUCU-5' (SEQ ID NO: 694)

KRAS-4296 Target: 5'-CTTAGGCATTAACATGTTTGTGGAAGA-3' (SEQ ID NO: 2100)

5'-CAGACGUAUAUUGUAUCAUUUGAgt-3' (SEQ ID NO: 1398)
3'-UCGUCUGCAUAUAACAUAGUAAACUCA-5' (SEQ ID NO: 695)

KRAS-4327 Target: 5'-AGCAGACGTATATTGTATCATTTGAGT-3' (SEQ ID NO: 2101)

5'-CGUAUAUUGUAUCAUUUGAGUGAat-3' (SEQ ID NO: 1399)
3'-CUGCAUAUAACAUAGUAAACUCACUUA-5' (SEQ ID NO: 696)

KRAS-4331 Target: 5'-GACGTATATTGTATCATTTGAGTGAAT-3' (SEQ ID NO: 2102)

5'-UAUAUUGUAUCAUUUGAGUGAAUgt-3' (SEQ ID NO: 1400)
3'-GCAUAUAACAUAGUAAACUCACUUACA-5' (SEQ ID NO: 697)

KRAS-4333 Target: 5'-CGTATATTGTATCATTTGAGTGAATGT-3' (SEQ ID NO: 2103)

5'-AUUGUAUCAUUUGAGUGAAUGUUcc-3' (SEQ ID NO: 1401)
3'-UAUAACAUAGUAAACUCACUUACAAGG-5' (SEQ ID NO: 698)

KRAS-4336 Target: 5'-ATATTGTATCATTTGAGTGAATGTTCC-3' (SEQ ID NO: 2104)

5'-UUGUAUCAUUUGAGUGAAUGUUCcc-3' (SEQ ID NO: 1402)
3'-AUAACAUAGUAAACUCACUUACAAGGG-5' (SEQ ID NO: 699)

KRAS-4337 Target: 5'-TATTGTATCATTTGAGTGAATGTTCCC-3' (SEQ ID NO: 2105)

5'-UGUAUCAUUUGAGUGAAUGUUCCca-3' (SEQ ID NO: 1403)

3'-UAACAUAGUAAACUCACUUACAAGGGU-5' (SEQ ID NO: 700)

KRAS-4338 Target: 5'-ATTGTATCATTTGAGTGAATGTTCCCA-3' (SEQ ID NO: 2106)

5'-AGGAAUUUAGAACCUAACUUUUAta-3' (SEQ ID NO: 1404)
3'-UAUCCUUAAAUCUUGGAUUGAAAAUAU-5' (SEQ ID NO: 701)

KRAS-4404 Target: 5'-ATAGGAATTTAGAACCTAACTTTTATA-3' (SEQ ID NO: 2107)

5'-GGAAUUUAGAACCUAACUUUUAUag-3' (SEQ ID NO: 1405)
3'-AUCCUUAAAUCUUGGAUUGAAAAUAUC-5' (SEQ ID NO: 702)

KRAS-4405 Target: 5'-TAGGAATTTAGAACCTAACTTTTATAG-3' (SEQ ID NO: 2108)

5'-UUUAGAACCUAACUUUUAUAGGUta-3' (SEQ ID NO: 1406)
3'-UUAAAUCUUGGAUUGAAAAUAUCCAAU-5' (SEQ ID NO: 703)

KRAS-4409 Target: 5'-AATTTAGAACCTAACTTTTATAGGTTA-3' (SEQ ID NO: 2109)

5'-UUAGAACCUAACUUUUAUAGGUUat-3' (SEQ ID NO: 1407)
3'-UAAAUCUUGGAUUGAAAAUAUCCAAUA-5' (SEQ ID NO: 704)

KRAS-4410 Target: 5'-ATTTAGAACCTAACTTTTATAGGTTAT-3' (SEQ ID NO: 2110)

5'-UAGAACCUAACUUUUAUAGGUUAtc-3' (SEQ ID NO: 1408)
3'-AAAUCUUGGAUUGAAAAUAUCCAAUAG-5' (SEQ ID NO: 705)

KRAS-4411 Target: 5'-TTTAGAACCTAACTTTTATAGGTTATC-3' (SEQ ID NO: 2111)

5'-AGAACCUAACUUUUAUAGGUUAUca-3' (SEQ ID NO: 1409)
3'-AAUCUUGGAUUGAAAAUAUCCAAUAGU-5' (SEQ ID NO: 706)

KRAS-4412 Target: 5'-TTAGAACCTAACTTTTATAGGTTATCA-3' (SEQ ID NO: 2112)

5'-UUAUAGGUUAUCAAAACUGUUGUca-3' (SEQ ID NO: 1410)
3'-AAAAUAUCCAAUAGUUUUGACAACAGU-5' (SEQ ID NO: 707)

KRAS-4424 Target: 5'-TTTTATAGGTTATCAAAACTGTTGTCA-3' (SEQ ID NO: 2113)

5'-AUAGGUUAUCAAAACUGUUGUCAcc-3' (SEQ ID NO: 1411)
3'-AAUAUCCAAUAGUUUUGACAACAGUGG-5' (SEQ ID NO: 708)

KRAS-4426 Target: 5'-TTATAGGTTATCAAAACTGTTGTCACC-3' (SEQ ID NO: 2114)

5'-UUUUGUCCUAAUAUAUACAUAGAaa-3' (SEQ ID NO: 1412)
3'-UUAAAACAGGAUUAUAUAUGUAUCUUU-5' (SEQ ID NO: 709)

KRAS-4460 Target: 5'-AATTTTGTCCTAATATATACATAGAAA-3' (SEQ ID NO: 2115)

5'-UUUGUCCUAAUAUAUACAUAGAAac-3' (SEQ ID NO: 1413)
3'-UAAAACAGGAUUAUAUAUGUAUCUUUG-5' (SEQ ID NO: 710)

KRAS-4461 Target: 5'-ATTTTGTCCTAATATATACATAGAAAC-3' (SEQ ID NO: 2116)

5'-UUGUCCUAAUAUAUACAUAGAAAct-3' (SEQ ID NO: 1414)
3'-AAAACAGGAUUAUAUAUGUAUCUUUGA-5' (SEQ ID NO: 711)

KRAS-4462 Target: 5'-TTTTGTCCTAATATATACATAGAAACT-3' (SEQ ID NO: 2117)

5'-UAAUAUAUACAUAGAAACUUUGUgg-3' (SEQ ID NO: 1415)
3'-GGAUUAUAUAUGUAUCUUUGAAACACC-5' (SEQ ID NO: 712)

KRAS-4468 Target: 5'-CCTAATATATACATAGAAACTTTGTGG-3' (SEQ ID NO: 2118)

5'-UAUACAUAGAAACUUUGUGGGGCat-3' (SEQ ID NO: 1416)
3'-AUAUAUGUAUCUUUGAAACACCCCGUA-5' (SEQ ID NO: 713)

KRAS-4473 Target: 5'-TATATACATAGAAACTTTGTGGGGCAT-3' (SEQ ID NO: 2119)

5'-CAAGUUCAUCUCAUUUGUAUUCCat-3' (SEQ ID NO: 1417)
3'-GUGUUCAAGUAGAGUAAACAUAAGGUA-5' (SEQ ID NO: 714)

KRAS-4516 Target: 5'-CACAAGTTCATCTCATTTGTATTCCAT-3' (SEQ ID NO: 2120)

5'-CAUUUGUAUUCCAUUGAUUUUUUtt-3' (SEQ ID NO: 1418)
3'-GAGUAAACAUAAGGUAACUAAAAAAAA-5' (SEQ ID NO: 715)

KRAS-4527 Target: 5'-CTCATTTGTATTCCATTGATTTTTTT-3' (SEQ ID NO: 2121)

5'-AUUUGUAUUCCAUUGAUUUUUUUtt-3' (SEQ ID NO: 1419)
3'-AGUAAACAUAAGGUAACUAAAAAAAAA-5' (SEQ ID NO: 716)

KRAS-4528 Target: 5'-TCATTTGTATTCCATTGATTTTTTTT-3' (SEQ ID NO: 2122)

5'-UUUGUAUUCCAUUGAUUUUUUUUtt-3' (SEQ ID NO: 1420)
3'-GUAAACAUAAGGUAACUAAAAAAAAA-5' (SEQ ID NO: 717)

KRAS-4529 Target: 5'-CATTTGTATTCCATTGATTTTTTTTT-3' (SEQ ID NO: 2123)

5'-UUGUAUUCCAUUGAUUUUUUUUUtc-3' (SEQ ID NO: 1421)
3'-UAAACAUAAGGUAACUAAAAAAAAAAG-5' (SEQ ID NO: 718)

KRAS-4530 Target: 5'-ATTTGTATTCCATTGATTTTTTTTTC-3' (SEQ ID NO: 2124)

5'-UGUAUUCCAUUGAUUUUUUUUUUct-3' (SEQ ID NO: 1422)
3'-AAACAUAAGGUAACUAAAAAAAAAAGA-5' (SEQ ID NO: 719)

KRAS-4531 Target: 5'-TTTGTATTCCATTGATTTTTTTTTT-3' (SEQ ID NO: 2125)

5'-GUAUUCCAUUGAUUUUUUUUUUCtt-3' (SEQ ID NO: 1423)
3'-AACAUAAGGUAACUAAAAAAAAAAGAA-5' (SEQ ID NO: 720)

KRAS-4532 Target: 5'-TTGTATTCCATTGATTTTTTTTTTCTT-3' (SEQ ID NO: 2126)

5'-UAUUCCAUUGAUUUUUUUUUUCUtc-3' (SEQ ID NO: 1424)
3'-ACAUAAGGUAACUAAAAAAAAAAGAAG-5' (SEQ ID NO: 721)

KRAS-4533 Target: 5'-TGTATTCCATTGATTTTTTTTTTCTTC-3' (SEQ ID NO: 2127)

5'-UUGAUUUUUUUUUUCUUCUAAACat-3' (SEQ ID NO: 1425)
3'-GUAACUAAAAAAAAAAGAAGAUUUGUA-5' (SEQ ID NO: 722)

KRAS-4540 Target: 5'-CATTGATTTTTTTTTTCTTCTAAACAT-3' (SEQ ID NO: 2128)

5'-UGAUUUUUUUUUUCUUCUAAACAtt-3' (SEQ ID NO: 1426)
3'-UAACUAAAAAAAAAAGAAGAUUUGUAA-5' (SEQ ID NO: 723)

KRAS-4541 Target: 5'-ATTGATTTTTTTTTTCTTCTAAACATT-3' (SEQ ID NO: 2129)

5'-UUUUUUUUUCUUCUAAACAUUUUtt-3' (SEQ ID NO: 1427)
3'-UAAAAAAAAAAGAAGAUUUGUAAAAAA-5' (SEQ ID NO: 724)

KRAS-4545 Target: 5'-ATTTTTTTTTTCTTCTAAACATTTTTT-3' (SEQ ID NO: 2130)

5'-UUUUUUUUCUUCUAAACAUUUUUtc-3' (SEQ ID NO: 1428)
3'-AAAAAAAAAAGAAGAUUUGUAAAAAAG-5' (SEQ ID NO: 725)

KRAS-4546 Target: 5'-TTTTTTTTTTCTTCTAAACATTTTTTC-3' (SEQ ID NO: 2131)

5'-UUUUUUUCUUCUAAACAUUUUUUct-3' (SEQ ID NO: 1429)
3'-AAAAAAAAAGAAGAUUUGUAAAAAAGA-5' (SEQ ID NO: 726)

KRAS-4547 Target: 5'-TTTTTTTTTCTTCTAAACATTTTTTCT-3' (SEQ ID NO: 2132)

5'-UUUUUUCUUCUAAACAUUUUUUCtt-3' (SEQ ID NO: 1430)
3'-AAAAAAAAGAAGAUUUGUAAAAAAGAA-5' (SEQ ID NO: 727)

KRAS-4548 Target: 5'-TTTTTTTTCTTCTAAACATTTTTTCTT-3' (SEQ ID NO: 2133)

5'-UUUUUCUUCUAAACAUUUUUUCUtc-3' (SEQ ID NO: 1431)
3'-AAAAAAAGAAGAUUUGUAAAAAAGAAG-5' (SEQ ID NO: 728)

KRAS-4549 Target: 5'-TTTTTTTCTTCTAAACATTTTTTCTTC-3' (SEQ ID NO: 2134)

5'-CAUUUUUUCUUCAAACAGUAUAUaa-3' (SEQ ID NO: 1432)
3'-UUGUAAAAAAGAAGUUUGUCAUAUAUU-5' (SEQ ID NO: 729)

KRAS-4562 Target: 5'-AACATTTTTTCTTCAAACAGTATATAA-3' (SEQ ID NO: 2135)

5'-AUUUUUUCUUCAAACAGUAUAUAac-3' (SEQ ID NO: 1433)
3'-UGUAAAAAAGAAGUUUGUCAUAUAUUG-5' (SEQ ID NO: 730)

KRAS-4563 Target: 5'-ACATTTTTTCTTCAAACAGTATATAAC-3' (SEQ ID NO: 2136)

5'-UUUUUUCUUCAAACAGUAUAUAAct-3' (SEQ ID NO: 1434)
3'-GUAAAAAAGAAGUUUGUCAUAUAUUGA-5' (SEQ ID NO: 731)

KRAS-4564 Target: 5'-CATTTTTTCTTCAAACAGTATATAACT-3' (SEQ ID NO: 2137)

5'-UUUUUCUUCAAACAGUAUAUAACtt-3' (SEQ ID NO: 1435)
3'-UAAAAAAGAAGUUUGUCAUAUAUUGAA-5' (SEQ ID NO: 732)

KRAS-4565 Target: 5'-ATTTTTTCTTCAAACAGTATATAACTT-3' (SEQ ID NO: 2138)

5'-UUUUCUUCAAACAGUAUAUAACUtt-3' (SEQ ID NO: 1436)
3'-AAAAAAGAAGUUUGUCAUAUAUUGAAA-5' (SEQ ID NO: 733)

KRAS-4566 Target: 5'-TTTTTTCTTCAAACAGTATATAACTTT-3' (SEQ ID NO: 2139)

5'-CAAACAGUAUAUAACUUUUUUUAgg-3' (SEQ ID NO: 1437)
3'-AAGUUUGUCAUAUAUUGAAAAAAAUCC-5' (SEQ ID NO: 734)

KRAS-4573 Target: 5'-TTCAAACAGTATATAACTTTTTTTAGG-3' (SEQ ID NO: 2140)

5'-AGUAUAUAACUUUUUUUAGGGGAtt-3' (SEQ ID NO: 1438)
3'-UGUCAUAUAUUGAAAAAAAUCCCCUAA-5' (SEQ ID NO: 735)

KRAS-4578 Target: 5'-ACAGTATATAACTTTTTTTAGGGGATT-3' (SEQ ID NO: 2141)

5'-GUAUAUAACUUUUUUUAGGGGAUtt-3' (SEQ ID NO: 1439)
3'-GUCAUAUAUUGAAAAAAAUCCCCUAAA-5' (SEQ ID NO: 736)

KRAS-4579 Target: 5'-CAGTATATAACTTTTTTTAGGGGATTT-3' (SEQ ID NO: 2142)

5'-UAUAUAACUUUUUUUAGGGGAUUtt-3' (SEQ ID NO: 1440)
3'-UCAUAUAUUGAAAAAAAUCCCCUAAAA-5' (SEQ ID NO: 737)

KRAS-4580 Target: 5'-AGTATATAACTTTTTTTAGGGGATTTT-3' (SEQ ID NO: 2143)

5'-AUAUAACUUUUUUUAGGGGAUUUtt-3' (SEQ ID NO: 1441)
3'-CAUAUAUUGAAAAAAAUCCCCUAAAAA-5' (SEQ ID NO: 738)

KRAS-4581 Target: 5'-GTATATAACTTTTTTTAGGGGATTTTT-3' (SEQ ID NO: 2144)

5'-CUUUUUUUAGGGGAUUUUUUUUUag-3' (SEQ ID NO: 1442)
3'-UUGAAAAAAAUCCCCUAAAAAAAAAUC-5' (SEQ ID NO: 739)

KRAS-4587 Target: 5'-AACTTTTTTTAGGGGATTTTTTTTTAG-3' (SEQ ID NO: 2145)

5'-UUUUUUUAGGGGAUUUUUUUUUAga-3' (SEQ ID NO: 1443)
3'-UGAAAAAAAUCCCCUAAAAAAAAAUCU-5' (SEQ ID NO: 740)

KRAS-4588 Target: 5'-ACTTTTTTTAGGGGATTTTTTTTTAGA-3' (SEQ ID NO: 2146)

5'-GAUUUUUUUUUAGACAGCAAAAAct-3' (SEQ ID NO: 1444)
3'-CCCUAAAAAAAAAAUCUGUCGUUUUUGA-5' (SEQ ID NO: 741)

KRAS-4599 Target: 5'-GGGATTTTTTTTTAGACAGCAAAAACT-3' (SEQ ID NO: 2147)

5'-AUUUUUUUUUAGACAGCAAAAACta-3' (SEQ ID NO: 1445)
3'-CCUAAAAAAAAAAUCUGUCGUUUUUGAU-5' (SEQ ID NO: 742)

KRAS-4600 Target: 5'-GGATTTTTTTTTAGACAGCAAAAACTA-3' (SEQ ID NO: 2148)

5'-UUUUUUUUUAGACAGCAAAAACUat-3' (SEQ ID NO: 1446)
3'-CUAAAAAAAAAAUCUGUCGUUUUUGAUA-5' (SEQ ID NO: 743)

KRAS-4601 Target: 5'-GATTTTTTTTTAGACAGCAAAAACTAT-3' (SEQ ID NO: 2149)

5'-AAGAUUUCCAUUUGUCAAAAAGUaa-3' (SEQ ID NO: 1447)
3'-ACUUCUAAAGGUAAACAGUUUUUCAUU-5' (SEQ ID NO: 744)

KRAS-4629 Target: 5'-TGAAGATTTCCATTTGTCAAAAAGTAA-3' (SEQ ID NO: 2150)

5'-AGAUUUCCAUUUGUCAAAAAGUAat-3' (SEQ ID NO: 1448)
3'-CUUCUAAAGGUAAACAGUUUUUCAUUA-5' (SEQ ID NO: 745)

KRAS-4630 Target: 5'-GAAGATTTCCATTTGTCAAAAAGTAAT-3' (SEQ ID NO: 2151)

5'-GAUUUCCAUUUGUCAAAAAGUAAtg-3' (SEQ ID NO: 1449)
3'-UUCUAAAGGUAAACAGUUUUUCAUUAC-5' (SEQ ID NO: 746)

KRAS-4631 Target: 5'-AAGATTTCCATTTGTCAAAAAGTAATG-3' (SEQ ID NO: 2152)

5'-AUUUCCAUUUGUCAAAAAGUAAUga-3' (SEQ ID NO: 1450)
3'-UCUAAAGGUAAACAGUUUUUCAUUACU-5' (SEQ ID NO: 747)

KRAS-4632 Target: 5'-AGATTTCCATTTGTCAAAAAGTAATGA-3' (SEQ ID NO: 2153)

5'-CAUUUGUCAAAAAGUAAUGAUUUct-3' (SEQ ID NO: 1451)
3'-AGGUAAACAGUUUUUCAUUACUAAAGA-5' (SEQ ID NO: 748)

KRAS-4637 Target: 5'-TCCATTTGTCAAAAAGTAATGATTTCT-3' (SEQ ID NO: 2154)

5'-AUUUGUCAAAAAGUAAUGAUUUCtt-3' (SEQ ID NO: 1452)
3'-GGUAAACAGUUUUUCAUUACUAAAGAA-5' (SEQ ID NO: 749)

KRAS-4638 Target: 5'-CCATTTGTCAAAAAGTAATGATTTCTT-3' (SEQ ID NO: 2155)

5'-UUUGUCAAAAAGUAAUGAUUUCUtg-3' (SEQ ID NO: 1453)
3'-GUAAACAGUUUUUCAUUACUAAAGAAC-5' (SEQ ID NO: 750)

KRAS-4639 Target: 5'-CATTTGTCAAAAAGTAATGATTTCTTG-3' (SEQ ID NO: 2156)

5'-CAAAAAGUAAUGAUUUCUUGAUAat-3' (SEQ ID NO: 1454)
3'-CAGUUUUUCAUUACUAAAGAACUAUUA-5' (SEQ ID NO: 751)

KRAS-4644 Target: 5'-GTCAAAAAGTAATGATTTCTTGATAAT-3' (SEQ ID NO: 2157)

5'-AAAAAGUAAUGAUUUCUUGAUAAtt-3' (SEQ ID NO: 1455)
3'-AGUUUUUCAUUACUAAAGAACUAUUAA-5' (SEQ ID NO: 752)

KRAS-4645 Target: 5'-TCAAAAAGTAATGATTTCTTGATAATT-3' (SEQ ID NO: 2158)

5'-AAAAGUAAUGAUUUCUUGAUAAUtg-3' (SEQ ID NO: 1456)

3'-GUUUUUCAUUACUAAAGAACUAUUAAC-5' (SEQ ID NO: 753)

KRAS-4646 Target: 5'-CAAAAAGTAATGATTTCTTGATAATTG-3' (SEQ ID NO: 2159)

5'-AAAGUAAUGAUUUCUUGAUAAUUgt-3' (SEQ ID NO: 1457)
3'-UUUUUCAUUACUAAAGAACUAUUAACA-5' (SEQ ID NO: 754)

KRAS-4647 Target: 5'-AAAAAGTAATGATTTCTTGATAATTGT-3' (SEQ ID NO: 2160)

5'-AGUAAUGAUUUCUUGAUAAUUGUgt-3' (SEQ ID NO: 1458)
3'-UUUCAUUACUAAAGAACUAUUAACACA-5' (SEQ ID NO: 755)

KRAS-4649 Target: 5'-AAAGTAATGATTTCTTGATAATTGTGT-3' (SEQ ID NO: 2161)

5'-UAAUGAUUUCUUGAUAAUUGUGUag-3' (SEQ ID NO: 1459)
3'-UCAUUACUAAAGAACUAUUAACACAUC-5' (SEQ ID NO: 756)

KRAS-4651 Target: 5'-AGTAATGATTTCTTGATAATTGTGTAG-3' (SEQ ID NO: 2162)

5'-AAUGAUUUCUUGAUAAUUGUGUAgt-3' (SEQ ID NO: 1460)
3'-CAUUACUAAAGAACUAUUAACACAUCA-5' (SEQ ID NO: 757)

KRAS-4652 Target: 5'-GTAATGATTTCTTGATAATTGTGTAGT-3' (SEQ ID NO: 2163)

5'-UGAUUUCUUGAUAAUUGUGUAGUaa-3' (SEQ ID NO: 1461)
3'-UUACUAAAGAACUAUUAACACAUCAUU-5' (SEQ ID NO: 758)

KRAS-4654 Target: 5'-AATGATTTCTTGATAATTGTGTAGTAA-3' (SEQ ID NO: 2164)

5'-GAUUUCUUGAUAAUUGUGUAGUAat-3' (SEQ ID NO: 1462)
3'-UACUAAAGAACUAUUAACACAUCAUUA-5' (SEQ ID NO: 759)

KRAS-4655 Target: 5'-ATGATTTCTTGATAATTGTGTAGTAAT-3' (SEQ ID NO: 2165)

5'-CUUGAUAAUUGUGUAGUAAUGUUtt-3' (SEQ ID NO: 1463)
3'-AAGAACUAUUAACACAUCAUUACAAAA-5' (SEQ ID NO: 760)

KRAS-4660 Target: 5'-TTCTTGATAATTGTGTAGTAATGTTTT-3' (SEQ ID NO: 2166)

5'-UUGAUAAUUGUGUAGUAAUGUUUtt-3' (SEQ ID NO: 1464)
3'-AGAACUAUUAACACAUCAUUACAAAAA-5' (SEQ ID NO: 761)

KRAS-4661 Target: 5'-TCTTGATAATTGTGTAGTAATGTTTTT-3' (SEQ ID NO: 2167)

5'-UGAUAAUUGUGUAGUAAUGUUUUtt-3' (SEQ ID NO: 1465)
3'-GAACUAUUAACACAUCAUUACAAAAAA-5' (SEQ ID NO: 762)

KRAS-4662 Target: 5'-CTTGATAATTGTGTAGTAATGTTTTTT-3' (SEQ ID NO: 2168)

5'-AUAAUUGUGUAGUAAUGUUUUUUag-3' (SEQ ID NO: 1466)
3'-ACUAUUAACACAUCAUUACAAAAAAUC-5' (SEQ ID NO: 763)

KRAS-4664 Target: 5'-TGATAATTGTGTAGTAATGTTTTTTAG-3' (SEQ ID NO: 2169)

5'-AUUGUGUAGUAAUGUUUUUUAGAac-3' (SEQ ID NO: 1467)
3'-AUUAACACAUCAUUACAAAAAAUCUUG-5' (SEQ ID NO: 764)

KRAS-4667 Target: 5'-TAATTGTGTAGTAATGTTTTTTAGAAC-3' (SEQ ID NO: 2170)

5'-UGUGUAGUAAUGUUUUUUAGAACcc-3' (SEQ ID NO: 1468)
3'-UAACACAUCAUUACAAAAAAUCUUGGG-5' (SEQ ID NO: 765)

KRAS-4669 Target: 5'-ATTGTGTAGTAATGTTTTTTAGAACCC-3' (SEQ ID NO: 2171)

5'-GUGUAGUAAUGUUUUUUAGAACCca-3' (SEQ ID NO: 1469)
3'-AACACAUCAUUACAAAAAAUCUUGGGU-5' (SEQ ID NO: 766)

KRAS-4670 Target: 5'-TTGTGTAGTAATGTTTTTTAGAACCCA-3' (SEQ ID NO: 2172)

5'-UUAAAGCUGAAUUUAUAUUUAGUaa-3' (SEQ ID NO: 1470)
3'-GGAAUUUCGACUUAAAUAUAAAUCAUU-5' (SEQ ID NO: 767)

KRAS-4704 Target: 5'-CCTTAAAGCTGAATTTATATTTAGTAA-3' (SEQ ID NO: 2173)

5'-AAAGCUGAAUUUAUAUUUAGUAAct-3' (SEQ ID NO: 1471)
3'-AAUUUCGACUUAAAUAUAAAUCAUUGA-5' (SEQ ID NO: 768)

KRAS-4706 Target: 5'-TTAAAGCTGAATTTATATTTAGTAACT-3' (SEQ ID NO: 2174)

5'-UUUAUAUUUAGUAACUUCUGUGUta-3' (SEQ ID NO: 1472)
3'-UUAAAUAUAAAUCAUUGAAGACACAAU-5' (SEQ ID NO: 769)

KRAS-4715 Target: 5'-AATTTATATTTAGTAACTTCTGTGTTA-3' (SEQ ID NO: 2175)

5'-UUAUAUUUAGUAACUUCUGUGUUaa-3' (SEQ ID NO: 1473)
3'-UAAAUAUAAAUCAUUGAAGACACAAUU-5' (SEQ ID NO: 770)

KRAS-4716 Target: 5'-ATTTATATTTAGTAACTTCTGTGTTAA-3' (SEQ ID NO: 2176)

5'-UAUAUUUAGUAACUUCUGUGUUAat-3' (SEQ ID NO: 1474)
3'-AAAUAUAAAUCAUUGAAGACACAAUUA-5' (SEQ ID NO: 771)

KRAS-4717 Target: 5'-TTTATATTTAGTAACTTCTGTGTTAAT-3' (SEQ ID NO: 2177)

5'-UUAGUAACUUCUGUGUUAAUACUgg-3' (SEQ ID NO: 1475)
3'-UAAAUCAUUGAAGACACAAUUAUGACC-5' (SEQ ID NO: 772)

KRAS-4722 Target: 5'-ATTTAGTAACTTCTGTGTTAATACTGG-3' (SEQ ID NO: 2178)

5'-UGAAUAGCUGUCAUAAAAAUGAAAct-3' (SEQ ID NO: 1476)
3'-UGACUUAUCGACAGUAUUUUACUUUGA-5' (SEQ ID NO: 773)

KRAS-4773 Target: 5'-ACTGAATAGCTGTCATAAAATGAAACT-3' (SEQ ID NO: 2179)

5'-GAAUAGCUGUCAUAAAAUGAAACtt-3' (SEQ ID NO: 1477)
3'-GACUUAUCGACAGUAUUUUACUUUGAA-5' (SEQ ID NO: 774)

KRAS-4774 Target: 5'-CTGAATAGCTGTCATAAAATGAAACTT-3' (SEQ ID NO: 2180)

5'-AAAUGAAACUUUCUUUCUAAAGAaa-3' (SEQ ID NO: 1478)
3'-AUUUUACUUUGAAAGAAAGAUUUCUUU-5' (SEQ ID NO: 775)

KRAS-4788 Target: 5'-TAAAATGAAACTTTCTTTCTAAAGAAA-3' (SEQ ID NO: 2181)

5'-AAUGAAACUUUCUUUCUAAAGAAag-3' (SEQ ID NO: 1479)
3'-UUUUACUUUGAAAGAAAGAUUUCUUUC-5' (SEQ ID NO: 776)

KRAS-4789 Target: 5'-AAAATGAAACTTTCTTTCTAAAGAAAG-3' (SEQ ID NO: 2182)

5'-AUGAAACUUUCUUUCUAAAGAAAga-3' (SEQ ID NO: 1480)
3'-UUUACUUUGAAAGAAAGAUUUCUUUCU-5' (SEQ ID NO: 777)

KRAS-4790 Target: 5'-AAATGAAACTTTCTTTCTAAAGAAAGA-3' (SEQ ID NO: 2183)

5'-GAAACUUUCUUUCUAAAGAAAGAta-3' (SEQ ID NO: 1481)
3'-UACUUUGAAAGAAAGAUUUCUUUCUAU-5' (SEQ ID NO: 778)

KRAS-4792 Target: 5'-ATGAAACTTTCTTTCTAAAGAAAGATA-3' (SEQ ID NO: 2184)

5'-CUUUCUUUCUAAAGAAAGAUACUca-3' (SEQ ID NO: 1482)
3'-UUGAAAGAAAGAUUUCUUUCUAUGAGU-5' (SEQ ID NO: 779)

KRAS-4796 Target: 5'-AACTTTCTTTCTAAAGAAAGATACTCA-3' (SEQ ID NO: 2185)

5'-CAUGAGUUCUUGAAGAAUAGUCAta-3' (SEQ ID NO: 1483)
3'-GUGUACUCAAGAACUUCUUAUCAGUAU-5' (SEQ ID NO: 780)

KRAS-4821 Target: 5'-CACATGAGTTCTTGAAGAATAGTCATA-3' (SEQ ID NO: 2186)

5'-UUGAAGAAUAGUCAUAACUAGAUta-3' (SEQ ID NO: 1484)
3'-AGAACUUCUUAUCAGUAUUGAUCUAAU-5' (SEQ ID NO: 781)

KRAS-4830 Target: 5'-TCTTGAAGAATAGTCATAACTAGATTA-3' (SEQ ID NO: 2187)

5'-UGAAGAAUAGUCAUAACUAGAUUaa-3' (SEQ ID NO: 1485)
3'-GAACUUCUUAUCAGUAUUGAUCUAAUU-5' (SEQ ID NO: 782)

KRAS-4831 Target: 5'-CTTGAAGAATAGTCATAACTAGATTAA-3' (SEQ ID NO: 2188)

5'-GAAGAAUAGUCAUAACUAGAUUAag-3' (SEQ ID NO: 1486)
3'-AACUUCUUAUCAGUAUUGAUCUAAUUC-5' (SEQ ID NO: 783)

KRAS-4832 Target: 5'-TTGAAGAATAGTCATAACTAGATTAAG-3' (SEQ ID NO: 2189)

5'-GAAUAGUCAUAACUAGAUUAAGAtc-3' (SEQ ID NO: 1487)
3'-UUCUUAUCAGUAUUGAUCUAAUUCUAG-5' (SEQ ID NO: 784)

KRAS-4835 Target: 5'-AAGAATAGTCATAACTAGATTAAGATC-3' (SEQ ID NO: 2190)

5'-AAUAGUCAUAACUAGAUUAAGAUct-3' (SEQ ID NO: 1488)
3'-UCUUAUCAGUAUUGAUCUAAUUCUAGA-5' (SEQ ID NO: 785)

KRAS-4836 Target: 5'-AGAATAGTCATAACTAGATTAAGATCT-3' (SEQ ID NO: 2191)

5'-AUAGUCAUAACUAGAUUAAGAUCtg-3' (SEQ ID NO: 1489)
3'-CUUAUCAGUAUUGAUCUAAUUCUAGAC-5' (SEQ ID NO: 786)

KRAS-4837 Target: 5'-GAATAGTCATAACTAGATTAAGATCTG-3' (SEQ ID NO: 2192)

5'-UAGUCAUAACUAGAUUAAGAUCUgt-3' (SEQ ID NO: 1490)
3'-UUAUCAGUAUUGAUCUAAUUCUAGACA-5' (SEQ ID NO: 787)

KRAS-4838 Target: 5'-AATAGTCATAACTAGATTAAGATCTGT-3' (SEQ ID NO: 2193)

5'-CAUAACUAGAUUAAGAUCUGUGUtt-3' (SEQ ID NO: 1491)
3'-CAGUAUUGAUCUAAUUCUAGACACAAA-5' (SEQ ID NO: 788)

KRAS-4842 Target: 5'-GTCATAACTAGATTAAGATCTGTGTTT-3' (SEQ ID NO: 2194)

5'-UAGAUUAAGAUCUGUGUUUUAGUtt-3' (SEQ ID NO: 1492)
3'-UGAUCUAAUUCUAGACACAAAAUCAAA-5' (SEQ ID NO: 789)

KRAS-4848 Target: 5'-ACTAGATTAAGATCTGTGTTTTAGTTT-3' (SEQ ID NO: 2195)

5'-GAUUAAGAUCUGUGUUUUAGUUUaa-3' (SEQ ID NO: 1493)
3'-AUCUAAUUCUAGACACAAAAUCAAAUU-5' (SEQ ID NO: 790)

KRAS-4850 Target: 5'-TAGATTAAGATCTGTGTTTTAGTTTAA-3' (SEQ ID NO: 2196)

5'-AUUAAGAUCUGUGUUUUAGUUUAat-3' (SEQ ID NO: 1494)
3'-UCUAAUUCUAGACACAAAAUCAAAUUA-5' (SEQ ID NO: 791)

KRAS-4851 Target: 5'-AGATTAAGATCTGTGTTTTAGTTTAAT-3' (SEQ ID NO: 2197)

5'-UAAGAUCUGUGUUUUAGUUUAAUag-3' (SEQ ID NO: 1495)
3'-UAAUUCUAGACACAAAAUCAAAUUAUC-5' (SEQ ID NO: 792)

KRAS-4853 Target: 5'-ATTAAGATCTGTGTTTTAGTTTAATAG-3' (SEQ ID NO: 2198)

5'-UGUGUUUUAGUUUAAUAGUUUGAag-3' (SEQ ID NO: 1496)
3'-AGACACAAAAUCAAAUUAUCAAACUUC-5' (SEQ ID NO: 793)

KRAS-4860 Target: 5'-TCTGTGTTTTAGTTTAATAGTTTGAAG-3' (SEQ ID NO: 2199)

5'-GUGUUUUAGUUUAAUAGUUUGAAgt-3' (SEQ ID NO: 1497)
3'-GACACAAAAUCAAAUUAUCAAACUUCA-5' (SEQ ID NO: 794)

KRAS-4861 Target: 5'-CTGTGTTTTAGTTTAATAGTTTGAAGT-3' (SEQ ID NO: 2200)

5'-GUUUUAGUUUAAUAGUUUGAAGUgc-3' (SEQ ID NO: 1498)
3'-CACAAAAUCAAAUUAUCAAACUUCACG-5' (SEQ ID NO: 795)

KRAS-4863 Target: 5'-GTGTTTTAGTTTAATAGTTTGAAGTGC-3' (SEQ ID NO: 2201)

5'-UUUAGUUUAAUAGUUUGAAGUGCct-3' (SEQ ID NO: 1499)
3'-CAAAAUCAAAUUAUCAAACUUCACGGA-5' (SEQ ID NO: 796)

KRAS-4865 Target: 5'-GTTTTAGTTTAATAGTTTGAAGTGCCT-3' (SEQ ID NO: 2202)

5'-UUAGUUUAAUAGUUUGAAGUGCCtg-3' (SEQ ID NO: 1500)
3'-AAAAUCAAAUUAUCAAACUUCACGGAC-5' (SEQ ID NO: 797)

KRAS-4866 Target: 5'-TTTTAGTTTAATAGTTTGAAGTGCCTG-3' (SEQ ID NO: 2203)

5'-UUGGGAUAAUGAUAGGUAAUUUAga-3' (SEQ ID NO: 1501)
3'-CAAACCCUAUUACUAUCCAUUAAAUCU-5' (SEQ ID NO: 798)

KRAS-4892 Target: 5'-GTTTGGGATAATGATAGGTAATTTAGA-3' (SEQ ID NO: 2204)

5'-GGGAUAAUGAUAGGUAAUUUAGAtg-3' (SEQ ID NO: 1502)
3'-AACCCUAUUACUAUCCAUUAAAUCUAC-5' (SEQ ID NO: 799)

KRAS-4894 Target: 5'-TTGGGATAATGATAGGTAATTTAGATG-3' (SEQ ID NO: 2205)

5'-AUAAUGAUAGGUAAUUUAGAUGAat-3' (SEQ ID NO: 1503)
3'-CCUAUUACUAUCCAUUAAAUCUACUUA-5' (SEQ ID NO: 800)

KRAS-4897 Target: 5'-GGATAATGATAGGTAATTTAGATGAAT-3' (SEQ ID NO: 2206)

5'-UAAUGAUAGGUAAUUUAGAUGAAtt-3' (SEQ ID NO: 1504)
3'-CUAUUACUAUCCAUUAAAUCUACUUAA-5' (SEQ ID NO: 801)

KRAS-4898 Target: 5'-GATAATGATAGGTAATTTAGATGAATT-3' (SEQ ID NO: 2207)

5'-UGAUAGGUAAUUUAGAUGAAUUUag-3' (SEQ ID NO: 1505)
3'-UUACUAUCCAUUAAAUCUACUUAAAUC-5' (SEQ ID NO: 802)

KRAS-4901 Target: 5'-AATGATAGGTAATTTAGATGAATTTAG-3' (SEQ ID NO: 2208)

5'-GAUAGGUAAUUUAGAUGAAUUUAgg-3' (SEQ ID NO: 1506)
3'-UACUAUCCAUUAAAUCUACUUAAAUCC-5' (SEQ ID NO: 803)

KRAS-4902 Target: 5'-ATGATAGGTAATTTAGATGAATTTAGG-3' (SEQ ID NO: 2209)

5'-GUAAUUUAGAUGAAUUUAGGGGAaa-3' (SEQ ID NO: 1507)
3'-UCCAUUAAAUCUACUUAAAUCCCCUUU-5' (SEQ ID NO: 804)

KRAS-4907 Target: 5'-AGGTAATTTAGATGAATTTAGGGGAAA-3' (SEQ ID NO: 2210)

5'-AAUUUAGAUGAAUUUAGGGGAAAaa-3' (SEQ ID NO: 1508)
3'-CAUUAAAUCUACUUAAAUCCCCUUUUU-5' (SEQ ID NO: 805)

KRAS-4909 Target: 5'-GTAATTTAGATGAATTTAGGGGAAAAA-3' (SEQ ID NO: 2211)

5'-AUGAAUUUAGGGGAAAAAAAAGUta-3' (SEQ ID NO: 1509)

3'-UCUACUUAAAUCCCCUUUUUUUUCAAU-5' (SEQ ID NO: 806)

KRAS-4916 Target: 5'-AGATGAATTTAGGGGAAAAAAAAGTTA-3' (SEQ ID NO: 2212)

5'-UGAAUUUAGGGGAAAAAAAAGUUat-3' (SEQ ID NO: 1510)
3'-CUACUUAAAUCCCCUUUUUUUUCAAUA-5' (SEQ ID NO: 807)

KRAS-4917 Target: 5'-GATGAATTTAGGGGAAAAAAAAGTTAT-3' (SEQ ID NO: 2213)

5'-GAAAAAAAAGUUAUCUGCAGAUAtg-3' (SEQ ID NO: 1511)
3'-CCCUUUUUUUUCAAUAGACGUCUAUAC-5' (SEQ ID NO: 808)

KRAS-4928 Target: 5'-GGGAAAAAAAAGTTATCTGCAGATATG-3' (SEQ ID NO: 2214)

5'-AAAAAAAAGUUAUCUGCAGAUAUgt-3' (SEQ ID NO: 1512)
3'-CCUUUUUUUUCAAUAGACGUCUAUACA-5' (SEQ ID NO: 809)

KRAS-4929 Target: 5'-GGAAAAAAAAGTTATCTGCAGATATGT-3' (SEQ ID NO: 2215)

5'-AAAGUUAUCUGCAGAUAUGUUGAgg-3' (SEQ ID NO: 1513)
3'-UUUUUCAAUAGACGUCUAUACAACUCC-5' (SEQ ID NO: 810)

KRAS-4934 Target: 5'-AAAAAGTTATCTGCAGATATGTTGAGG-3' (SEQ ID NO: 2216)

5'-CUUGUGUUUUCAUGUUGAAAAUAct-3' (SEQ ID NO: 1514)
3'-CAGAACACAAAAGUACAACUUUUAUGA-5' (SEQ ID NO: 811)

KRAS-5035 Target: 5'-GTCTTGTGTTTTCATGTTGAAAATACT-3' (SEQ ID NO: 2217)

5'-UUGUGUUUUCAUGUUGAAAAUACtt-3' (SEQ ID NO: 1515)
3'-AGAACACAAAAGUACAACUUUUAUGAA-5' (SEQ ID NO: 812)

KRAS-5036 Target: 5'-TCTTGTGTTTTCATGTTGAAAATACTT-3' (SEQ ID NO: 2218)

5'-UGUGUUUUCAUGUUGAAAAUACUtt-3' (SEQ ID NO: 1516)
3'-GAACACAAAAGUACAACUUUUAUGAAA-5' (SEQ ID NO: 813)

KRAS-5037 Target: 5'-CTTGTGTTTTCATGTTGAAAATACTTT-3' (SEQ ID NO: 2219)

5'-UGUUGAAAAUACUUUUGCAUUUUtc-3' (SEQ ID NO: 1517)
3'-GUACAACUUUUAUGAAAACGUAAAAAG-5' (SEQ ID NO: 814)

KRAS-5047 Target: 5'-CATGTTGAAAATACTTTTGCATTTTTC-3' (SEQ ID NO: 2220)

5'-GUUGAAAAUACUUUUGCAUUUUUcc-3' (SEQ ID NO: 1518)
3'-UACAACUUUUAUGAAAACGUAAAAAGG-5' (SEQ ID NO: 815)

KRAS-5048 Target: 5'-ATGTTGAAAATACTTTTGCATTTTTCC-3' (SEQ ID NO: 2221)

5'-UUGAAAAUACUUUUGCAUUUUUCct-3' (SEQ ID NO: 1519)
3'-ACAACUUUUAUGAAAACGUAAAAAGGA-5' (SEQ ID NO: 816)

KRAS-5049 Target: 5'-TGTTGAAAATACTTTTGCATTTTTCCT-3' (SEQ ID NO: 2222)

5'-UGAAAAUACUUUUGCAUUUUUCCtt-3' (SEQ ID NO: 1520)
3'-CAACUUUUAUGAAAACGUAAAAAGGAA-5' (SEQ ID NO: 817)

KRAS-5050 Target: 5'-GTTGAAAATACTTTTGCATTTTTCCTT-3' (SEQ ID NO: 2223)

5'-UUUGCAUUUUUCCUUUGAGUGCCaa-3' (SEQ ID NO: 1521)
3'-GAAAACGUAAAAAGGAAACUCACGGUU-5' (SEQ ID NO: 818)

KRAS-5060 Target: 5'-CTTTTGCATTTTTCCTTTGAGTGCCAA-3' (SEQ ID NO: 2224)

5'-AGUGCCAAUUUCUUACUAGUACUat-3' (SEQ ID NO: 1522)
3'-ACUCACGGUUAAAGAAUGAUCAUGAUA-5' (SEQ ID NO: 819)

KRAS-5077 Target: 5'-TGAGTGCCAATTTCTTACTAGTACTAT-3' (SEQ ID NO: 2225)

5'-CAAUUUCUUACUAGUACUAUUUCtt-3' (SEQ ID NO: 1523)
3'-CGGUUAAAGAAUGAUCAUGAUAAAGAA-5' (SEQ ID NO: 820)

KRAS-5082 Target: 5'-GCCAATTTCTTACTAGTACTATTTCTT-3' (SEQ ID NO: 2226)

5'-AAUUUCUUACUAGUACUAUUUCUta-3' (SEQ ID NO: 1524)
3'-GGUUAAAGAAUGAUCAUGAUAAAGAAU-5' (SEQ ID NO: 821)

KRAS-5083 Target: 5'-CCAATTTCTTACTAGTACTATTTCTTA-3' (SEQ ID NO: 2227)

5'-CUAGUACUAUUUCUUAAUGUAACat-3' (SEQ ID NO: 1525)
3'-AUGAUCAUGAUAAAGAAUUACAUUGUA-5' (SEQ ID NO: 822)

KRAS-5092 Target: 5'-TACTAGTACTATTTCTTAATGTAACAT-3' (SEQ ID NO: 2228)

5'-UAGUACUAUUUCUUAAUGUAACAtg-3' (SEQ ID NO: 1526)
3'-UGAUCAUGAUAAAGAAUUACAUUGUAC-5' (SEQ ID NO: 823)

KRAS-5093 Target: 5'-ACTAGTACTATTTCTTAATGTAACATG-3' (SEQ ID NO: 2229)

5'-CUAUUUCUUAAUGUAACAUGUUUac-3' (SEQ ID NO: 1527)
3'-AUGAUAAAGAAUUACAUUGUACAAAUG-5' (SEQ ID NO: 824)

KRAS-5098 Target: 5'-TACTATTTCTTAATGTAACATGTTTAC-3' (SEQ ID NO: 2230)

5'-UAUUUCUUAAUGUAACAUGUUUAcc-3' (SEQ ID NO: 1528)
3'-UGAUAAAGAAUUACAUUGUACAAAUGG-5' (SEQ ID NO: 825)

KRAS-5099 Target: 5'-ACTATTTCTTAATGTAACATGTTTACC-3' (SEQ ID NO: 2231)

5'-AUUUCUUAAUGUAACAUGUUUACct-3' (SEQ ID NO: 1529)
3'-GAUAAAGAAUUACAUUGUACAAAUGGA-5' (SEQ ID NO: 826)

KRAS-5100 Target: 5'-CTATTTCTTAATGTAACATGTTTACCT-3' (SEQ ID NO: 2232)

5'-AAUGUAACAUGUUUACCUGGAAUgt-3' (SEQ ID NO: 1530)
3'-AAUUACAUUGUACAAAUGGACCUUACA-5' (SEQ ID NO: 827)

KRAS-5107 Target: 5'-TTAATGTAACATGTTTACCTGGAATGT-3' (SEQ ID NO: 2233)

5'-UGGAAUGUAUUUUAACUAUUUUUgt-3' (SEQ ID NO: 1531)
3'-GGACCUUACAUAAAAUUGAUAAAAACA-5' (SEQ ID NO: 828)

KRAS-5124 Target: 5'-CCTGGAATGTATTTTAACTATTTTTGT-3' (SEQ ID NO: 2234)

5'-GAAUGUAUUUUAACUAUUUUUGUat-3' (SEQ ID NO: 1532)
3'-ACCUUACAUAAAAUUGAUAAAAACAUA-5' (SEQ ID NO: 829)

KRAS-5126 Target: 5'-TGGAATGTATTTTAACTATTTTTGTAT-3' (SEQ ID NO: 2235)

5'-AAUGUAUUUUAACUAUUUUUGUAta-3' (SEQ ID NO: 1533)
3'-CCUUACAUAAAAUUGAUAAAAACAUAU-5' (SEQ ID NO: 830)

KRAS-5127 Target: 5'-GGAATGTATTTTAACTATTTTTGTATA-3' (SEQ ID NO: 2236)

5'-AUGUAUUUUAACUAUUUUUGUAUag-3' (SEQ ID NO: 1534)
3'-CUUACAUAAAAUUGAUAAAAACAUAUC-5' (SEQ ID NO: 831)

KRAS-5128 Target: 5'-GAATGTATTTTAACTATTTTTGTATAG-3' (SEQ ID NO: 2237)

5'-UGUAUUUUAACUAUUUUUGUAUAgt-3' (SEQ ID NO: 1535)
3'-UUACAUAAAAUUGAUAAAAACAUAUCA-5' (SEQ ID NO: 832)

KRAS-5129 Target: 5'-AATGTATTTTAACTATTTTTGTATAGT-3' (SEQ ID NO: 2238)

5'-UAUUUUAACUAUUUUUGUAUAGUgt-3' (SEQ ID NO: 1536)
3'-ACAUAAAAUUGAUAAAAACAUAUCACA-5' (SEQ ID NO: 833)

KRAS-5131 Target: 5'-TGTATTTTAACTATTTTTGTATAGTGT-3' (SEQ ID NO: 2239)

5'-UUUUAACUAUUUUUGUAUAGUGUaa-3' (SEQ ID NO: 1537)
3'-AUAAAAUUGAUAAAAACAUAUCACAUU-5' (SEQ ID NO: 834)

KRAS-5133 Target: 5'-TATTTTAACTATTTTTGTATAGTGTAA-3' (SEQ ID NO: 2240)

5'-UUUAACUAUUUUUGUAUAGUGUAaa-3' (SEQ ID NO: 1538)
3'-UAAAAUUGAUAAAAACAUAUCACAUUU-5' (SEQ ID NO: 835)

KRAS-5134 Target: 5'-ATTTTAACTATTTTTGTATAGTGTAAA-3' (SEQ ID NO: 2241)

5'-UUAACUAUUUUUGUAUAGUGUAAac-3' (SEQ ID NO: 1539)
3'-AAAAUUGAUAAAAACAUAUCACAUUUG-5' (SEQ ID NO: 836)

KRAS-5135 Target: 5'-TTTTAACTATTTTTGTATAGTGTAAAC-3' (SEQ ID NO: 2242)

5'-UUUUUGUAUAGUGUAAACUGAAAca-3' (SEQ ID NO: 1540)
3'-AUAAAAACAUAUCACAUUUGACUUUGU-5' (SEQ ID NO: 837)

KRAS-5142 Target: 5'-TATTTTTGTATAGTGTAAACTGAAACA-3' (SEQ ID NO: 2243)

5'-UUUUGUAUAGUGUAAACUGAAACat-3' (SEQ ID NO: 1541)
3'-UAAAAACAUAUCACAUUUGACUUUGUA-5' (SEQ ID NO: 838)

KRAS-5143 Target: 5'-ATTTTTGTATAGTGTAAACTGAAACAT-3' (SEQ ID NO: 2244)

5'-UUUGUAUAGUGUAAACUGAAACAtg-3' (SEQ ID NO: 1542)
3'-AAAAACAUAUCACAUUUGACUUUGUAC-5' (SEQ ID NO: 839)

KRAS-5144 Target: 5'-TTTTTGTATAGTGTAAACTGAAACATG-3' (SEQ ID NO: 2245)

5'-CUGAAACAUGCACAUUUUGUACAtt-3' (SEQ ID NO: 1543)
3'-UUGACUUUGUACGUGUAAAACAUGUAA-5' (SEQ ID NO: 840)

KRAS-5159 Target: 5'-AACTGAAACATGCACATTTTGTACATT-3' (SEQ ID NO: 2246)

5'-CAUGCACAUUUUGUACAUUGUGCtt-3' (SEQ ID NO: 1544)
3'-UUGUACGUGUAAAACAUGUAACACGAA-5' (SEQ ID NO: 841)

KRAS-5165 Target: 5'-AACATGCACATTTTGTACATTGTGCTT-3' (SEQ ID NO: 2247)

5'-CAGUUGUUUUCCAUCAUUUGGUUgc-3' (SEQ ID NO: 1545)
3'-AGGUCAACAAAAGGUAGUAAACCAACG-5' (SEQ ID NO: 842)

KRAS-5218 Target: 5'-TCCAGTTGTTTTCCATCATTTGGTTGC-3' (SEQ ID NO: 2248)

5'-GUUGUUUUCCAUCAUUUGGUUGCgc-3' (SEQ ID NO: 1546)
3'-GUCAACAAAAGGUAGUAAACCAACGCG-5' (SEQ ID NO: 843)

KRAS-5220 Target: 5'-CAGTTGTTTTCCATCATTTGGTTGCGC-3' (SEQ ID NO: 2249)

5'-GUUGGUCAUAUCAAACAUUAAAAat-3' (SEQ ID NO: 1547)
3'-UACAACCAGUAUAGUUUGUAAUUUUUA-5' (SEQ ID NO: 844)

KRAS-5257 Target: 5'-ATGTTGGTCATATCAAACATTAAAAAT-3' (SEQ ID NO: 2250)

5'-UUGGUCAUAUCAAACAUUAAAAAtg-3' (SEQ ID NO: 1548)
3'-ACAACCAGUAUAGUUUGUAAUUUUUAC-5' (SEQ ID NO: 845)

KRAS-5258 Target: 5'-TGTTGGTCATATCAAACATTAAAAATG-3' (SEQ ID NO: 2251)

5'-UGGUCAUAUCAAACAUUAAAAAUga-3' (SEQ ID NO: 1549)
3'-CAACCAGUAUAGUUUGUAAUUUUUACU-5' (SEQ ID NO: 846)

KRAS-5259 Target: 5'-GTTGGTCATATCAAACATTAAAAATGA-3' (SEQ ID NO: 2252)

5'-CAUAUCAAACAUUAAAAAUGACCac-3' (SEQ ID NO: 1550)
3'-CAGUAUAGUUUGUAAUUUUUACUGGUG-5' (SEQ ID NO: 847)

KRAS-5263 Target: 5'-GTCATATCAAACATTAAAAATGACCAC-3' (SEQ ID NO: 2253)

5'-AAUGACCACUCUUUUAAUUGAAAtt-3' (SEQ ID NO: 1551)
3'-UUUUACUGGUGAGAAAAUUAACUUUAA-5' (SEQ ID NO: 848)

KRAS-5279 Target: 5'-AAAATGACCACTCTTTTAATTGAAATT-3' (SEQ ID NO: 2254)

5'-AUGACCACUCUUUUAAUUGAAAUta-3' (SEQ ID NO: 1552)
3'-UUUACUGGUGAGAAAAUUAACUUUAAU-5' (SEQ ID NO: 849)

KRAS-5280 Target: 5'-AAATGACCACTCTTTTAATTGAAATTA-3' (SEQ ID NO: 2255)

5'-CUUUUAAUUGAAAUUAACUUUUAaa-3' (SEQ ID NO: 1553)
3'-GAGAAAAUUAACUUUAAUUGAAAAUUU-5' (SEQ ID NO: 850)

KRAS-5289 Target: 5'-CTCTTTTAATTGAAATTAACTTTTAAA-3' (SEQ ID NO: 2256)

5'-UUUUAAUUGAAAUUAACUUUUAAat-3' (SEQ ID NO: 1554)
3'-AGAAAAUUAACUUUAAUUGAAAAUUUA-5' (SEQ ID NO: 851)

KRAS-5290 Target: 5'-TCTTTTAATTGAAATTAACTTTTAAAT-3' (SEQ ID NO: 2257)

5'-UUAAUUGAAAUUAACUUUUAAAUgt-3' (SEQ ID NO: 1555)
3'-AAAAUUAACUUUAAUUGAAAAUUUACA-5' (SEQ ID NO: 852)

KRAS-5292 Target: 5'-TTTTAATTGAAATTAACTTTTAAATGT-3' (SEQ ID NO: 2258)

5'-AAUUGAAAUUAACUUUUAAAUGUtt-3' (SEQ ID NO: 1556)
3'-AAUUAACUUUAAUUGAAAAUUUACAAA-5' (SEQ ID NO: 853)

KRAS-5294 Target: 5'-TTAATTGAAATTAACTTTTAAATGTTT-3' (SEQ ID NO: 2259)

5'-AUUGAAAUUAACUUUUAAAUGUUta-3' (SEQ ID NO: 1557)
3'-AUUAACUUUAAUUGAAAAUUUACAAAU-5' (SEQ ID NO: 854)

KRAS-5295 Target: 5'-TAATTGAAATTAACTTTTAAATGTTTA-3' (SEQ ID NO: 2260)

5'-UUGAAAUUAACUUUUAAAUGUUUat-3' (SEQ ID NO: 1558)
3'-UUAACUUUAAUUGAAAAUUUACAAAUA-5' (SEQ ID NO: 855)

KRAS-5296 Target: 5'-AATTGAAATTAACTTTTAAATGTTTAT-3' (SEQ ID NO: 2261)

5'-UGAAAUUAACUUUUAAAUGUUUAta-3' (SEQ ID NO: 1559)
3'-UAACUUUAAUUGAAAAUUUACAAAUAU-5' (SEQ ID NO: 856)

KRAS-5297 Target: 5'-ATTGAAATTAACTTTTAAATGTTTATA-3' (SEQ ID NO: 2262)

5'-GAAAUUAACUUUUAAAUGUUUAUag-3' (SEQ ID NO: 1560)
3'-AACUUUAAUUGAAAAUUUACAAAUAUC-5' (SEQ ID NO: 857)

KRAS-5298 Target: 5'-TTGAAATTAACTTTTAAATGTTTATAG-3' (SEQ ID NO: 2263)

5'-AAAUUAACUUUUAAAUGUUUAUAgg-3' (SEQ ID NO: 1561)
3'-ACUUUAAUUGAAAAUUUACAAAUAUCC-5' (SEQ ID NO: 858)

KRAS-5299 Target: 5'-TGAAATTAACTTTTAAATGTTTATAGG-3' (SEQ ID NO: 2264)

5'-UUAACUUUUAAAUGUUUAUAGGAgt-3' (SEQ ID NO: 1562)

3'-UUAAUUGAAAAUUUACAAAUAUCCUCA-5' (SEQ ID NO: 859)

KRAS-5302 Target: 5'-AATTAACTTTTAAATGTTTATAGGAGT-3' (SEQ ID NO: 2265)

5'-CUUUUAAAUGUUUAUAGGAGUAUgt-3' (SEQ ID NO: 1563)
3'-UUGAAAAUUUACAAAUAUCCUCAUACA-5' (SEQ ID NO: 860)

KRAS-5306 Target: 5'-AACTTTTAAATGTTTATAGGAGTATGT-3' (SEQ ID NO: 2266)

5'-UAAAUGUUUAUAGGAGUAUGUGCtg-3' (SEQ ID NO: 1564)
3'-AAAUUUACAAAUAUCCUCAUACACGAC-5' (SEQ ID NO: 861)

KRAS-5310 Target: 5'-TTTAAATGTTTATAGGAGTATGTGCTG-3' (SEQ ID NO: 2267)

5'-AAAUGUUUAUAGGAGUAUGUGCUgt-3' (SEQ ID NO: 1565)
3'-AAUUUACAAAUAUCCUCAUACACGACA-5' (SEQ ID NO: 862)

KRAS-5311 Target: 5'-TTAAATGTTTATAGGAGTATGTGCTGT-3' (SEQ ID NO: 2268)

5'-UGUGAAGUGAUCUAAAAUUUGUAat-3' (SEQ ID NO: 1566)
3'-CGACACUUCACUAGAUUUUAAACAUUA-5' (SEQ ID NO: 863)

KRAS-5333 Target: 5'-GCTGTGAAGTGATCTAAAATTTGTAAT-3' (SEQ ID NO: 2269)

5'-UGAAGUGAUCUAAAAUUUGUAAUat-3' (SEQ ID NO: 1567)
3'-ACACUUCACUAGAUUUUAAACAUUAUA-5' (SEQ ID NO: 864)

KRAS-5335 Target: 5'-TGTGAAGTGATCTAAAATTTGTAATAT-3' (SEQ ID NO: 2270)

5'-GAAGUGAUCUAAAAUUUGUAAUAtt-3' (SEQ ID NO: 1568)
3'-CACUUCACUAGAUUUUAAACAUUAUAA-5' (SEQ ID NO: 865)

KRAS-5336 Target: 5'-GTGAAGTGATCTAAAATTTGTAATATT-3' (SEQ ID NO: 2271)

5'-AAGUGAUCUAAAAUUUGUAAUAUtt-3' (SEQ ID NO: 1569)
3'-ACUUCACUAGAUUUUAAACAUUAUAAA-5' (SEQ ID NO: 866)

KRAS-5337 Target: 5'-TGAAGTGATCTAAAATTTGTAATATTT-3' (SEQ ID NO: 2272)

5'-AGUGAUCUAAAAUUUGUAAUAUUtt-3' (SEQ ID NO: 1570)
3'-CUUCACUAGAUUUUAAACAUUAUAAAA-5' (SEQ ID NO: 867)

KRAS-5338 Target: 5'-GAAGTGATCTAAAATTTGTAATATTTT-3' (SEQ ID NO: 2273)

5'-GUGAUCUAAAAUUUGUAAUAUUUtt-3' (SEQ ID NO: 1571)
3'-UUCACUAGAUUUUAAACAUUAUAAAAA-5' (SEQ ID NO: 868)

KRAS-5339 Target: 5'-AAGTGATCTAAAATTTGTAATATTTTT-3' (SEQ ID NO: 2274)

5'-UGAUCUAAAAUUUGUAAUAUUUUtg-3' (SEQ ID NO: 1572)
3'-UCACUAGAUUUUAAACAUUAUAAAAAC-5' (SEQ ID NO: 869)

KRAS-5340 Target: 5'-AGTGATCTAAAATTTGTAATATTTTTG-3' (SEQ ID NO: 2275)

5'-CUAAAAUUUGUAAUAUUUUUGUCat-3' (SEQ ID NO: 1573)
3'-UAGAUUUUAAACAUUAUAAAAACAGUA-5' (SEQ ID NO: 870)

KRAS-5344 Target: 5'-ATCTAAAATTTGTAATATTTTTGTCAT-3' (SEQ ID NO: 2276)

5'-UAAAAUUUGUAAUAUUUUUGUCAtg-3' (SEQ ID NO: 1574)
3'-AGAUUUUAAACAUUAUAAAAACAGUAC-5' (SEQ ID NO: 871)

KRAS-5345 Target: 5'-TCTAAAATTTGTAATATTTTTGTCATG-3' (SEQ ID NO: 2277)

5'-AUUUGUAAUAUUUUUGUCAUGAAct-3' (SEQ ID NO: 1575)
3'-UUUAAACAUUAUAAAAACAGUACUUGA-5' (SEQ ID NO: 872)

KRAS-5349 Target: 5'-AAATTTGTAATATTTTTGTCATGAACT-3' (SEQ ID NO: 2278)

5'-UUUGUAAUAUUUUUGUCAUGAACtg-3' (SEQ ID NO: 1576)
3'-UUAAACAUUAUAAAAACAGUACUUGAC-5' (SEQ ID NO: 873)

KRAS-5350 Target: 5'-AATTTGTAATATTTTTGTCATGAACTG-3' (SEQ ID NO: 2279)

5'-UUGUAAUAUUUUUGUCAUGAACUgt-3' (SEQ ID NO: 1577)
3'-UAAACAUUAUAAAAACAGUACUUGACA-5' (SEQ ID NO: 874)

KRAS-5351 Target: 5'-ATTTGTAATATTTTTGTCATGAACTGT-3' (SEQ ID NO: 2280)

5'-AAUAUUUUUGUCAUGAACUGUACta-3' (SEQ ID NO: 1578)
3'-CAUUAUAAAAACAGUACUUGACAUGAU-5' (SEQ ID NO: 875)

KRAS-5355 Target: 5'-GTAATATTTTTGTCATGAACTGTACTA-3' (SEQ ID NO: 2281)

5'-AUAUUUUUGUCAUGAACUGUACUac-3' (SEQ ID NO: 1579)
3'-AUUAUAAAAACAGUACUUGACAUGAUG-5' (SEQ ID NO: 876)

KRAS-5356 Target: 5'-TAATATTTTTGTCATGAACTGTACTAC-3' (SEQ ID NO: 2282)

5'-CUGUACUACUCCUAAUUAUUGUAat-3' (SEQ ID NO: 1580)
3'-UUGACAUGAUGAGGAUUAAUAACAUUA-5' (SEQ ID NO: 877)

KRAS-5372 Target: 5'-AACTGTACTACTCCTAATTATTGTAAT-3' (SEQ ID NO: 2283)

5'-UGUACUACUCCUAAUUAUUGUAAtg-3' (SEQ ID NO: 1581)
3'-UGACAUGAUGAGGAUUAAUAACAUUAC-5' (SEQ ID NO: 878)

KRAS-5373 Target: 5'-ACTGTACTACTCCTAATTATTGTAATG-3' (SEQ ID NO: 2284)

5'-CUAAUUAUUGUAAUGUAAUAAAAat-3' (SEQ ID NO: 1582)
3'-AGGAUUAAUAACAUUACAUUAUUUUUA-5' (SEQ ID NO: 879)

KRAS-5383 Target: 5'-TCCTAATTATTGTAATGTAATAAAAAT-3' (SEQ ID NO: 2285)

5'-UAAUUAUUGUAAUGUAAUAAAAAta-3' (SEQ ID NO: 1583)
3'-GGAUUAAUAACAUUACAUUAUUUUUAU-5' (SEQ ID NO: 880)

KRAS-5384 Target: 5'-CCTAATTATTGTAATGTAATAAAAATA-3' (SEQ ID NO: 2286)

5'-AUUAUUGUAAUGUAAUAAAAAUAgt-3' (SEQ ID NO: 1584)
3'-AUUAAUAACAUUACAUUAUUUUUAUCA-5' (SEQ ID NO: 881)

KRAS-5386 Target: 5'-TAATTATTGTAATGTAATAAAAATAGT-3' (SEQ ID NO: 2287)

5'-UAUUGUAAUGUAAUAAAAAUAGUta-3' (SEQ ID NO: 1585)
3'-UAAUAACAUUACAUUAUUUUUAUCAAU-5' (SEQ ID NO: 882)

KRAS-5388 Target: 5'-ATTATTGTAATGTAATAAAAATAGTTA-3' (SEQ ID NO: 2288)

5'-AUUGUAAUGUAAUAAAAAUAGUUac-3' (SEQ ID NO: 1586)
3'-AAUAACAUUACAUUAUUUUUAUCAAUG-5' (SEQ ID NO: 883)

KRAS-5389 Target: 5'-TTATTGTAATGTAATAAAAATAGTTAC-3' (SEQ ID NO: 2289)

5'-UGUAAUGUAAUAAAAAUAGUUACag-3' (SEQ ID NO: 1587)
3'-UAACAUUACAUUAUUUUUAUCAAUGUC-5' (SEQ ID NO: 884)

KRAS-5391 Target: 5'-ATTGTAATGTAATAAAAATAGTTACAG-3' (SEQ ID NO: 2290)

5'-GUAAUGUAAUAAAAAUAGUUACAgt-3' (SEQ ID NO: 1588)
3'-AACAUUACAUUAUUUUUAUCAAUGUCA-5' (SEQ ID NO: 885)

KRAS-5392 Target: 5'-TTGTAATGTAATAAAAATAGTTACAGT-3' (SEQ ID NO: 2291)

5'-UGUAAUAAAAAUAGUUACAGUGAca-3' (SEQ ID NO: 1589)
3'-UUACAUUAUUUUUAUCAAUGUCACUGU-5' (SEQ ID NO: 886)

KRAS-5396 Target: 5'-AATGTAATAAAAATAGTTACAGTGACA-3' (SEQ ID NO: 2292)

5'-GUAAUAAAAAUAGUUACAGUGACaa-3' (SEQ ID NO: 1590)
3'-UACAUUAUUUUUAUCAAUGUCACUGUU-5' (SEQ ID NO: 887)

KRAS-5397 Target: 5'-ATGTAATAAAAATAGTTACAGTGACAA-3' (SEQ ID NO: 2293)

5'-UAAUAAAAAUAGUUACAGUGACAaa-3' (SEQ ID NO: 1591)
3'-ACAUUAUUUUUAUCAAUGUCACUGUUU-5' (SEQ ID NO: 888)

KRAS-5398 Target: 5'-TGTAATAAAAATAGTTACAGTGACAAA-3' (SEQ ID NO: 2294)

5'-AUAGUUACAGUGACAAAAAAAAAAaa-3' (SEQ ID NO: 1592)
3'-UUUAUCAAUGUCACUGUUUUUUUUUU-5' (SEQ ID NO: 889)

KRAS-5406 Target: 5'-AAATAGTTACAGTGACAAAAAAAAAAA-3' (SEQ ID NO: 2295)

5'-UAGUUACAGUGACAAAAAAAAAAaa-3' (SEQ ID NO: 1593)
3'-UUAUCAAUGUCACUGUUUUUUUUUU-5' (SEQ ID NO: 890)

KRAS-5407 Target: 5'-AATAGTTACAGTGACAAAAAAAAAAA-3' (SEQ ID NO: 2296)

5'-GUUACAGUGACAAAAAAAAAAAAaa-3' (SEQ ID NO: 1594)
3'-AUCAAUGUCACUGUUUUUUUUUUU-5' (SEQ ID NO: 891)

KRAS-5409 Target: 5'-TAGTTACAGTGACAAAAAAAAAAAAA-3' (SEQ ID NO: 2297)

Table 5: Further Preferred Anti-KRAS Asymmetric DsiRNA Agent Structures

5'-UGCUGAAAAUGACUGAAUAUAAAct-3' (SEQ ID NO: 3001)
3'-GGACGACUUUUACUGACUUAUAUUUGA-5' (SEQ ID NO: 2298)

KRAS-172 Target: 5'-CCTGCTGAAAATGACTGAATATAAACT-3' (SEQ ID NO: 3704)

5'-AAAUGACUGAAUAUAAACUUGUGgt-3' (SEQ ID NO: 3002)
3'-CUUUUACUGACUUAUAUUUGAACACCA-5' (SEQ ID NO: 2299)

KRAS-178 Target: 5'-GAAAATGACTGAATATAAACTTGTGGT-3' (SEQ ID NO: 3705)

5'-GACUGAAUAUAAACUUGUGGUAGtt-3' (SEQ ID NO: 3003)
3'-UACUGACUUAUAUUUGAACACCAUCAA-5' (SEQ ID NO: 2300)

KRAS-182 Target: 5'-ATGACTGAATATAAACTTGTGGTAGTT-3' (SEQ ID NO: 3706)

5'-AGCUAAUUCAGAAUCAUUUUGUGga-3' (SEQ ID NO: 3004)
3'-UGUCGAUUAAGUCUUAGUAAAACACCU-5' (SEQ ID NO: 2301)

KRAS-244 Target: 5'-ACAGCTAATTCAGAATCATTTTGTGGA-3' (SEQ ID NO: 3707)

5'-ACGAAUAUGAUCCAACAAUAGAGga-3' (SEQ ID NO: 3005)
3'-CCUGCUUAUACUAGGUUGUUAUCUCCU-5' (SEQ ID NO: 2302)

KRAS-268 Target: 5'-GGACGAATATGATCCAACAATAGAGGA-3' (SEQ ID NO: 3708)

5'-AGCAAGUAGUAAUUGAUGGAGAAac-3' (SEQ ID NO: 3006)
3'-CUUCGUUCAUCAUUAACUACCUCUUUG-5' (SEQ ID NO: 2303)

KRAS-304 Target: 5'-GAAGCAAGTAGTAATTGATGGAGAAAC-3' (SEQ ID NO: 3709)

5'-GGAGGGCUUUCUUUGUGUAUUUGcc-3' (SEQ ID NO: 3007)
3'-CCCCUCCCGAAAGAAACACAUAAACGG-5' (SEQ ID NO: 2304)

KRAS-404 Target: 5'-GGGGAGGGCTTTCTTTGTGTATTTGCC-3' (SEQ ID NO: 3710)

5'-UCUUUGUGUAUUUGCCAUAAAUAat-3' (SEQ ID NO: 3008)
3'-AAAGAAACACAUAAACGGUAUUUAUUA-5' (SEQ ID NO: 2305)

KRAS-413 Target: 5'-TTTCTTTGTGTATTTGCCATAAATAAT-3' (SEQ ID NO: 3711)

5'-CUUUGUGUAUUUGCCAUAAAUAAta-3' (SEQ ID NO: 3009)
3'-AAGAAACACAUAAACGGUAUUUAUUAU-5' (SEQ ID NO: 2306)

KRAS-414 Target: 5'-TTCTTTGTGTATTTGCCATAAATAATA-3' (SEQ ID NO: 3712)

5'-UUUGUGUAUUUGCCAUAAAUAAUac-3' (SEQ ID NO: 3010)
3'-AGAAACACAUAAACGGUAUUUAUUAUG-5' (SEQ ID NO: 2307)

KRAS-415 Target: 5'-TCTTTGTGTATTTGCCATAAATAATAC-3' (SEQ ID NO: 3713)

5'-UUGUGUAUUUGCCAUAAAUAAUAct-3' (SEQ ID NO: 3011)
3'-GAAACACAUAAACGGUAUUUAUUAUGA-5' (SEQ ID NO: 2308)

KRAS-416 Target: 5'-CTTTGTGTATTTGCCATAAATAATACT-3' (SEQ ID NO: 3714)

5'-GUAUUUGCCAUAAAUAAUACUAAat-3' (SEQ ID NO: 3012)
3'-CACAUAAACGGUAUUUAUUAUGAUUUA-5' (SEQ ID NO: 2309)

KRAS-420 Target: 5'-GTGTATTTGCCATAAATAATACTAAAT-3' (SEQ ID NO: 3715)

5'-UAUUUGCCAUAAAUAAUACUAAAtc-3' (SEQ ID NO: 3013)
3'-ACAUAAACGGUAUUUAUUAUGAUUUAG-5' (SEQ ID NO: 2310)

KRAS-421 Target: 5'-TGTATTTGCCATAAATAATACTAAATC-3' (SEQ ID NO: 3716)

5'-CCAUAAAUAAUACUAAAUCAUUUga-3' (SEQ ID NO: 3014)
3'-ACGGUAUUUAUUAUGAUUUAGUAAACU-5' (SEQ ID NO: 2311)

KRAS-427 Target: 5'-TGCCATAAATAATACTAAATCATTTGA-3' (SEQ ID NO: 3717)

5'-CAUAAAUAAUACUAAAUCAUUUGaa-3' (SEQ ID NO: 3015)
3'-CGGUAUUUAUUAUGAUUUAGUAAACUU-5' (SEQ ID NO: 2312)

KRAS-428 Target: 5'-GCCATAAATAATACTAAATCATTTGAA-3' (SEQ ID NO: 3718)

5'-UAAAUAAUACUAAAUCAUUUGAAga-3' (SEQ ID NO: 3016)
3'-GUAUUUAUUAUGAUUUAGUAAACUUCU-5' (SEQ ID NO: 2313)

KRAS-430 Target: 5'-CATAAATAATACTAAATCATTTGAAGA-3' (SEQ ID NO: 3719)

5'-AAAUAAUACUAAAUCAUUUGAAGat-3' (SEQ ID NO: 3017)
3'-UAUUUAUUAUGAUUUAGUAAACUUCUA-5' (SEQ ID NO: 2314)

KRAS-431 Target: 5'-ATAAATAATACTAAATCATTTGAAGAT-3' (SEQ ID NO: 3720)

5'-AAUAAUACUAAAUCAUUUGAAGAta-3' (SEQ ID NO: 3018)
3'-AUUUAUUAUGAUUUAGUAAACUUCUAU-5' (SEQ ID NO: 2315)

KRAS-432 Target: 5'-TAAATAATACTAAATCATTTGAAGATA-3' (SEQ ID NO: 3721)

5'-AUAAUACUAAAUCAUUUGAAGAUat-3' (SEQ ID NO: 3019)
3'-UUUAUUAUGAUUUAGUAAACUUCUAUA-5' (SEQ ID NO: 2316)

KRAS-433 Target: 5'-AAATAATACTAAATCATTTGAAGATAT-3' (SEQ ID NO: 3722)

5'-AUUUGAAGAUAUUCACCAUUAUAga-3' (SEQ ID NO: 3020)

3'-AGUAAACUUCUAUAAGUGGUAAUAUCU-5' (SEQ ID NO: 2317)

KRAS-446 Target: 5'-TCATTTGAAGATATTCACCATTATAGA-3' (SEQ ID NO: 3723)

5'-UUGAAGAUAUUCACCAUUAUAGAga-3' (SEQ ID NO: 3021)
3'-UAAACUUCUAUAAGUGGUAAUAUCUCU-5' (SEQ ID NO: 2318)

KRAS-448 Target: 5'-ATTTGAAGATATTCACCATTATAGAGA-3' (SEQ ID NO: 3724)

5'-UGAAGAUAUUCACCAUUAUAGAGaa-3' (SEQ ID NO: 3022)
3'-AAACUUCUAUAAGUGGUAAUAUCUCUU-5' (SEQ ID NO: 2319)

KRAS-449 Target: 5'-TTTGAAGATATTCACCATTATAGAGAA-3' (SEQ ID NO: 3725)

5'-GAAGAUAUUCACCAUUAUAGAGAac-3' (SEQ ID NO: 3023)
3'-AACUUCUAUAAGUGGUAAUAUCUCUUG-5' (SEQ ID NO: 2320)

KRAS-450 Target: 5'-TTGAAGATATTCACCATTATAGAGAAC-3' (SEQ ID NO: 3726)

5'-AAGAUAUUCACCAUUAUAGAGAAca-3' (SEQ ID NO: 3024)
3'-ACUUCUAUAAGUGGUAAUAUCUCUUGU-5' (SEQ ID NO: 2321)

KRAS-451 Target: 5'-TGAAGATATTCACCATTATAGAGAACA-3' (SEQ ID NO: 3727)

5'-CCAUUAUAGAGAACAAAUUAAAAga-3' (SEQ ID NO: 3025)
3'-GUGGUAAUAUCUCUUGUUUAAUUUUCU-5' (SEQ ID NO: 2322)

KRAS-461 Target: 5'-CACCATTATAGAGAACAAATTAAAAGA-3' (SEQ ID NO: 3728)

5'-AUUAUAGAGAACAAAUUAAAAGAgt-3' (SEQ ID NO: 3026)
3'-GGUAAUAUCUCUUGUUUAAUUUUCUCA-5' (SEQ ID NO: 2323)

KRAS-463 Target: 5'-CCATTATAGAGAACAAATTAAAAGAGT-3' (SEQ ID NO: 3729)

5'-UUAUAGAGAACAAAUUAAAAGAGtt-3' (SEQ ID NO: 3027)
3'-GUAAUAUCUCUUGUUUAAUUUUCUCAA-5' (SEQ ID NO: 2324)

KRAS-464 Target: 5'-CATTATAGAGAACAAATTAAAAGAGTT-3' (SEQ ID NO: 3730)

5'-UAUAGAGAACAAAUUAAAAGAGUta-3' (SEQ ID NO: 3028)
3'-UAAUAUCUCUUGUUUAAUUUUCUCAAU-5' (SEQ ID NO: 2325)

KRAS-465 Target: 5'-ATTATAGAGAACAAATTAAAAGAGTTA-3' (SEQ ID NO: 3731)

5'-AUAGAGAACAAAUUAAAAGAGUUaa-3' (SEQ ID NO: 3029)
3'-AAUAUCUCUUGUUUAAUUUUCUCAAUU-5' (SEQ ID NO: 2326)

KRAS-466 Target: 5'-TTATAGAGAACAAATTAAAAGAGTTAA-3' (SEQ ID NO: 3732)

5'-CUAGUAGGAAAUAAAUGUGAUUUgc-3' (SEQ ID NO: 3030)
3'-AGGAUCAUCCUUUAUUUACACUAAACG-5' (SEQ ID NO: 2327)

KRAS-516 Target: 5'-TCCTAGTAGGAAATAAATGTGATTTGC-3' (SEQ ID NO: 3733)

5'-UAGUAGGAAAUAAAUGUGAUUUGcc-3' (SEQ ID NO: 3031)
3'-GGAUCAUCCUUUAUUUACACUAAACGG-5' (SEQ ID NO: 2328)

KRAS-517 Target: 5'-CCTAGTAGGAAATAAATGTGATTTGCC-3' (SEQ ID NO: 3734)

5'-AAGAAGUUAUGGAAUUCCUUUUAtt-3' (SEQ ID NO: 3032)
3'-CGUUCUUCAAUACCUUAAGGAAAAUAA-5' (SEQ ID NO: 2329)

KRAS-581 Target: 5'-GCAAGAAGTTATGGAATTCCTTTTATT-3' (SEQ ID NO: 3735)

5'-AAGUUAUGGAAUUCCUUUUAUUGaa-3' (SEQ ID NO: 3033)
3'-UCUUCAAUACCUUAAGGAAAAUAACUU-5' (SEQ ID NO: 2330)

KRAS-584 Target: 5'-AGAAGTTATGGAATTCCTTTTATTGAA-3' (SEQ ID NO: 3736)

5'-AGUUAUGGAAUUCCUUUUAUUGAaa-3' (SEQ ID NO: 3034)
3'-CUUCAAUACCUUAAGGAAAAUAACUUU-5' (SEQ ID NO: 2331)

KRAS-585 Target: 5'-GAAGTTATGGAATTCCTTTTATTGAAA-3' (SEQ ID NO: 3737)

5'-GUUAUGGAAUUCCUUUUAUUGAAac-3' (SEQ ID NO: 3035)
3'-UUCAAUACCUUAAGGAAAAUAACUUUG-5' (SEQ ID NO: 2332)

KRAS-586 Target: 5'-AAGTTATGGAATTCCTTTTATTGAAAC-3' (SEQ ID NO: 3738)

5'-UUAUGGAAUUCCUUUUAUUGAAAca-3' (SEQ ID NO: 3036)
3'-UCAAUACCUUAAGGAAAAUAACUUUGU-5' (SEQ ID NO: 2333)

KRAS-587 Target: 5'-AGTTATGGAATTCCTTTTATTGAAACA-3' (SEQ ID NO: 3739)

5'-UGGAGGAUGCUUUUUAUACAUUGgt-3' (SEQ ID NO: 3037)
3'-UCACCUCCUACGAAAAAUAUGUAACCA-5' (SEQ ID NO: 2334)

KRAS-634 Target: 5'-AGTGGAGGATGCTTTTTATACATTGGT-3' (SEQ ID NO: 3740)

5'-GAGGAUGCUUUUUAUACAUUGGUga-3' (SEQ ID NO: 3038)
3'-ACCUCCUACGAAAAAUAUGUAACCACU-5' (SEQ ID NO: 2335)

KRAS-636 Target: 5'-TGGAGGATGCTTTTTATACATTGGTGA-3' (SEQ ID NO: 3741)

5'-ACAGAUUGAAAAAAAAUCAGCAAAga-3' (SEQ ID NO: 3039)
3'-UAUGUCUAACUUUUUUUAGUCGUUUCU-5' (SEQ ID NO: 2336)

KRAS-676 Target: 5'-ATACAGATTGAAAAAAATCAGCAAAGA-3' (SEQ ID NO: 3742)

5'-CAGAUUGAAAAAAAAUCAGCAAAGaa-3' (SEQ ID NO: 3040)
3'-AUGUCUAACUUUUUUUAGUCGUUUCUU-5' (SEQ ID NO: 2337)

KRAS-677 Target: 5'-TACAGATTGAAAAAAATCAGCAAAGAA-3' (SEQ ID NO: 3743)

5'-GAUUGAAAAAAAAUCAGCAAAGAAga-3' (SEQ ID NO: 3041)
3'-GUCUAACUUUUUUUAGUCGUUUCUUCU-5' (SEQ ID NO: 2338)

KRAS-679 Target: 5'-CAGATTGAAAAAAATCAGCAAAGAAGA-3' (SEQ ID NO: 3744)

5'-AUUGAAAAAAAAUCAGCAAAGAAGaa-3' (SEQ ID NO: 3042)
3'-UCUAACUUUUUUUAGUCGUUUCUUCUU-5' (SEQ ID NO: 2339)

KRAS-680 Target: 5'-AGATTGAAAAAAATCAGCAAAGAAGAA-3' (SEQ ID NO: 3745)

5'-UUGAAAAAAAAUCAGCAAAGAAGAaa-3' (SEQ ID NO: 3043)
3'-CUAACUUUUUUUAGUCGUUUCUUCUUU-5' (SEQ ID NO: 2340)

KRAS-681 Target: 5'-GATTGAAAAAAATCAGCAAAGAAGAAA-3' (SEQ ID NO: 3746)

5'-UGAAAAAAAAUCAGCAAAGAAGAAaa-3' (SEQ ID NO: 3044)
3'-UAACUUUUUUUAGUCGUUUCUUCUUUU-5' (SEQ ID NO: 2341)

KRAS-682 Target: 5'-ATTGAAAAAAATCAGCAAAGAAGAAAA-3' (SEQ ID NO: 3747)

5'-UCCUGGCUGUGUGAAAAUUAAAAaa-3' (SEQ ID NO: 3045)
3'-UGAGGACCGACACACUUUUAAUUUUUU-5' (SEQ ID NO: 2342)

KRAS-710 Target: 5'-ACTCCTGGCTGTGTGAAAATTAAAAAA-3' (SEQ ID NO: 3748)

5'-GGCUGUGUGAAAAUUAAAAAAUGca-3' (SEQ ID NO: 3046)
3'-GACCGACACACUUUUAAUUUUUUACGU-5' (SEQ ID NO: 2343)

KRAS-714 Target: 5'-CTGGCTGTGTGAAAATTAAAAAATGCA-3' (SEQ ID NO: 3749)

5'-GUGUGAAAAUUAAAAAAUGCAUUat-3' (SEQ ID NO: 3047)
3'-GACACACUUUUAAUUUUUUACGUAAUA-5' (SEQ ID NO: 2344)

KRAS-718 Target: 5'-CTGTGTGAAAATTAAAAAATGCATTAT-3' (SEQ ID NO: 3750)

5'-UGUGAAAAUUAAAAAAUGCAUUAta-3' (SEQ ID NO: 3048)
3'-ACACACUUUUAAUUUUUUACGUAAUAU-5' (SEQ ID NO: 2345)

KRAS-719 Target: 5'-TGTGTGAAAATTAAAAAATGCATTATA-3' (SEQ ID NO: 3751)

5'-GUGAAAAUUAAAAAAUGCAUUAUaa-3' (SEQ ID NO: 3049)
3'-CACACUUUUAAUUUUUUACGUAAUAUU-5' (SEQ ID NO: 2346)

KRAS-720 Target: 5'-GTGTGAAAATTAAAAAATGCATTATAA-3' (SEQ ID NO: 3752)

5'-UGAAAAUUAAAAAAUGCAUUAUAat-3' (SEQ ID NO: 3050)
3'-ACACUUUUAAUUUUUUACGUAAUAUUA-5' (SEQ ID NO: 2347)

KRAS-721 Target: 5'-TGTGAAAATTAAAAAATGCATTATAAT-3' (SEQ ID NO: 3753)

5'-AAAAUUAAAAAAUGCAUUAUAAUgt-3' (SEQ ID NO: 3051)
3'-ACUUUUAAUUUUUUACGUAAUAUUACA-5' (SEQ ID NO: 2348)

KRAS-723 Target: 5'-TGAAAATTAAAAAATGCATTATAATGT-3' (SEQ ID NO: 3754)

5'-AAAUUAAAAAAUGCAUUAUAAUGta-3' (SEQ ID NO: 3052)
3'-CUUUUAAUUUUUUACGUAAUAUUACAU-5' (SEQ ID NO: 2349)

KRAS-724 Target: 5'-GAAAATTAAAAAATGCATTATAATGTA-3' (SEQ ID NO: 3755)

5'-AAUUAAAAAAUGCAUUAUAAUGUaa-3' (SEQ ID NO: 3053)
3'-UUUUAAUUUUUUACGUAAUAUUACAUU-5' (SEQ ID NO: 2350)

KRAS-725 Target: 5'-AAAATTAAAAAATGCATTATAATGTAA-3' (SEQ ID NO: 3756)

5'-AUUAAAAAAUGCAUUAUAAUGUAat-3' (SEQ ID NO: 3054)
3'-UUUAAUUUUUUACGUAAUAUUACAUUA-5' (SEQ ID NO: 2351)

KRAS-726 Target: 5'-AAATTAAAAAATGCATTATAATGTAAT-3' (SEQ ID NO: 3757)

5'-UAAAAAAUGCAUUAUAAUGUAAUct-3' (SEQ ID NO: 3055)
3'-UAAUUUUUUACGUAAUAUUACAUUAGA-5' (SEQ ID NO: 2352)

KRAS-728 Target: 5'-ATTAAAAAATGCATTATAATGTAATCT-3' (SEQ ID NO: 3758)

5'-UGCAUUAUAAUGUAAUCUGGGUGtt-3' (SEQ ID NO: 3056)
3'-UUACGUAAUAUUACAUUAGACCCACAA-5' (SEQ ID NO: 2353)

KRAS-735 Target: 5'-AATGCATTATAATGTAATCTGGGTGTT-3' (SEQ ID NO: 3759)

5'-UUCGAGAAAUUCGAAAACAUAAAga-3' (SEQ ID NO: 3057)
3'-UCAAGCUCUUUAAGCUUUUGUAUUUCU-5' (SEQ ID NO: 2354)

KRAS-782 Target: 5'-AGTTCGAGAAATTCGAAAACATAAAGA-3' (SEQ ID NO: 3760)

5'-UCGAGAAAUUCGAAAACAUAAAGaa-3' (SEQ ID NO: 3058)
3'-CAAGCUCUUUAAGCUUUUGUAUUUCUU-5' (SEQ ID NO: 2355)

KRAS-783 Target: 5'-GTTCGAGAAATTCGAAAACATAAAGAA-3' (SEQ ID NO: 3761)

5'-CGAGAAAUUCGAAAACAUAAAGAaa-3' (SEQ ID NO: 3059)
3'-AAGCUCUUUAAGCUUUUGUAUUUCUUU-5' (SEQ ID NO: 2356)

KRAS-784 Target: 5'-TTCGAGAAATTCGAAAACATAAAGAAA-3' (SEQ ID NO: 3762)

5'-GAAAUUCGAAAACAUAAAGAAAAga-3' (SEQ ID NO: 3060)
3'-CUCUUUAAGCUUUUGUAUUUCUUUUCU-5' (SEQ ID NO: 2357)

KRAS-787 Target: 5'-GAGAAATTCGAAAACATAAAGAAAAGA-3' (SEQ ID NO: 3763)

5'-UCGAAAACAUAAAGAAAAGAUGAgc-3' (SEQ ID NO: 3061)
3'-UAAGCUUUUGUAUUUCUUUUCUACUCG-5' (SEQ ID NO: 2358)

KRAS-792 Target: 5'-ATTCGAAAACATAAAGAAAAGATGAGC-3' (SEQ ID NO: 3764)

5'-CGAAAACAUAAAGAAAAGAUGAGca-3' (SEQ ID NO: 3062)
3'-AAGCUUUUGUAUUUCUUUUCUACUCGU-5' (SEQ ID NO: 2359)

KRAS-793 Target: 5'-TTCGAAAACATAAAGAAAAGATGAGCA-3' (SEQ ID NO: 3765)

5'-AAAGAUGGUAAAAAGAAGAAAAAga-3' (SEQ ID NO: 3063)
3'-CGUUUCUACCAUUUUUCUUCUUUUUCU-5' (SEQ ID NO: 2360)

KRAS-817 Target: 5'-GCAAAGATGGTAAAAAGAAGAAAAAGA-3' (SEQ ID NO: 3766)

5'-AAGAUGGUAAAAAGAAGAAAAAGaa-3' (SEQ ID NO: 3064)
3'-GUUUCUACCAUUUUUCUUCUUUUUCUU-5' (SEQ ID NO: 2361)

KRAS-818 Target: 5'-CAAAGATGGTAAAAAGAAGAAAAAGAA-3' (SEQ ID NO: 3767)

5'-GAUGGUAAAAAGAAGAAAAAGAAgt-3' (SEQ ID NO: 3065)
3'-UUCUACCAUUUUUCUUCUUUUUCUUCA-5' (SEQ ID NO: 2362)

KRAS-820 Target: 5'-AAGATGGTAAAAAGAAGAAAAAGAAGT-3' (SEQ ID NO: 3768)

5'-AUGGUAAAAAGAAGAAAAAGAAGtc-3' (SEQ ID NO: 3066)
3'-UCUACCAUUUUUCUUCUUUUUCUUCAG-5' (SEQ ID NO: 2363)

KRAS-821 Target: 5'-AGATGGTAAAAAGAAGAAAAAGAAGTC-3' (SEQ ID NO: 3769)

5'-AAAAAGAAGAAAAAGAAGUCAAAga-3' (SEQ ID NO: 3067)
3'-CAUUUUUCUUCUUUUUCUUCAGUUUCU-5' (SEQ ID NO: 2364)

KRAS-826 Target: 5'-GTAAAAAGAAGAAAAAGAAGTCAAAGA-3' (SEQ ID NO: 3770)

5'-AAAAGAAGAAAAAGAAGUCAAAGac-3' (SEQ ID NO: 3068)
3'-AUUUUUCUUCUUUUUCUUCAGUUUCUG-5' (SEQ ID NO: 2365)

KRAS-827 Target: 5'-TAAAAAGAAGAAAAAGAAGTCAAAGAC-3' (SEQ ID NO: 3771)

5'-AAAGAAGAAAAAGAAGUCAAAGAca-3' (SEQ ID NO: 3069)
3'-UUUUUCUUCUUUUUCUUCAGUUUCUGU-5' (SEQ ID NO: 2366)

KRAS-828 Target: 5'-AAAAAGAAGAAAAAGAAGTCAAAGACA-3' (SEQ ID NO: 3772)

5'-UCAAAGACAAAGUGUGUAAUUAUgt-3' (SEQ ID NO: 3070)
3'-UCAGUUUCUGUUUCACACAUUAAUACA-5' (SEQ ID NO: 2367)

KRAS-844 Target: 5'-AGTCAAAGACAAAGTGTGTAATTATGT-3' (SEQ ID NO: 3773)

5'-CAAAGACAAAGUGUGUAAUUAUGta-3' (SEQ ID NO: 3071)
3'-CAGUUUCUGUUUCACACAUUAAUACAU-5' (SEQ ID NO: 2368)

KRAS-845 Target: 5'-GTCAAAGACAAAGTGTGTAATTATGTA-3' (SEQ ID NO: 3774)

5'-GACAAAGUGUGUAAUUAUGUAAAta-3' (SEQ ID NO: 3072)
3'-UUCUGUUUCACACAUUAAUACAUUUAU-5' (SEQ ID NO: 2369)

KRAS-849 Target: 5'-AAGACAAAGTGTGTAATTATGTAAATA-3' (SEQ ID NO: 3775)

5'-CAAAGUGUGUAAUUAUGUAAAUAca-3' (SEQ ID NO: 3073)

3'-CUGUUUCACACAUUAAUACAUUUAUGU-5' (SEQ ID NO: 2370)

KRAS-851 Target: 5'-GACAAAGTGTGTAATTATGTAAATACA-3' (SEQ ID NO: 3776)

5'-GUGUGUAAUUAUGUAAAUACAAUtt-3' (SEQ ID NO: 3074)
3'-UUCACACAUUAAUACAUUUAUGUUAAA-5' (SEQ ID NO: 2371)

KRAS-855 Target: 5'-AAGTGTGTAATTATGTAAATACAATTT-3' (SEQ ID NO: 3777)

5'-GUGUAAUUAUGUAAAUACAAUUUgt-3' (SEQ ID NO: 3075)
3'-CACACAUUAAUACAUUUAUGUUAAACA-5' (SEQ ID NO: 2372)

KRAS-857 Target: 5'-GTGTGTAATTATGTAAATACAATTTGT-3' (SEQ ID NO: 3778)

5'-GUAAUUAUGUAAAUACAAUUUGUac-3' (SEQ ID NO: 3076)
3'-CACAUUAAUACAUUUAUGUUAAACAUG-5' (SEQ ID NO: 2373)

KRAS-859 Target: 5'-GTGTAATTATGTAAATACAATTTGTAC-3' (SEQ ID NO: 3779)

5'-UAAUUAUGUAAAUACAAUUUGUAct-3' (SEQ ID NO: 3077)
3'-ACAUUAAUACAUUUAUGUUAAACAUGA-5' (SEQ ID NO: 2374)

KRAS-860 Target: 5'-TGTAATTATGTAAATACAATTTGTACT-3' (SEQ ID NO: 3780)

5'-UAUGUAAAUACAAUUUGUACUUUtt-3' (SEQ ID NO: 3078)
3'-UAAUACAUUUAUGUUAAACAUGAAAAA-5' (SEQ ID NO: 2375)

KRAS-864 Target: 5'-ATTATGTAAATACAATTTGTACTTTTT-3' (SEQ ID NO: 3781)

5'-AUGUAAAUACAAUUUGUACUUUUtt-3' (SEQ ID NO: 3079)
3'-AAUACAUUUAUGUUAAACAUGAAAAAA-5' (SEQ ID NO: 2376)

KRAS-865 Target: 5'-TTATGTAAATACAATTTGTACTTTTTT-3' (SEQ ID NO: 3782)

5'-UGUAAAUACAAUUUGUACUUUUUtc-3' (SEQ ID NO: 3080)
3'-AUACAUUUAUGUUAAACAUGAAAAAAG-5' (SEQ ID NO: 2377)

KRAS-866 Target: 5'-TATGTAAATACAATTTGTACTTTTTTC-3' (SEQ ID NO: 3783)

5'-GUAAAUACAAUUUGUACUUUUUUct-3' (SEQ ID NO: 3081)
3'-UACAUUUAUGUUAAACAUGAAAAAAGA-5' (SEQ ID NO: 2378)

KRAS-867 Target: 5'-ATGTAAATACAATTTGTACTTTTTTCT-3' (SEQ ID NO: 3784)

5'-ACAAUUUGUACUUUUUUCUUAAGgc-3' (SEQ ID NO: 3082)
3'-UAUGUUAAACAUGAAAAAAGAAUUCCG-5' (SEQ ID NO: 2379)

KRAS-873 Target: 5'-ATACAATTTGTACTTTTTTCTTAAGGC-3' (SEQ ID NO: 3785)

5'-CAAUUUGUACUUUUUUCUUAAGGca-3' (SEQ ID NO: 3083)
3'-AUGUUAAACAUGAAAAAAGAAUUCCGU-5' (SEQ ID NO: 2380)

KRAS-874 Target: 5'-TACAATTTGTACTTTTTTCTTAAGGCA-3' (SEQ ID NO: 3786)

5'-UACUAGUACAAGUGGUAAUUUUUgt-3' (SEQ ID NO: 3084)
3'-GUAUGAUCAUGUUCACCAUUAAAAAACA-5' (SEQ ID NO: 2381)

KRAS-899 Target: 5'-CATACTAGTACAAGTGGTAATTTTTGT-3' (SEQ ID NO: 3787)

5'-ACUAGUACAAGUGGUAAUUUUUGta-3' (SEQ ID NO: 3085)
3'-UAUGAUCAUGUUCACCAUUAAAAACAU-5' (SEQ ID NO: 2382)

KRAS-900 Target: 5'-ATACTAGTACAAGTGGTAATTTTTGTA-3' (SEQ ID NO: 3788)

5'-ACAAGUGGUAAUUUUUGUACAUUac-3' (SEQ ID NO: 3086)
3'-CAUGUUCACCAUUAAAAACAUGUAAUG-5' (SEQ ID NO: 2383)

KRAS-906 Target: 5'-GTACAAGTGGTAATTTTTGTACATTAC-3' (SEQ ID NO: 3789)

5'-CAAGUGGUAAUUUUUGUACAUUAca-3' (SEQ ID NO: 3087)
3'-AUGUUCACCAUUAAAAACAUGUAAUGU-5' (SEQ ID NO: 2384)

KRAS-907 Target: 5'-TACAAGTGGTAATTTTTGTACATTACA-3' (SEQ ID NO: 3790)

5'-UAAUUUUUGUACAUUACACUAAAtt-3' (SEQ ID NO: 3088)
3'-CCAUUAAAAACAUGUAAUGUGAUUUAA-5' (SEQ ID NO: 2385)

KRAS-914 Target: 5'-GGTAATTTTTGTACATTACACTAAATT-3' (SEQ ID NO: 3791)

5'-AAUUUUUGUACAUUACACUAAAUta-3' (SEQ ID NO: 3089)
3'-CAUUAAAAACAUGUAAUGUGAUUUAAU-5' (SEQ ID NO: 2386)

KRAS-915 Target: 5'-GTAATTTTTGTACATTACACTAAATTA-3' (SEQ ID NO: 3792)

5'-AUUUUUGUACAUUACACUAAAUUat-3' (SEQ ID NO: 3090)
3'-AUUAAAAACAUGUAAUGUGAUUUAAUA-5' (SEQ ID NO: 2387)

KRAS-916 Target: 5'-TAATTTTTGTACATTACACTAAATTAT-3' (SEQ ID NO: 3793)

5'-UUUUUGUACAUUACACUAAAUUAtt-3' (SEQ ID NO: 3091)
3'-UUAAAAACAUGUAAUGUGAUUUAAUAA-5' (SEQ ID NO: 2388)

KRAS-917 Target: 5'-AATTTTTGTACATTACACTAAATTATT-3' (SEQ ID NO: 3794)

5'-UUUUGUACAUUACACUAAAUUAUta-3' (SEQ ID NO: 3092)
3'-UAAAAACAUGUAAUGUGAUUUAAUAAU-5' (SEQ ID NO: 2389)

KRAS-918 Target: 5'-ATTTTTGTACATTACACTAAATTATTA-3' (SEQ ID NO: 3795)

5'-CACUAAAUUAUUAGCAUUUGUUUta-3' (SEQ ID NO: 3093)
3'-AUGUGAUUUAAUAAUCGUAAACAAAAU-5' (SEQ ID NO: 2390)

KRAS-930 Target: 5'-TACACTAAATTATTAGCATTTGTTTTA-3' (SEQ ID NO: 3796)

5'-CUAAAUUAUUAGCAUUUGUUUUAgc-3' (SEQ ID NO: 3094)
3'-GUGAUUUAAUAAUCGUAAACAAAAUCG-5' (SEQ ID NO: 2391)

KRAS-932 Target: 5'-CACTAAATTATTAGCATTTGTTTTAGC-3' (SEQ ID NO: 3797)

5'-UAAAUUAUUAGCAUUUGUUUUAGca-3' (SEQ ID NO: 3095)
3'-UGAUUUAAUAAUCGUAAACAAAAUCGU-5' (SEQ ID NO: 2392)

KRAS-933 Target: 5'-ACTAAATTATTAGCATTTGTTTTAGCA-3' (SEQ ID NO: 3798)

5'-UAUUAGCAUUUGUUUUAGCAUUAcc-3' (SEQ ID NO: 3096)
3'-UAAUAAUCGUAAACAAAAUCGUAAUGG-5' (SEQ ID NO: 2393)

KRAS-938 Target: 5'-ATTATTAGCATTTGTTTTAGCATTACC-3' (SEQ ID NO: 3799)

5'-CAUUUGUUUUAGCAUUACCUAAUtt-3' (SEQ ID NO: 3097)
3'-UCGUAAACAAAAUCGUAAUGGAUUAAA-5' (SEQ ID NO: 2394)

KRAS-944 Target: 5'-AGCATTTGTTTTAGCATTACCTAATTT-3' (SEQ ID NO: 3800)

5'-AUUUGUUUUAGCAUUACCUAAUUtt-3' (SEQ ID NO: 3098)
3'-CGUAAACAAAAUCGUAAUGGAUUAAAA-5' (SEQ ID NO: 2395)

KRAS-945 Target: 5'-GCATTTGTTTTAGCATTACCTAATTTT-3' (SEQ ID NO: 3801)

5'-UUGUUUUAGCAUUACCUAAUUUUtt-3' (SEQ ID NO: 3099)
3'-UAAACAAAAUCGUAAUGGAUUAAAAAA-5' (SEQ ID NO: 2396)

KRAS-947 Target: 5'-ATTTGTTTTAGCATTACCTAATTTTTT-3' (SEQ ID NO: 3802)

5'-UGUUUUAGCAUUACCUAAUUUUUtt-3' (SEQ ID NO: 3100)
3'-AAACAAAAUCGUAAUGGAUUAAAAAAA-5' (SEQ ID NO: 2397)

KRAS-948 Target: 5'-TTTGTTTTAGCATTACCTAATTTTTTT-3' (SEQ ID NO: 3803)

5'-GUUUUAGCAUUACCUAAUUUUUUtc-3' (SEQ ID NO: 3101)
3'-AACAAAAUCGUAAUGGAUUAAAAAAAG-5' (SEQ ID NO: 2398)

KRAS-949 Target: 5'-TTGTTTTAGCATTACCTAATTTTTTTC-3' (SEQ ID NO: 3804)

5'-UUUUAGCAUUACCUAAUUUUUUUcc-3' (SEQ ID NO: 3102)
3'-ACAAAAUCGUAAUGGAUUAAAAAAAGG-5' (SEQ ID NO: 2399)

KRAS-950 Target: 5'-TGTTTTAGCATTACCTAATTTTTTTCC-3' (SEQ ID NO: 3805)

5'-GACUGUUAGCUUUUACCUUAAAUgc-3' (SEQ ID NO: 3103)
3'-GUCUGACAAUCGAAAAUGGAAUUUACG-5' (SEQ ID NO: 2400)

KRAS-986 Target: 5'-CAGACTGTTAGCTTTTACCTTAAATGC-3' (SEQ ID NO: 3806)

5'-ACUGUUAGCUUUUACCUUAAAUGct-3' (SEQ ID NO: 3104)
3'-UCUGACAAUCGAAAAUGGAAUUUACGA-5' (SEQ ID NO: 2401)

KRAS-987 Target: 5'-AGACTGTTAGCTTTTACCTTAAATGCT-3' (SEQ ID NO: 3807)

5'-AGCUUUUACCUUAAAUGCUUAUUtt-3' (SEQ ID NO: 3105)
3'-AAUCGAAAAUGGAAUUUACGAAUAAAA-5' (SEQ ID NO: 2402)

KRAS-993 Target: 5'-TTAGCTTTTACCTTAAATGCTTATTTT-3' (SEQ ID NO: 3808)

5'-GCUUUUACCUUAAAUGCUUAUUUta-3' (SEQ ID NO: 3106)
3'-AUCGAAAAUGGAAUUUACGAAUAAAAU-5' (SEQ ID NO: 2403)

KRAS-994 Target: 5'-TAGCTTTTACCTTAAATGCTTATTTTA-3' (SEQ ID NO: 3809)

5'-CUUUUACCUUAAAUGCUUAUUUUaa-3' (SEQ ID NO: 3107)
3'-UCGAAAAUGGAAUUUACGAAUAAAAUU-5' (SEQ ID NO: 2404)

KRAS-995 Target: 5'-AGCTTTTACCTTAAATGCTTATTTTAA-3' (SEQ ID NO: 3810)

5'-CCUUAAAUGCUUAUUUUAAAAUGac-3' (SEQ ID NO: 3108)
3'-AUGGAAUUUACGAAUAAAAUUUUACUG-5' (SEQ ID NO: 2405)

KRAS-1001 Target: 5'-TACCTTAAATGCTTATTTTAAAATGAC-3' (SEQ ID NO: 3811)

5'-CUUAAAUGCUUAUUUUAAAAUGAca-3' (SEQ ID NO: 3109)
3'-UGGAAUUUACGAAUAAAAUUUUACUGU-5' (SEQ ID NO: 2406)

KRAS-1002 Target: 5'-ACCTTAAATGCTTATTTTAAAATGACA-3' (SEQ ID NO: 3812)

5'-UGCUUAUUUUAAAAUGACAGUGGaa-3' (SEQ ID NO: 3110)
3'-UUACGAAUAAAAUUUUACUGUCACCUU-5' (SEQ ID NO: 2407)

KRAS-1008 Target: 5'-AATGCTTATTTTAAAATGACAGTGGAA-3' (SEQ ID NO: 3813)

5'-CUUAUUUUAAAAUGACAGUGGAAgt-3' (SEQ ID NO: 3111)
3'-ACGAAUAAAAUUUUACUGUCACCUUCA-5' (SEQ ID NO: 2408)

KRAS-1010 Target: 5'-TGCTTATTTTAAAATGACAGTGGAAGT-3' (SEQ ID NO: 3814)

5'-GUGGAAGUUUUUUUUUCCUCUAAgt-3' (SEQ ID NO: 3112)
3'-GUCACCUUCAAAAAAAAAGGAGAUUCA-5' (SEQ ID NO: 2409)

KRAS-1027 Target: 5'-CAGTGGAAGTTTTTTTTTCCTCTAAGT-3' (SEQ ID NO: 3815)

5'-GGAAGUUUUUUUUCCUCUAAGUgc-3' (SEQ ID NO: 3113)
3'-CACCUUCAAAAAAAAAGGAGAUUCACG-5' (SEQ ID NO: 2410)

KRAS-1029 Target: 5'-GTGGAAGTTTTTTTTTCCTCTAAGTGC-3' (SEQ ID NO: 3816)

5'-GAAGUUUUUUUUCCUCUAAGUGcc-3' (SEQ ID NO: 3114)
3'-ACCUUCAAAAAAAAAGGAGAUUCACGG-5' (SEQ ID NO: 2411)

KRAS-1030 Target: 5'-TGGAAGTTTTTTTTTCCTCTAAGTGCC-3' (SEQ ID NO: 3817)

5'-UUUUGGUUUUUGAACUAGCAAUGcc-3' (SEQ ID NO: 3115)
3'-UCAAAACCAAAAACUUGAUCGUUACGG-5' (SEQ ID NO: 2412)

KRAS-1068 Target: 5'-AGTTTTGGTTTTTGAACTAGCAATGCC-3' (SEQ ID NO: 3818)

5'-GCCUGUGAAAAAGAAACUGAAUAcc-3' (SEQ ID NO: 3116)
3'-UACGGACACUUUUUCUUUGACUUAUGG-5' (SEQ ID NO: 2413)

KRAS-1090 Target: 5'-ATGCCTGTGAAAAAGAAACTGAATACC-3' (SEQ ID NO: 3819)

5'-AAAAAGAAACUGAAUACCUAAGAtt-3' (SEQ ID NO: 3117)
3'-ACUUUUUCUUUGACUUAUGGAUUCUAA-5' (SEQ ID NO: 2414)

KRAS-1097 Target: 5'-TGAAAAAGAAACTGAATACCTAAGATT-3' (SEQ ID NO: 3820)

5'-AAAAGAAACUGAAUACCUAAGAUtt-3' (SEQ ID NO: 3118)
3'-CUUUUUCUUUGACUUAUGGAUUCUAAA-5' (SEQ ID NO: 2415)

KRAS-1098 Target: 5'-GAAAAAGAAACTGAATACCTAAGATTT-3' (SEQ ID NO: 3821)

5'-AACUGAAUACCUAAGAUUUCUGUct-3' (SEQ ID NO: 3119)
3'-CUUUGACUUAUGGAUUCUAAAGACAGA-5' (SEQ ID NO: 2416)

KRAS-1104 Target: 5'-GAAACTGAATACCTAAGATTTCTGTCT-3' (SEQ ID NO: 3822)

5'-UGCAGUUGAUUACUUCUUAUUUUtc-3' (SEQ ID NO: 3120)
3'-GUACGUCAACUAAUGAAGAAUAAAAAG-5' (SEQ ID NO: 2417)

KRAS-1145 Target: 5'-CATGCAGTTGATTACTTCTTATTTTTC-3' (SEQ ID NO: 3823)

5'-GCAGUUGAUUACUUCUUAUUUUUct-3' (SEQ ID NO: 3121)
3'-UACGUCAACUAAUGAAGAAUAAAAAGA-5' (SEQ ID NO: 2418)

KRAS-1146 Target: 5'-ATGCAGTTGATTACTTCTTATTTTTCT-3' (SEQ ID NO: 3824)

5'-UUGAUUACUUCUUAUUUUUCUUAcc-3' (SEQ ID NO: 3122)
3'-UCAACUAAUGAAGAAUAAAAAGAAUGG-5' (SEQ ID NO: 2419)

KRAS-1150 Target: 5'-AGTTGATTACTTCTTATTTTTCTTACC-3' (SEQ ID NO: 3825)

5'-UUCUUAUUUUUCUUACCAAUUGUga-3' (SEQ ID NO: 3123)
3'-UGAAGAAUAAAAAGAAUGGUUAACACU-5' (SEQ ID NO: 2420)

KRAS-1158 Target: 5'-ACTTCTTATTTTTCTTACCAATTGTGA-3' (SEQ ID NO: 3826)

5'-UCUUAUUUUUCUUACCAAUUGUGaa-3' (SEQ ID NO: 3124)
3'-GAAGAAUAAAAAGAAUGGUUAACACUU-5' (SEQ ID NO: 2421)

KRAS-1159 Target: 5'-CTTCTTATTTTTCTTACCAATTGTGAA-3' (SEQ ID NO: 3827)

5'-CUUAUUUUUCUUACCAAUUGUGAat-3' (SEQ ID NO: 3125)
3'-AAGAAUAAAAAGAAUGGUUAACACUUA-5' (SEQ ID NO: 2422)

KRAS-1160 Target: 5'-TTCTTATTTTTCTTACCAATTGTGAAT-3' (SEQ ID NO: 3828)

5'-AUGUUGGUGUGAAACAAAUUAAUga-3' (SEQ ID NO: 3126)

3'-CUUACAACCACACUUUGUUUAAUUACU-5' (SEQ ID NO: 2423)

KRAS-1183 Target: 5'-GAATGTTGGTGTGAAACAAATTAATGA-3' (SEQ ID NO: 3829)

5'-UUGGUGUGAAACAAAUUAAUGAAgc-3' (SEQ ID NO: 3127)
3'-ACAACCACACUUUGUUUAAUUACUUCG-5' (SEQ ID NO: 2424)

KRAS-1186 Target: 5'-TGTTGGTGTGAAACAAATTAATGAAGC-3' (SEQ ID NO: 3830)

5'-UGGUGUGAAACAAAUUAAUGAAGct-3' (SEQ ID NO: 3128)
3'-CAACCACACUUUGUUUAAUUACUUCGA-5' (SEQ ID NO: 2425)

KRAS-1187 Target: 5'-GTTGGTGTGAAACAAATTAATGAAGCT-3' (SEQ ID NO: 3831)

5'-AACAAAUUAAUGAAGCUUUUGAAtc-3' (SEQ ID NO: 3129)
3'-CUUUGUUUAAUUACUUCGAAAACUUAG-5' (SEQ ID NO: 2426)

KRAS-1195 Target: 5'-GAAACAAATTAATGAAGCTTTTGAATC-3' (SEQ ID NO: 3832)

5'-ACAAAUUAAUGAAGCUUUUGAAUca-3' (SEQ ID NO: 3130)
3'-UUUGUUUAAUUACUUCGAAAACUUAGU-5' (SEQ ID NO: 2427)

KRAS-1196 Target: 5'-AAACAAATTAATGAAGCTTTTGAATCA-3' (SEQ ID NO: 3833)

5'-UCUGUGUUUUAUCUAGUCACAUAaa-3' (SEQ ID NO: 3131)
3'-UAAGACACAAAAUAGAUCAGUGUAUUU-5' (SEQ ID NO: 2428)

KRAS-1228 Target: 5'-ATTCTGTGTTTTATCTAGTCACATAAA-3' (SEQ ID NO: 3834)

5'-CUGUGUUUUAUCUAGUCACAUAAat-3' (SEQ ID NO: 3132)
3'-AAGACACAAAAUAGAUCAGUGUAUUUA-5' (SEQ ID NO: 2429)

KRAS-1229 Target: 5'-TTCTGTGTTTTATCTAGTCACATAAAT-3' (SEQ ID NO: 3835)

5'-UGUUUUAUCUAGUCACAUAAAUGga-3' (SEQ ID NO: 3133)
3'-ACACAAAAUAGAUCAGUGUAUUUACCU-5' (SEQ ID NO: 2430)

KRAS-1232 Target: 5'-TGTGTTTTATCTAGTCACATAAATGGA-3' (SEQ ID NO: 3836)

5'-GUUUUAUCUAGUCACAUAAAUGGat-3' (SEQ ID NO: 3134)
3'-CACAAAAUAGAUCAGUGUAUUUACCUA-5' (SEQ ID NO: 2431)

KRAS-1233 Target: 5'-GTGTTTTATCTAGTCACATAAATGGAT-3' (SEQ ID NO: 3837)

5'-AUCUAGUCACAUAAAUGGAUUAAtt-3' (SEQ ID NO: 3135)
3'-AAUAGAUCAGUGUAUUUACCUAAUUAA-5' (SEQ ID NO: 2432)

KRAS-1238 Target: 5'-TTATCTAGTCACATAAATGGATTAATT-3' (SEQ ID NO: 3838)

5'-UCUAGUCACAUAAAUGGAUUAAUta-3' (SEQ ID NO: 3136)
3'-AUAGAUCAGUGUAUUUACCUAAUUAAU-5' (SEQ ID NO: 2433)

KRAS-1239 Target: 5'-TATCTAGTCACATAAATGGATTAATTA-3' (SEQ ID NO: 3839)

5'-CAUAAAUGGAUUAAUUACUAAUUtc-3' (SEQ ID NO: 3137)
3'-GUGUAUUUACCUAAUUAAUGAUUAAAG-5' (SEQ ID NO: 2434)

KRAS-1247 Target: 5'-CACATAAATGGATTAATTACTAATTTC-3' (SEQ ID NO: 3840)

5'-AUAAAUGGAUUAAUUACUAAUUUca-3' (SEQ ID NO: 3138)
3'-UGUAUUUACCUAAUUAAUGAUUAAAGU-5' (SEQ ID NO: 2435)

KRAS-1248 Target: 5'-ACATAAATGGATTAATTACTAATTTCA-3' (SEQ ID NO: 3841)

5'-UGGAUUAAUUACUAAUUUCAGUUga-3' (SEQ ID NO: 3139)
3'-UUACCUAAUUAAUGAUUAAAGUCAACU-5' (SEQ ID NO: 2436)

KRAS-1253 Target: 5'-AATGGATTAATTACTAATTTCAGTTGA-3' (SEQ ID NO: 3842)

5'-GAUUAAUUACUAAUUUCAGUUGAga-3' (SEQ ID NO: 3140)
3'-ACCUAAUUAAUGAUUAAAGUCAACUCU-5' (SEQ ID NO: 2437)

KRAS-1255 Target: 5'-TGGATTAATTACTAATTTCAGTTGAGA-3' (SEQ ID NO: 3843)

5'-AUUAAUUACUAAUUUCAGUUGAGac-3' (SEQ ID NO: 3141)
3'-CCUAAUUAAUGAUUAAAGUCAACUCUG-5' (SEQ ID NO: 2438)

KRAS-1256 Target: 5'-GGATTAATTACTAATTTCAGTTGAGAC-3' (SEQ ID NO: 3844)

5'-UUAAUUACUAAUUUCAGUUGAGAcc-3' (SEQ ID NO: 3142)
3'-CUAAUUAAUGAUUAAAGUCAACUCUGG-5' (SEQ ID NO: 2439)

KRAS-1257 Target: 5'-GATTAATTACTAATTTCAGTTGAGACC-3' (SEQ ID NO: 3845)

5'-UAAUUGGUUUUUACUGAAACAUUga-3' (SEQ ID NO: 3143)
3'-AGAUUAACCAAAAAUGACUUUGUAACU-5' (SEQ ID NO: 2440)

KRAS-1285 Target: 5'-TCTAATTGGTTTTTACTGAAACATTGA-3' (SEQ ID NO: 3846)

5'-UGGUUUUUACUGAAACAUUGAGGga-3' (SEQ ID NO: 3144)
3'-UAACCAAAAAUGACUUUGUAACUCCCU-5' (SEQ ID NO: 2441)

KRAS-1289 Target: 5'-ATTGGTTTTTACTGAAACATTGAGGGA-3' (SEQ ID NO: 3847)

5'-GGUUUUUACUGAAACAUUGAGGGaa-3' (SEQ ID NO: 3145)
3'-AACCAAAAAUGACUUUGUAACUCCCUU-5' (SEQ ID NO: 2442)

KRAS-1290 Target: 5'-TTGGTTTTTACTGAAACATTGAGGGAA-3' (SEQ ID NO: 3848)

5'-AUUGAGGGAACACAAAUUUAUGGgc-3' (SEQ ID NO: 3146)
3'-UGUAACUCCCUUGUGUUUAAAUACCCG-5' (SEQ ID NO: 2443)

KRAS-1305 Target: 5'-ACATTGAGGGAACACAAATTTATGGGC-3' (SEQ ID NO: 3849)

5'-UUGAGGGAACACAAAUUUAUGGGct-3' (SEQ ID NO: 3147)
3'-GUAACUCCCUUGUGUUUAAAUACCCGA-5' (SEQ ID NO: 2444)

KRAS-1306 Target: 5'-CATTGAGGGAACACAAATTTATGGGCT-3' (SEQ ID NO: 3850)

5'-UGAUGAAUGUAAAGUUACACUGUtc-3' (SEQ ID NO: 3148)
3'-GGACUACUUACAUUUCAAUGUGACAAG-5' (SEQ ID NO: 2445)

KRAS-1379 Target: 5'-CCTGATGAATGTAAAGTTACACTGTTC-3' (SEQ ID NO: 3851)

5'-GAUGAAUGUAAAGUUACACUGUUca-3' (SEQ ID NO: 3149)
3'-GACUACUUACAUUUCAAUGUGACAAGU-5' (SEQ ID NO: 2446)

KRAS-1380 Target: 5'-CTGATGAATGTAAAGTTACACTGTTCA-3' (SEQ ID NO: 3852)

5'-CCAAAAUAUUAUAUUUUUUCUAUaa-3' (SEQ ID NO: 3150)
3'-GGGGUUUUAUAAUAUAAAAAAGAUAUU-5' (SEQ ID NO: 2447)

KRAS-1452 Target: 5'-CCCCAAAATATTATATTTTTTCTATAA-3' (SEQ ID NO: 3853)

5'-CAAAAUAUUAUAUUUUUUCUAUAaa-3' (SEQ ID NO: 3151)
3'-GGGUUUUAUAAUAUAAAAAAGAUAUUU-5' (SEQ ID NO: 2448)

KRAS-1453 Target: 5'-CCCAAAATATTATATTTTTTCTATAAA-3' (SEQ ID NO: 3854)

5'-AAAAUAUUAUAUUUUUUCUAUAAaa-3' (SEQ ID NO: 3152)
3'-GGUUUUAUAAUAUAAAAAAGAUAUUUU-5' (SEQ ID NO: 2449)

KRAS-1454 Target: 5'-CCAAAATATTATATTTTTTCTATAAAA-3' (SEQ ID NO: 3855)

5'-AAAUAUUAUAUUUUUUCUAUAAAaa-3' (SEQ ID NO: 3153)
3'-GUUUUAUAAUAUAAAAAAGAUAUUUU-5' (SEQ ID NO: 2450)

KRAS-1455 Target: 5'-CAAAATATTATATTTTTTCTATAAAAA-3' (SEQ ID NO: 3856)

5'-AUAUUAUAUUUUUUCUAUAAAAAga-3' (SEQ ID NO: 3154)
3'-UUUAUAAUAUAAAAAAGAUAUUUUUCU-5' (SEQ ID NO: 2451)

KRAS-1457 Target: 5'-AAATATTATATTTTTTCTATAAAAAGA-3' (SEQ ID NO: 3857)

5'-UAUUAUAUUUUUUCUAUAAAAAGaa-3' (SEQ ID NO: 3155)
3'-UUAUAAUAUAAAAAAGAUAUUUUUCUU-5' (SEQ ID NO: 2452)

KRAS-1458 Target: 5'-AATATTATATTTTTTCTATAAAAAGAA-3' (SEQ ID NO: 3858)

5'-AUUAUAUUUUUUCUAUAAAAAGAaa-3' (SEQ ID NO: 3156)
3'-UAUAAUAUAAAAAAGAUAUUUUUCUUU-5' (SEQ ID NO: 2453)

KRAS-1459 Target: 5'-ATATTATATTTTTTCTATAAAAAGAAA-3' (SEQ ID NO: 3859)

5'-UUAUAUUUUUUCUAUAAAAAGAAaa-3' (SEQ ID NO: 3157)
3'-AUAAUAUAAAAAAGAUAUUUUUCUUUU-5' (SEQ ID NO: 2454)

KRAS-1460 Target: 5'-TATTATATTTTTTCTATAAAAAGAAAA-3' (SEQ ID NO: 3860)

5'-UAUAUUUUUUCUAUAAAAAGAAAaa-3' (SEQ ID NO: 3158)
3'-UAAUAUAAAAAAGAUAUUUUUCUUUUU-5' (SEQ ID NO: 2455)

KRAS-1461 Target: 5'-ATTATATTTTTTCTATAAAAAGAAAAA-3' (SEQ ID NO: 3861)

5'-AUAUUUUUUCUAUAAAAAGAAAAaa-3' (SEQ ID NO: 3159)
3'-AAUAUAAAAAAGAUAUUUUUCUUUUUU-5' (SEQ ID NO: 2456)

KRAS-1462 Target: 5'-TTATATTTTTTCTATAAAAAGAAAAAA-3' (SEQ ID NO: 3862)

5'-UAUUUUUUCUAUAAAAAGAAAAAaa-3' (SEQ ID NO: 3160)
3'-AUAUAAAAAAGAUAUUUUUCUUUUUUU-5' (SEQ ID NO: 2457)

KRAS-1463 Target: 5'-TATATTTTTTCTATAAAAAGAAAAAAA-3' (SEQ ID NO: 3863)

5'-AUUUUUUCUAUAAAAAGAAAAAAat-3' (SEQ ID NO: 3161)
3'-UAUAAAAAAGAUAUUUUUCUUUUUUUA-5' (SEQ ID NO: 2458)

KRAS-1464 Target: 5'-ATATTTTTTCTATAAAAAGAAAAAAAT-3' (SEQ ID NO: 3864)

5'-UUCUAUAAAAAGAAAAAAAUGGAaa-3' (SEQ ID NO: 3162)
3'-AAAAGAUAUUUUUCUUUUUUUACCUUU-5' (SEQ ID NO: 2459)

KRAS-1469 Target: 5'-TTTTCTATAAAAAGAAAAAAATGGAAA-3' (SEQ ID NO: 3865)

5'-UCUAUAAAAAGAAAAAAAUGGAAaa-3' (SEQ ID NO: 3163)
3'-AAAGAUAUUUUUCUUUUUUUACCUUUU-5' (SEQ ID NO: 2460)

KRAS-1470 Target: 5'-TTTCTATAAAAAGAAAAAAATGGAAAA-3' (SEQ ID NO: 3866)

5'-UAUAAAAAGAAAAAAAUGGAAAAaa-3' (SEQ ID NO: 3164)
3'-AGAUAUUUUUCUUUUUUUACCUUUUUU-5' (SEQ ID NO: 2461)

KRAS-1472 Target: 5'-TCTATAAAAAGAAAAAAATGGAAAAAA-3' (SEQ ID NO: 3867)

5'-AUAAAAAGAAAAAAAUGGAAAAAaa-3' (SEQ ID NO: 3165)
3'-GAUAUUUUUCUUUUUUUACCUUUUUUU-5' (SEQ ID NO: 2462)

KRAS-1473 Target: 5'-CTATAAAAAGAAAAAAATGGAAAAAAA-3' (SEQ ID NO: 3868)

5'-UAAAAAGAAAAAAAUGGAAAAAAat-3' (SEQ ID NO: 3166)
3'-AUAUUUUUCUUUUUUUACCUUUUUUUA-5' (SEQ ID NO: 2463)

KRAS-1474 Target: 5'-TATAAAAAGAAAAAAATGGAAAAAAAT-3' (SEQ ID NO: 3869)

5'-AAAAAGAAAAAAAUGGAAAAAAAtt-3' (SEQ ID NO: 3167)
3'-UAUUUUUCUUUUUUUACCUUUUUUUAA-5' (SEQ ID NO: 2464)

KRAS-1475 Target: 5'-ATAAAAAGAAAAAAATGGAAAAAAATT-3' (SEQ ID NO: 3870)

5'-AAAAGAAAAAAAUGGAAAAAAAUta-3' (SEQ ID NO: 3168)
3'-AUUUUUCUUUUUUUACCUUUUUUUAAU-5' (SEQ ID NO: 2465)

KRAS-1476 Target: 5'-TAAAAAGAAAAAAATGGAAAAAAATTA-3' (SEQ ID NO: 3871)

5'-AAAGAAAAAAAUGGAAAAAAAUUac-3' (SEQ ID NO: 3169)
3'-UUUUUCUUUUUUUACCUUUUUUUAAUG-5' (SEQ ID NO: 2466)

KRAS-1477 Target: 5'-AAAAAGAAAAAAATGGAAAAAAATTAC-3' (SEQ ID NO: 3872)

5'-AAGAAAAAAAUGGAAAAAAAUUAca-3' (SEQ ID NO: 3170)
3'-UUUUCUUUUUUUACCUUUUUUUAAUGU-5' (SEQ ID NO: 2467)

KRAS-1478 Target: 5'-AAAAGAAAAAAATGGAAAAAAATTACA-3' (SEQ ID NO: 3873)

5'-AAAAAAUGGAAAAAAAUUACAAGgc-3' (SEQ ID NO: 3171)
3'-CUUUUUUUACCUUUUUUUAAUGUUCCG-5' (SEQ ID NO: 2468)

KRAS-1482 Target: 5'-GAAAAAAATGGAAAAAAATTACAAGGC-3' (SEQ ID NO: 3874)

5'-AAAAAUGGAAAAAAAUUACAAGGca-3' (SEQ ID NO: 3172)
3'-UUUUUUUACCUUUUUUUAAUGUUCCGU-5' (SEQ ID NO: 2469)

KRAS-1483 Target: 5'-AAAAAAATGGAAAAAAATTACAAGGCA-3' (SEQ ID NO: 3875)

5'-UGGAAAAAAAUUACAAGGCAAUGga-3' (SEQ ID NO: 3173)
3'-UUACCUUUUUUUAAUGUUCCGUUACCU-5' (SEQ ID NO: 2470)

KRAS-1488 Target: 5'-AATGGAAAAAAATTACAAGGCAATGGA-3' (SEQ ID NO: 3876)

5'-GGAAAAAAAUUACAAGGCAAUGGaa-3' (SEQ ID NO: 3174)
3'-UACCUUUUUUUAAUGUUCCGUUACCUU-5' (SEQ ID NO: 2471)

KRAS-1489 Target: 5'-ATGGAAAAAAATTACAAGGCAATGGAA-3' (SEQ ID NO: 3877)

5'-GAAAAAAAUUACAAGGCAAUGGAaa-3' (SEQ ID NO: 3175)
3'-ACCUUUUUUUAAUGUUCCGUUACCUUU-5' (SEQ ID NO: 2472)

KRAS-1490 Target: 5'-TGGAAAAAAATTACAAGGCAATGGAAA-3' (SEQ ID NO: 3878)

5'-GCCAUUUCCUUUUCACAUUAGAUaa-3' (SEQ ID NO: 3176)
3'-UCCGGUAAAGGAAAAGUGUAAUCUAUU-5' (SEQ ID NO: 2473)

KRAS-1525 Target: 5'-AGGCCATTTCCTTTTCACATTAGATAA-3' (SEQ ID NO: 3879)

5'-UCCUUUUCACAUUAGAUAAAUUAct-3' (SEQ ID NO: 3177)
3'-AAAGGAAAAGUGUAAUCUAUUUAAUGA-5' (SEQ ID NO: 2474)

KRAS-1531 Target: 5'-TTTCCTTTTCACATTAGATAAATTACT-3' (SEQ ID NO: 3880)

5'-CACAUUAGAUAAAUUACUAUAAAga-3' (SEQ ID NO: 3178)
3'-AAGUGUAAUCUAUUUAAUGAUAUUUCU-5' (SEQ ID NO: 2475)

KRAS-1538 Target: 5'-TTCACATTAGATAAATTACTATAAAGA-3' (SEQ ID NO: 3881)

5'-ACAUUAGAUAAAUUACUAUAAAGac-3' (SEQ ID NO: 3179)

3'-AGUGUAAUCUAUUUAAUGAUAUUUCUG-5' (SEQ ID NO: 2476)

KRAS-1539 Target: 5'-TCACATTAGATAAATTACTATAAAGAC-3' (SEQ ID NO: 3882)

5'-CAUUAGAUAAAUUACUAUAAAGAct-3' (SEQ ID NO: 3180)
3'-GUGUAAUCUAUUUAAUGAUAUUUCUGA-5' (SEQ ID NO: 2477)

KRAS-1540 Target: 5'-CACATTAGATAAATTACTATAAAGACT-3' (SEQ ID NO: 3883)

5'-AGUAUGAAAUGGGGAUUAUUAUAgc-3' (SEQ ID NO: 3181)
3'-GGUCAUACUUUACCCCUAAUAAUAUCG-5' (SEQ ID NO: 2478)

KRAS-1595 Target: 5'-CCAGTATGAAATGGGGATTATTATAGC-3' (SEQ ID NO: 3884)

5'-UGGGGAUUAUUAUAGCAACCAUUtt-3' (SEQ ID NO: 3182)
3'-UUACCCCUAAUAAUAUCGUUGGUAAAA-5' (SEQ ID NO: 2479)

KRAS-1604 Target: 5'-AATGGGGATTATTATAGCAACCATTTT-3' (SEQ ID NO: 3885)

5'-GGCUAUAUUUACAUGCUACUAAAtt-3' (SEQ ID NO: 3183)
3'-CCCCGAUAUAAAUGUACGAUGAUUUAA-5' (SEQ ID NO: 2480)

KRAS-1631 Target: 5'-GGGGCTATATTTACATGCTACTAAATT-3' (SEQ ID NO: 3886)

5'-GCUAUAUUUACAUGCUACUAAAUtt-3' (SEQ ID NO: 3184)
3'-CCCGAUAUAAAUGUACGAUGAUUUAAA-5' (SEQ ID NO: 2481)

KRAS-1632 Target: 5'-GGGCTATATTTACATGCTACTAAATTT-3' (SEQ ID NO: 3887)

5'-CUAUAUUUACAUGCUACUAAAUUtt-3' (SEQ ID NO: 3185)
3'-CCGAUAUAAAUGUACGAUGAUUUAAAA-5' (SEQ ID NO: 2482)

KRAS-1633 Target: 5'-GGCTATATTTACATGCTACTAAATTTT-3' (SEQ ID NO: 3888)

5'-UAUAUUUACAUGCUACUAAAUUUtt-3' (SEQ ID NO: 3186)
3'-CGAUAUAAAUGUACGAUGAUUUAAAAA-5' (SEQ ID NO: 2483)

KRAS-1634 Target: 5'-GCTATATTTACATGCTACTAAATTTTT-3' (SEQ ID NO: 3889)

5'-AUAUUUACAUGCUACUAAAUUUUta-3' (SEQ ID NO: 3187)
3'-GAUAUAAAUGUACGAUGAUUUAAAAAU-5' (SEQ ID NO: 2484)

KRAS-1635 Target: 5'-CTATATTTACATGCTACTAAATTTTTA-3' (SEQ ID NO: 3890)

5'-UACAUGCUACUAAAUUUUUAUAAta-3' (SEQ ID NO: 3188)
3'-AAAUGUACGAUGAUUUAAAAAUAUUAU-5' (SEQ ID NO: 2485)

KRAS-1640 Target: 5'-TTTACATGCTACTAAATTTTTATAATA-3' (SEQ ID NO: 3891)

5'-UACUAAAUUUUUAUAAUAAUUGAaa-3' (SEQ ID NO: 3189)
3'-CGAUGAUUUAAAAAUAUUAUUAACUUU-5' (SEQ ID NO: 2486)

KRAS-1647 Target: 5'-GCTACTAAATTTTTATAATAATTGAAA-3' (SEQ ID NO: 3892)

5'-ACUAAAUUUUUAUAAUAAUUGAAaa-3' (SEQ ID NO: 3190)
3'-GAUGAUUUAAAAAUAUUAUUAACUUUU-5' (SEQ ID NO: 2487)

KRAS-1648 Target: 5'-CTACTAAATTTTTATAATAATTGAAAA-3' (SEQ ID NO: 3893)

5'-UAAAUUUUUAUAAUAAUUGAAAAga-3' (SEQ ID NO: 3191)
3'-UGAUUUAAAAAUAUUAUUAACUUUUCU-5' (SEQ ID NO: 2488)

KRAS-1650 Target: 5'-ACTAAATTTTTATAATAATTGAAAAGA-3' (SEQ ID NO: 3894)

5'-AAAUUUUUAUAAUAAUUGAAAAGat-3' (SEQ ID NO: 3192)
3'-GAUUUAAAAAUAUUAUUAACUUUUCUA-5' (SEQ ID NO: 2489)

KRAS-1651 Target: 5'-CTAAATTTTTATAATAATTGAAAAGAT-3' (SEQ ID NO: 3895)

5'-AAUUUUUAUAAUAAUUGAAAAGAtt-3' (SEQ ID NO: 3193)
3'-AUUUAAAAAAUAUUAUUAACUUUUCUAA-5' (SEQ ID NO: 2490)

KRAS-1652 Target: 5'-TAAATTTTTATAATAATTGAAAAGATT-3' (SEQ ID NO: 3896)

5'-AUUUUUAUAAUAAUUGAAAAGAUtt-3' (SEQ ID NO: 3194)
3'-UUUAAAAAAUAUUAUUAACUUUUCUAAA-5' (SEQ ID NO: 2491)

KRAS-1653 Target: 5'-AAATTTTTATAATAATTGAAAAGATTT-3' (SEQ ID NO: 3897)

5'-UUUUUAUAAUAAUUGAAAAGAUUtt-3' (SEQ ID NO: 3195)
3'-UUAAAAAAUAUUAUUAACUUUUCUAAAA-5' (SEQ ID NO: 2492)

KRAS-1654 Target: 5'-AATTTTTATAATAATTGAAAAGATTTT-3' (SEQ ID NO: 3898)

5'-UUUUAUAAUAAUUGAAAAGAUUUta-3' (SEQ ID NO: 3196)
3'-UAAAAAUAUUAUUAACUUUUCUAAAAU-5' (SEQ ID NO: 2493)

KRAS-1655 Target: 5'-ATTTTTATAATAATTGAAAAGATTTTA-3' (SEQ ID NO: 3899)

5'-UUUAUAAUAAUUGAAAAGAUUUUaa-3' (SEQ ID NO: 3197)
3'-AAAAAUAUUAUUAACUUUUCUAAAAUU-5' (SEQ ID NO: 2494)

KRAS-1656 Target: 5'-TTTTTATAATAATTGAAAAGATTTTAA-3' (SEQ ID NO: 3900)

5'-UUAUAAUAAUUGAAAAGAUUUUAac-3' (SEQ ID NO: 3198)
3'-AAAAUAUUAUUAACUUUUCUAAAAUUG-5' (SEQ ID NO: 2495)

KRAS-1657 Target: 5'-TTTTATAATAATTGAAAAGATTTTAAC-3' (SEQ ID NO: 3901)

5'-UAUAAUAAUUGAAAAGAUUUUAAca-3' (SEQ ID NO: 3199)
3'-AAAUAUUAUUAACUUUUCUAAAAUUGU-5' (SEQ ID NO: 2496)

KRAS-1658 Target: 5'-TTTATAATAATTGAAAAGATTTTAACA-3' (SEQ ID NO: 3902)

5'-AUAAUUGAAAAGAUUUUAACAAGta-3' (SEQ ID NO: 3200)
3'-AUUAUUAACUUUUCUAAAAUUGUUCAU-5' (SEQ ID NO: 2497)

KRAS-1662 Target: 5'-TAATAATTGAAAAGATTTTAACAAGTA-3' (SEQ ID NO: 3903)

5'-UAAUUGAAAAGAUUUUAACAAGUat-3' (SEQ ID NO: 3201)
3'-UUAUUAACUUUUCUAAAAUUGUUCAUA-5' (SEQ ID NO: 2498)

KRAS-1663 Target: 5'-AATAATTGAAAAGATTTTAACAAGTAT-3' (SEQ ID NO: 3904)

5'-AUUGAAAAGAUUUUAACAAGUAUaa-3' (SEQ ID NO: 3202)
3'-AUUAACUUUUCUAAAAUUGUUCAUAUU-5' (SEQ ID NO: 2499)

KRAS-1665 Target: 5'-TAATTGAAAAGATTTTAACAAGTATAA-3' (SEQ ID NO: 3905)

5'-UUGAAAAGAUUUUAACAAGUAUAaa-3' (SEQ ID NO: 3203)
3'-UUAACUUUUCUAAAAUUGUUCAUAUUU-5' (SEQ ID NO: 2500)

KRAS-1666 Target: 5'-AATTGAAAAGATTTTAACAAGTATAAA-3' (SEQ ID NO: 3906)

5'-UGAAAAGAUUUUAACAAGUAUAAaa-3' (SEQ ID NO: 3204)
3'-UAACUUUUCUAAAAUUGUUCAUAUUUU-5' (SEQ ID NO: 2501)

KRAS-1667 Target: 5'-ATTGAAAAGATTTTAACAAGTATAAAA-3' (SEQ ID NO: 3907)

5'-GAAAAGAUUUUAACAAGUAUAAAaa-3' (SEQ ID NO: 3205)
3'-AACUUUUCUAAAAUUGUUCAUAUUUUU-5' (SEQ ID NO: 2502)

KRAS-1668 Target: 5'-TTGAAAAGATTTTAACAAGTATAAAAA-3' (SEQ ID NO: 3908)

5'-AAAAGAUUUUAACAAGUAUAAAAaa-3' (SEQ ID NO: 3206)
3'-ACUUUUCUAAAAUUGUUCAUAUUUUUU-5' (SEQ ID NO: 2503)

KRAS-1669 Target: 5'-TGAAAAGATTTTAACAAGTATAAAAAA-3' (SEQ ID NO: 3909)

5'-AAAGAUUUUAACAAGUAUAAAAAat-3' (SEQ ID NO: 3207)
3'-CUUUUCUAAAAUUGUUCAUAUUUUUUA-5' (SEQ ID NO: 2504)

KRAS-1670 Target: 5'-GAAAAGATTTTAACAAGTATAAAAAAT-3' (SEQ ID NO: 3910)

5'-AAGAUUUUAACAAGUAUAAAAAAtt-3' (SEQ ID NO: 3208)
3'-UUUUCUAAAAUUGUUCAUAUUUUUUAA-5' (SEQ ID NO: 2505)

KRAS-1671 Target: 5'-AAAAGATTTTAACAAGTATAAAAAATT-3' (SEQ ID NO: 3911)

5'-AGAUUUUAACAAGUAUAAAAAAUtc-3' (SEQ ID NO: 3209)
3'-UUUCUAAAAUUGUUCAUAUUUUUUAAG-5' (SEQ ID NO: 2506)

KRAS-1672 Target: 5'-AAAGATTTTAACAAGTATAAAAAATTC-3' (SEQ ID NO: 3912)

5'-GAUUUUAACAAGUAUAAAAAAUUct-3' (SEQ ID NO: 3210)
3'-UUCUAAAAUUGUUCAUAUUUUUUAAGA-5' (SEQ ID NO: 2507)

KRAS-1673 Target: 5'-AAGATTTTAACAAGTATAAAAAATTCT-3' (SEQ ID NO: 3913)

5'-ACAAGUAUAAAAAAUUCUCAUAGga-3' (SEQ ID NO: 3211)
3'-AUUGUUCAUAUUUUUUAAGAGUAUCCU-5' (SEQ ID NO: 2508)

KRAS-1680 Target: 5'-TAACAAGTATAAAAAATTCTCATAGGA-3' (SEQ ID NO: 3914)

5'-CAAGUAUAAAAAAUUCUCAUAGGaa-3' (SEQ ID NO: 3212)
3'-UUGUUCAUAUUUUUUAAGAGUAUCCUU-5' (SEQ ID NO: 2509)

KRAS-1681 Target: 5'-AACAAGTATAAAAAATTCTCATAGGAA-3' (SEQ ID NO: 3915)

5'-AAGUAUAAAAAAUUCUCAUAGGAat-3' (SEQ ID NO: 3213)
3'-UGUUCAUAUUUUUUAAGAGUAUCCUUA-5' (SEQ ID NO: 2510)

KRAS-1682 Target: 5'-ACAAGTATAAAAAATTCTCATAGGAAT-3' (SEQ ID NO: 3916)

5'-AGUAUAAAAAAUUCUCAUAGGAAtt-3' (SEQ ID NO: 3214)
3'-GUUCAUAUUUUUUAAGAGUAUCCUUAA-5' (SEQ ID NO: 2511)

KRAS-1683 Target: 5'-CAAGTATAAAAAATTCTCATAGGAATT-3' (SEQ ID NO: 3917)

5'-GUAUAAAAAAUUCUCAUAGGAAUta-3' (SEQ ID NO: 3215)
3'-UUCAUAUUUUUUAAGAGUAUCCUUAAU-5' (SEQ ID NO: 2512)

KRAS-1684 Target: 5'-AAGTATAAAAAATTCTCATAGGAATTA-3' (SEQ ID NO: 3918)

5'-UAUAAAAAAUUCUCAUAGGAAUUaa-3' (SEQ ID NO: 3216)
3'-UCAUAUUUUUUAAGAGUAUCCUUAAUU-5' (SEQ ID NO: 2513)

KRAS-1685 Target: 5'-AGTATAAAAAATTCTCATAGGAATTAA-3' (SEQ ID NO: 3919)

5'-AUAAAAAAUUCUCAUAGGAAUUAaa-3' (SEQ ID NO: 3217)
3'-CAUAUUUUUUAAGAGUAUCCUUAAUUU-5' (SEQ ID NO: 2514)

KRAS-1686 Target: 5'-GTATAAAAAATTCTCATAGGAATTAAA-3' (SEQ ID NO: 3920)

5'-UAAAAAAUUCUCAUAGGAAUUAAat-3' (SEQ ID NO: 3218)
3'-AUAUUUUUUAAGAGUAUCCUUAAUUUA-5' (SEQ ID NO: 2515)

KRAS-1687 Target: 5'-TATAAAAAATTCTCATAGGAATTAAAT-3' (SEQ ID NO: 3921)

5'-AAAAAUUCUCAUAGGAAUUAAAUgt-3' (SEQ ID NO: 3219)
3'-AUUUUUUAAGAGUAUCCUUAAUUUACA-5' (SEQ ID NO: 2516)

KRAS-1689 Target: 5'-TAAAAAATTCTCATAGGAATTAAATGT-3' (SEQ ID NO: 3922)

5'-AAAAUUCUCAUAGGAAUUAAAUGta-3' (SEQ ID NO: 3220)
3'-UUUUUUAAGAGUAUCCUUAAUUUACAU-5' (SEQ ID NO: 2517)

KRAS-1690 Target: 5'-AAAAAATTCTCATAGGAATTAAATGTA-3' (SEQ ID NO: 3923)

5'-CUCUUUCAUAGUAUAACUUUAAAtc-3' (SEQ ID NO: 3221)
3'-ACGAGAAAGUAUCAUAUUGAAAUUUAG-5' (SEQ ID NO: 2518)

KRAS-1734 Target: 5'-TGCTCTTTCATAGTATAACTTTAAATC-3' (SEQ ID NO: 3924)

5'-UCAUAGUAUAACUUUAAAUCUUUtc-3' (SEQ ID NO: 3222)
3'-AAAGUAUCAUAUUGAAAUUUAGAAAAG-5' (SEQ ID NO: 2519)

KRAS-1739 Target: 5'-TTTCATAGTATAACTTTAAATCTTTTC-3' (SEQ ID NO: 3925)

5'-CAUAGUAUAACUUUAAAUCUUUUct-3' (SEQ ID NO: 3223)
3'-AAGUAUCAUAUUGAAAUUUAGAAAAGA-5' (SEQ ID NO: 2520)

KRAS-1740 Target: 5'-TTCATAGTATAACTTTAAATCTTTTCT-3' (SEQ ID NO: 3926)

5'-UUUAAAUCUUUUCUUCAACUUGAgt-3' (SEQ ID NO: 3224)
3'-UGAAAUUUAGAAAAGAAGUUGAACUCA-5' (SEQ ID NO: 2521)

KRAS-1751 Target: 5'-ACTTTAAATCTTTTCTTCAACTTGAGT-3' (SEQ ID NO: 3927)

5'-UUAAAUCUUUUCUUCAACUUGAGtc-3' (SEQ ID NO: 3225)
3'-GAAAUUUAGAAAAGAAGUUGAACUCAG-5' (SEQ ID NO: 2522)

KRAS-1752 Target: 5'-CTTTAAATCTTTTCTTCAACTTGAGTC-3' (SEQ ID NO: 3928)

5'-AACUUGAGUCUUUGAAGAUAGUUtt-3' (SEQ ID NO: 3226)
3'-AGUUGAACUCAGAAACUUCUAUCAAAA-5' (SEQ ID NO: 2523)

KRAS-1767 Target: 5'-TCAACTTGAGTCTTTGAAGATAGTTTT-3' (SEQ ID NO: 3929)

5'-CUUGAGUCUUUGAAGAUAGUUUUaa-3' (SEQ ID NO: 3227)
3'-UUGAACUCAGAAACUUCUAUCAAAAUU-5' (SEQ ID NO: 2524)

KRAS-1769 Target: 5'-AACTTGAGTCTTTGAAGATAGTTTTAA-3' (SEQ ID NO: 3930)

5'-UUGAGUCUUUGAAGAUAGUUUUAat-3' (SEQ ID NO: 3228)
3'-UGAACUCAGAAACUUCUAUCAAAAUUA-5' (SEQ ID NO: 2525)

KRAS-1770 Target: 5'-ACTTGAGTCTTTGAAGATAGTTTTAAT-3' (SEQ ID NO: 3931)

5'-AAGAUAGUUUUAAUUCUGCUUGUga-3' (SEQ ID NO: 3229)
3'-ACUUCUAUCAAAAUUAAGACGAACACU-5' (SEQ ID NO: 2526)

KRAS-1781 Target: 5'-TGAAGATAGTTTTAATTCTGCTTGTGA-3' (SEQ ID NO: 3932)

5'-AGAUAGUUUUAAUUCUGCUUGUGac-3' (SEQ ID NO: 3230)
3'-CUUCUAUCAAAAUUAAGACGAACACUG-5' (SEQ ID NO: 2527)

KRAS-1782 Target: 5'-GAAGATAGTTTTAATTCTGCTTGTGAC-3' (SEQ ID NO: 3933)

5'-GAUAGUUUUAAUUCUGCUUGUGAca-3' (SEQ ID NO: 3231)
3'-UUCUAUCAAAAUUAAGACGAACACUGU-5' (SEQ ID NO: 2528)

KRAS-1783 Target: 5'-AAGATAGTTTTAATTCTGCTTGTGACA-3' (SEQ ID NO: 3934)

5'-UGCUUGUGACAUUAAAAGAUUAUtt-3' (SEQ ID NO: 3232)

3'-AGACGAACACUGUAAUUUUCUAAUAAA-5' (SEQ ID NO: 2529)

KRAS-1797 Target: 5'-TCTGCTTGTGACATTAAAAGATTATTT-3' (SEQ ID NO: 3935)

5'-AGCAUUGCUUUUGUUUCUUAAGAaa-3' (SEQ ID NO: 3233)
3'-UCUCGUAACGAAAACAAAGAAUUCUUU-5' (SEQ ID NO: 2530)

KRAS-2045 Target: 5'-AGAGCATTGCTTTTGTTTCTTAAGAAA-3' (SEQ ID NO: 3936)

5'-GCAUUGCUUUUGUUUCUUAAGAAaa-3' (SEQ ID NO: 3234)
3'-CUCGUAACGAAAACAAAGAAUUCUUUU-5' (SEQ ID NO: 2531)

KRAS-2046 Target: 5'-GAGCATTGCTTTTGTTTCTTAAGAAAA-3' (SEQ ID NO: 3937)

5'-CUUUUGUUUCUUAAGAAAACAAAct-3' (SEQ ID NO: 3235)
3'-ACGAAAACAAAGAAUUCUUUUGUUUGA-5' (SEQ ID NO: 2532)

KRAS-2052 Target: 5'-TGCTTTTGTTTCTTAAGAAAACAAACT-3' (SEQ ID NO: 3938)

5'-UUCUUAAGAAAACAAACUCUUUUtt-3' (SEQ ID NO: 3236)
3'-CAAAGAAUUCUUUUGUUUGAGAAAAAA-5' (SEQ ID NO: 2533)

KRAS-2059 Target: 5'-GTTTCTTAAGAAAACAAACTCTTTTTT-3' (SEQ ID NO: 3939)

5'-UCUUAAGAAAACAAACUCUUUUUta-3' (SEQ ID NO: 3237)
3'-AAAGAAUUCUUUUGUUUGAGAAAAAAU-5' (SEQ ID NO: 2534)

KRAS-2060 Target: 5'-TTTCTTAAGAAAACAAACTCTTTTTTA-3' (SEQ ID NO: 3940)

5'-CUUAAGAAAACAAACUCUUUUUUaa-3' (SEQ ID NO: 3238)
3'-AAGAAUUCUUUUGUUUGAGAAAAAAUU-5' (SEQ ID NO: 2535)

KRAS-2061 Target: 5'-TTCTTAAGAAAACAAACTCTTTTTTAA-3' (SEQ ID NO: 3941)

5'-UUAAGAAAACAAACUCUUUUUUAaa-3' (SEQ ID NO: 3239)
3'-AGAAUUCUUUUGUUUGAGAAAAAAUUU-5' (SEQ ID NO: 2536)

KRAS-2062 Target: 5'-TCTTAAGAAAACAAACTCTTTTTTAAA-3' (SEQ ID NO: 3942)

5'-UAAGAAAACAAACUCUUUUUUAAaa-3' (SEQ ID NO: 3240)
3'-GAAUUCUUUUGUUUGAGAAAAAAUUUU-5' (SEQ ID NO: 2537)

KRAS-2063 Target: 5'-CTTAAGAAAACAAACTCTTTTTTAAAA-3' (SEQ ID NO: 3943)

5'-AAGAAAACAAACUCUUUUUUAAAaa-3' (SEQ ID NO: 3241)
3'-AAUUCUUUUGUUUGAGAAAAAAUUUUU-5' (SEQ ID NO: 2538)

KRAS-2064 Target: 5'-TTAAGAAAACAAACTCTTTTTTAAAAA-3' (SEQ ID NO: 3944)

5'-AGAAAACAAACUCUUUUUUAAAAat-3' (SEQ ID NO: 3242)
3'-AUUCUUUUGUUUGAGAAAAAAUUUUUA-5' (SEQ ID NO: 2539)

KRAS-2065 Target: 5'-TAAGAAAACAAACTCTTTTTTAAAAAT-3' (SEQ ID NO: 3945)

5'-AACAAACUCUUUUUUAAAAAUUAct-3' (SEQ ID NO: 3243)
3'-UUUUGUUUGAGAAAAAAUUUUUAAUGA-5' (SEQ ID NO: 2540)

KRAS-2069 Target: 5'-AAAACAAACTCTTTTTTAAAAATTACT-3' (SEQ ID NO: 3946)

5'-CUCUUUUUUAAAAAUUACUUUUAaa-3' (SEQ ID NO: 3244)
3'-UUGAGAAAAAAUUUUUAAUGAAAAUUU-5' (SEQ ID NO: 2541)

KRAS-2075 Target: 5'-AACTCTTTTTTAAAAATTACTTTTAAA-3' (SEQ ID NO: 3947)

5'-UCUUUUUUAAAAAUUACUUUUAAat-3' (SEQ ID NO: 3245)
3'-UGAGAAAAAAUUUUUAAUGAAAAUUUA-5' (SEQ ID NO: 2542)

KRAS-2076 Target: 5'-ACTCTTTTTTAAAAATTACTTTTAAAT-3' (SEQ ID NO: 3948)

5'-CUUUUUUAAAAAUUACUUUUAAAta-3' (SEQ ID NO: 3246)
3'-GAGAAAAAAUUUUUAAUGAAAAUUUAU-5' (SEQ ID NO: 2543)

KRAS-2077 Target: 5'-CTCTTTTTTAAAAATTACTTTTAAATA-3' (SEQ ID NO: 3949)

5'-UUUUUUAAAAAUUACUUUUAAAUat-3' (SEQ ID NO: 3247)
3'-AGAAAAAAUUUUUAAUGAAAAUUUAUA-5' (SEQ ID NO: 2544)

KRAS-2078 Target: 5'-TCTTTTTTAAAAATTACTTTTAAATAT-3' (SEQ ID NO: 3950)

5'-UUUUUAAAAAUUACUUUUAAAUAtt-3' (SEQ ID NO: 3248)
3'-GAAAAAAUUUUUAAUGAAAAUUUAUAA-5' (SEQ ID NO: 2545)

KRAS-2079 Target: 5'-CTTTTTTAAAAATTACTTTTAAATATT-3' (SEQ ID NO: 3951)

5'-UUUUAAAAAUUACUUUUAAAUAUta-3' (SEQ ID NO: 3249)
3'-AAAAAAUUUUUAAUGAAAAUUUAUAAU-5' (SEQ ID NO: 2546)

KRAS-2080 Target: 5'-TTTTTTAAAAATTACTTTTAAATATTA-3' (SEQ ID NO: 3952)

5'-UUUAAAAAUUACUUUUAAAUAUUaa-3' (SEQ ID NO: 3250)
3'-AAAAAUUUUUAAUGAAAAUUUAUAAUU-5' (SEQ ID NO: 2547)

KRAS-2081 Target: 5'-TTTTTAAAAATTACTTTTAAATATTAA-3' (SEQ ID NO: 3953)

5'-UUAAAAAUUACUUUUAAAUAUUAac-3' (SEQ ID NO: 3251)
3'-AAAAUUUUUAAUGAAAAUUUAUAAUUG-5' (SEQ ID NO: 2548)

KRAS-2082 Target: 5'-TTTTAAAAATTACTTTTAAATATTAAC-3' (SEQ ID NO: 3954)

5'-UAAAAAUUACUUUUAAAUAUUAAct-3' (SEQ ID NO: 3252)
3'-AAAUUUUUAAUGAAAAUUUAUAAUUGA-5' (SEQ ID NO: 2549)

KRAS-2083 Target: 5'-TTTAAAAATTACTTTTAAATATTAACT-3' (SEQ ID NO: 3955)

5'-UACUUUUAAAUAUUAACUCAAAAgt-3' (SEQ ID NO: 3253)
3'-UAAUGAAAAUUUAUAAUUGAGUUUUCA-5' (SEQ ID NO: 2550)

KRAS-2090 Target: 5'-ATTACTTTTAAATATTAACTCAAAAGT-3' (SEQ ID NO: 3956)

5'-ACUUUUAAAUAUUAACUCAAAAGtt-3' (SEQ ID NO: 3254)
3'-AAUGAAAAUUUAUAAUUGAGUUUUCAA-5' (SEQ ID NO: 2551)

KRAS-2091 Target: 5'-TTACTTTTAAATATTAACTCAAAAGTT-3' (SEQ ID NO: 3957)

5'-UUUUAAAUAUUAACUCAAAAGUUga-3' (SEQ ID NO: 3255)
3'-UGAAAAUUUAUAAUUGAGUUUUCAACU-5' (SEQ ID NO: 2552)

KRAS-2093 Target: 5'-ACTTTTAAATATTAACTCAAAAGTTGA-3' (SEQ ID NO: 3958)

5'-UUAAAUAUUAACUCAAAAGUUGAga-3' (SEQ ID NO: 3256)
3'-AAAAUUUAUAAUUGAGUUUUCAACUCU-5' (SEQ ID NO: 2553)

KRAS-2095 Target: 5'-TTTTAAATATTAACTCAAAAGTTGAGA-3' (SEQ ID NO: 3959)

5'-UAAAUAUUAACUCAAAAGUUGAGat-3' (SEQ ID NO: 3257)
3'-AAAUUUAUAAUUGAGUUUUCAACUCUA-5' (SEQ ID NO: 2554)

KRAS-2096 Target: 5'-TTTAAATATTAACTCAAAAGTTGAGAT-3' (SEQ ID NO: 3960)

5'-AAAUAUUAACUCAAAAGUUGAGAtt-3' (SEQ ID NO: 3258)
3'-AAUUUAUAAUUGAGUUUUCAACUCUAA-5' (SEQ ID NO: 2555)

KRAS-2097 Target: 5'-TTAAATATTAACTCAAAAGTTGAGATT-3' (SEQ ID NO: 3961)

5'-AAUAUUAACUCAAAAGUUGAGAUtt-3' (SEQ ID NO: 3259)
3'-AUUUAUAAUUGAGUUUUCAACUCUAAA-5' (SEQ ID NO: 2556)

KRAS-2098 Target: 5'-TAAATATTAACTCAAAAGTTGAGATTT-3' (SEQ ID NO: 3962)

5'-GGUGUGCCAAGACAUUAAUUUUUtt-3' (SEQ ID NO: 3260)
3'-CACCACACGGUUCUGUAAUUAAAAAAA-5' (SEQ ID NO: 2557)

KRAS-2132 Target: 5'-GTGGTGTGCCAAGACATTAATTTTTTT-3' (SEQ ID NO: 3963)

5'-GCCAAGACAUUAAUUUUUUUUUUaa-3' (SEQ ID NO: 3261)
3'-CACGGUUCUGUAAUUAAAAAAAAAAUU-5' (SEQ ID NO: 2558)

KRAS-2137 Target: 5'-GTGCCAAGACATTAATTTTTTTTTTAA-3' (SEQ ID NO: 3964)

5'-CCAAGACAUUAAUUUUUUUUUUAaa-3' (SEQ ID NO: 3262)
3'-ACGGUUCUGUAAUUAAAAAAAAAAUU-5' (SEQ ID NO: 2559)

KRAS-2138 Target: 5'-TGCCAAGACATTAATTTTTTTTTTAAA-3' (SEQ ID NO: 3965)

5'-CAUUAAUUUUUUUUUUAAACAAUga-3' (SEQ ID NO: 3263)
3'-CUGUAAUUAAAAAAAAAAUUUGUUACU-5' (SEQ ID NO: 2560)

KRAS-2144 Target: 5'-GACATTAATTTTTTTTTTAAACAATGA-3' (SEQ ID NO: 3966)

5'-AUUAAUUUUUUUUUUAAACAAUGaa-3' (SEQ ID NO: 3264)
3'-UGUAAUUAAAAAAAAAAUUUGUUACUU-5' (SEQ ID NO: 2561)

KRAS-2145 Target: 5'-ACATTAATTTTTTTTTTAAACAATGAA-3' (SEQ ID NO: 3967)

5'-UAAUUUUUUUUUUAAACAAUGAAgt-3' (SEQ ID NO: 3265)
3'-UAAUUAAAAAAAAAAUUUGUUACUUCA-5' (SEQ ID NO: 2562)

KRAS-2147 Target: 5'-ATTAATTTTTTTTTTAAACAATGAAGT-3' (SEQ ID NO: 3968)

5'-AUUUUUUUUUUAAACAAUGAAGUga-3' (SEQ ID NO: 3266)
3'-AUUAAAAAAAAAAUUUGUUACUUCACU-5' (SEQ ID NO: 2563)

KRAS-2149 Target: 5'-TAATTTTTTTTTTAAACAATGAAGTGA-3' (SEQ ID NO: 3969)

5'-UUUUUUUUUUAAACAAUGAAGUGaa-3' (SEQ ID NO: 3267)
3'-UUAAAAAAAAAAUUUGUUACUUCACUU-5' (SEQ ID NO: 2564)

KRAS-2150 Target: 5'-AATTTTTTTTTTAAACAATGAAGTGAA-3' (SEQ ID NO: 3970)

5'-UUUUUUUUUAAACAAUGAAGUGAaa-3' (SEQ ID NO: 3268)
3'-UAAAAAAAAAAUUUGUUACUUCACUUU-5' (SEQ ID NO: 2565)

KRAS-2151 Target: 5'-ATTTTTTTTTTAAACAATGAAGTGAAA-3' (SEQ ID NO: 3971)

5'-UUUUUUUUAAACAAUGAAGUGAAaa-3' (SEQ ID NO: 3269)
3'-AAAAAAAAAAUUUGUUACUUCACUUUU-5' (SEQ ID NO: 2566)

KRAS-2152 Target: 5'-TTTTTTTTTTAAACAATGAAGTGAAAA-3' (SEQ ID NO: 3972)

5'-UUUUUUUAAACAAUGAAGUGAAAaa-3' (SEQ ID NO: 3270)
3'-AAAAAAAAAUUUGUUACUUCACUUUUU-5' (SEQ ID NO: 2567)

KRAS-2153 Target: 5'-TTTTTTTTTAAACAATGAAGTGAAAAA-3' (SEQ ID NO: 3973)

5'-UUUUUAAACAAUGAAGUGAAAAAgt-3' (SEQ ID NO: 3271)
3'-AAAAAAAUUUGUUACUUCACUUUUUCA-5' (SEQ ID NO: 2568)

KRAS-2155 Target: 5'-TTTTTTTAAACAATGAAGTGAAAAAGT-3' (SEQ ID NO: 3974)

5'-UUUUAAACAAUGAAGUGAAAAAGtt-3' (SEQ ID NO: 3272)
3'-AAAAAAUUUGUUACUUCACUUUUUCAA-5' (SEQ ID NO: 2569)

KRAS-2156 Target: 5'-TTTTTTAAACAATGAAGTGAAAAAGTT-3' (SEQ ID NO: 3975)

5'-UUUAAACAAUGAAGUGAAAAAGUtt-3' (SEQ ID NO: 3273)
3'-AAAAAUUUGUUACUUCACUUUUUCAAA-5' (SEQ ID NO: 2570)

KRAS-2157 Target: 5'-TTTTTAAACAATGAAGTGAAAAAGTTT-3' (SEQ ID NO: 3976)

5'-AUGAAGUGAAAAAGUUUUACAAUct-3' (SEQ ID NO: 3274)
3'-GUUACUUCACUUUUUCAAAAUGUUAGA-5' (SEQ ID NO: 2571)

KRAS-2165 Target: 5'-CAATGAAGTGAAAAAGTTTTACAATCT-3' (SEQ ID NO: 3977)

5'-UGAAAAAGUUUUACAAUCUCUAGgt-3' (SEQ ID NO: 3275)
3'-UCACUUUUUCAAAAUGUUAGAGAUCCA-5' (SEQ ID NO: 2572)

KRAS-2171 Target: 5'-AGTGAAAAAGTTTTACAATCTCTAGGT-3' (SEQ ID NO: 3978)

5'-GAAAAAGUUUUACAAUCUCUAGGtt-3' (SEQ ID NO: 3276)
3'-CACUUUUUCAAAAUGUUAGAGAUCCAA-5' (SEQ ID NO: 2573)

KRAS-2172 Target: 5'-GTGAAAAAGTTTTACAATCTCTAGGTT-3' (SEQ ID NO: 3979)

5'-AAAAAGUUUUACAAUCUCUAGGUtt-3' (SEQ ID NO: 3277)
3'-ACUUUUUCAAAAUGUUAGAGAUCCAAA-5' (SEQ ID NO: 2574)

KRAS-2173 Target: 5'-TGAAAAAGTTTTACAATCTCTAGGTTT-3' (SEQ ID NO: 3980)

5'-ACUGGUUAAAUUAACAUUGCAUAaa-3' (SEQ ID NO: 3278)
3'-UGUGACCAAUUUAAUUGUAACGUAUUU-5' (SEQ ID NO: 2575)

KRAS-2214 Target: 5'-ACACTGGTTAAATTAACATTGCATAAA-3' (SEQ ID NO: 3981)

5'-CUGGUUAAAUUAACAUUGCAUAAac-3' (SEQ ID NO: 3279)
3'-GUGACCAAUUUAAUUGUAACGUAUUUG-5' (SEQ ID NO: 2576)

KRAS-2215 Target: 5'-CACTGGTTAAATTAACATTGCATAAAC-3' (SEQ ID NO: 3982)

5'-UGGUUAAAUUAACAUUGCAUAAAca-3' (SEQ ID NO: 3280)
3'-UGACCAAUUUAAUUGUAACGUAUUUGU-5' (SEQ ID NO: 2577)

KRAS-2216 Target: 5'-ACTGGTTAAATTAACATTGCATAAACA-3' (SEQ ID NO: 3983)

5'-ACAUUGCAUAAACACUUUUCAAGtc-3' (SEQ ID NO: 3281)
3'-AUUGUAACGUAUUUGUGAAAAGUUCAG-5' (SEQ ID NO: 2578)

KRAS-2227 Target: 5'-TAACATTGCATAAACACTTTTCAAGTC-3' (SEQ ID NO: 3984)

5'-UCAAGUCUGAUCCAUAUUUAAUAat-3' (SEQ ID NO: 3282)
3'-AAAGUUCAGACUAGGUAUAAAUUAUUA-5' (SEQ ID NO: 2579)

KRAS-2245 Target: 5'-TTTCAAGTCTGATCCATATTTAATAAT-3' (SEQ ID NO: 3985)

5'-UCCAUAUUUAAUAAUGCUUUAAAat-3' (SEQ ID NO: 3283)
3'-CUAGGUAUAAAUUAUUACGAAAUUUUA-5' (SEQ ID NO: 2580)

KRAS-2255 Target: 5'-GATCCATATTTAATAATGCTTTAAAAT-3' (SEQ ID NO: 3986)

5'-CCAUAUUUAAUAAUGCUUUAAAAta-3' (SEQ ID NO: 3284)
3'-UAGGUAUAAAUUAUUACGAAAUUUUAU-5' (SEQ ID NO: 2581)

KRAS-2256 Target: 5'-ATCCATATTTAATAATGCTTTAAAATA-3' (SEQ ID NO: 3987)

5'-CAUAUUUAAUAAUGCUUUAAAAUaa-3' (SEQ ID NO: 3285)

3'-AGGUAUAAAUUAUUACGAAAUUUUAUU-5' (SEQ ID NO: 2582)

KRAS-2257 Target: 5'-TCCATATTTAATAATGCTTTAAAATAA-3' (SEQ ID NO: 3988)

5'-AUAUUUAAUAAUGCUUUAAAAUAaa-3' (SEQ ID NO: 3286)
3'-GGUAUAAAUUAUUACGAAAUUUUAUUU-5' (SEQ ID NO: 2583)

KRAS-2258 Target: 5'-CCATATTTAATAATGCTTTAAAATAAA-3' (SEQ ID NO: 3989)

5'-UAUUUAAUAAUGCUUUAAAAUAAaa-3' (SEQ ID NO: 3287)
3'-GUAUAAAUUAUUACGAAAUUUUAUUUU-5' (SEQ ID NO: 2584)

KRAS-2259 Target: 5'-CATATTTAATAATGCTTTAAAATAAAA-3' (SEQ ID NO: 3990)

5'-AUUUAAUAAUGCUUUAAAAUAAAaa-3' (SEQ ID NO: 3288)
3'-UAUAAAUUAUUACGAAAUUUUAUUUUU-5' (SEQ ID NO: 2585)

KRAS-2260 Target: 5'-ATATTTAATAATGCTTTAAAATAAAAA-3' (SEQ ID NO: 3991)

5'-UUAAUAAUGCUUUAAAAUAAAAAta-3' (SEQ ID NO: 3289)
3'-UAAAUUAUUACGAAAUUUUAUUUUUAU-5' (SEQ ID NO: 2586)

KRAS-2262 Target: 5'-ATTTAATAATGCTTTAAAATAAAAATA-3' (SEQ ID NO: 3992)

5'-UAAUAAUGCUUUAAAAUAAAAAUaa-3' (SEQ ID NO: 3290)
3'-AAAUUAUUACGAAAUUUUAUUUUUAUU-5' (SEQ ID NO: 2587)

KRAS-2263 Target: 5'-TTTAATAATGCTTTAAAATAAAAATAA-3' (SEQ ID NO: 3993)

5'-AAUAAUGCUUUAAAAUAAAAAUAaa-3' (SEQ ID NO: 3291)
3'-AAUUAUUACGAAAUUUUAUUUUUAUUU-5' (SEQ ID NO: 2588)

KRAS-2264 Target: 5'-TTAATAATGCTTTAAAATAAAAATAAA-3' (SEQ ID NO: 3994)

5'-AUAAUGCUUUAAAAUAAAAAUAAaa-3' (SEQ ID NO: 3292)
3'-AUUAUUACGAAAUUUUAUUUUUAUUUU-5' (SEQ ID NO: 2589)

KRAS-2265 Target: 5'-TAATAATGCTTTAAAATAAAAATAAAA-3' (SEQ ID NO: 3995)

5'-UUUAAAAUAAAAAUAAAAACAAUcc-3' (SEQ ID NO: 3293)
3'-CGAAAUUUUAUUUUUAUUUUGUUAGG-5' (SEQ ID NO: 2590)

KRAS-2272 Target: 5'-GCTTTAAAATAAAAATAAAAACAATCC-3' (SEQ ID NO: 3996)

5'-AUAAAAAUAAAAACAAUCCUUUUga-3' (SEQ ID NO: 3294)
3'-UUUAUUUUUAUUUUUGUUAGGAAAACU-5' (SEQ ID NO: 2591)

KRAS-2278 Target: 5'-AAATAAAAATAAAAACAATCCTTTTGA-3' (SEQ ID NO: 3997)

5'-UAAAAAUAAAAACAAUCCUUUUGat-3' (SEQ ID NO: 3295)
3'-UUAUUUUUAUUUUUGUUAGGAAAACUA-5' (SEQ ID NO: 2592)

KRAS-2279 Target: 5'-AATAAAAATAAAAACAATCCTTTTGAT-3' (SEQ ID NO: 3998)

5'-AAAAAUAAAAACAAUCCUUUUGAta-3' (SEQ ID NO: 3296)
3'-UAUUUUUAUUUUUGUUAGGAAAACUAU-5' (SEQ ID NO: 2593)

KRAS-2280 Target: 5'-ATAAAAATAAAAACAATCCTTTTGATA-3' (SEQ ID NO: 3999)

5'-AAAAUAAAAACAAUCCUUUUGAUaa-3' (SEQ ID NO: 3297)
3'-AUUUUUAUUUUUGUUAGGAAAACUAUU-5' (SEQ ID NO: 2594)

KRAS-2281 Target: 5'-TAAAAATAAAAACAATCCTTTTGATAA-3' (SEQ ID NO: 4000)

5'-AAAUAAAAACAAUCCUUUUGAUAaa-3' (SEQ ID NO: 3298)
3'-UUUUUAUUUUUGUUAGGAAAACUAUUU-5' (SEQ ID NO: 2595)

KRAS-2282 Target: 5'-AAAAATAAAAACAATCCTTTTGATAAA-3' (SEQ ID NO: 4001)

5'-AAUAAAAACAAUCCUUUUGAUAAat-3' (SEQ ID NO: 3299)
3'-UUUUAUUUUUGUUAGGAAAACUAUUUA-5' (SEQ ID NO: 2596)

KRAS-2283 Target: 5'-AAAATAAAAACAATCCTTTTGATAAAT-3' (SEQ ID NO: 4002)

5'-AUAAAAACAAUCCUUUUGAUAAAtt-3' (SEQ ID NO: 3300)
3'-UUUAUUUUUGUUAGGAAAACUAUUUAA-5' (SEQ ID NO: 2597)

KRAS-2284 Target: 5'-AAATAAAAACAATCCTTTTGATAAATT-3' (SEQ ID NO: 4003)

5'-UAAAAACAAUCCUUUUGAUAAAUtt-3' (SEQ ID NO: 3301)
3'-UUAUUUUUGUUAGGAAAACUAUUUAAA-5' (SEQ ID NO: 2598)

KRAS-2285 Target: 5'-AATAAAAACAATCCTTTTGATAAATTT-3' (SEQ ID NO: 4004)

5'-AACAAUCCUUUUGAUAAAUUUAAaa-3' (SEQ ID NO: 3302)
3'-UUUUGUUAGGAAAACUAUUUAAAUUUU-5' (SEQ ID NO: 2599)

KRAS-2289 Target: 5'-AAAACAATCCTTTTGATAAATTTAAAA-3' (SEQ ID NO: 4005)

5'-UCCUUUUGAUAAAUUUAAAAUGUta-3' (SEQ ID NO: 3303)
3'-UUAGGAAAACUAUUUAAAUUUUACAAU-5' (SEQ ID NO: 2600)

KRAS-2294 Target: 5'-AATCCTTTTGATAAATTTAAAATGTTA-3' (SEQ ID NO: 4006)

5'-CCUUUUGAUAAAUUUAAAAUGUUac-3' (SEQ ID NO: 3304)
3'-UAGGAAAACUAUUUAAAUUUUACAAUG-5' (SEQ ID NO: 2601)

KRAS-2295 Target: 5'-ATCCTTTTGATAAATTTAAAATGTTAC-3' (SEQ ID NO: 4007)

5'-CUUUUGAUAAAUUUAAAAUGUUAct-3' (SEQ ID NO: 3305)
3'-AGGAAAACUAUUUAAAUUUUACAAUGA-5' (SEQ ID NO: 2602)

KRAS-2296 Target: 5'-TCCTTTTGATAAATTTAAAATGTTACT-3' (SEQ ID NO: 4008)

5'-UGAUAAAUUUAAAAUGUUACUUAtt-3' (SEQ ID NO: 3306)
3'-AAACUAUUUAAAUUUUACAAUGAAUAA-5' (SEQ ID NO: 2603)

KRAS-2300 Target: 5'-TTTGATAAATTTAAAATGTTACTTATT-3' (SEQ ID NO: 4009)

5'-GAUAAAUUUAAAAUGUUACUUAUtt-3' (SEQ ID NO: 3307)
3'-AACUAUUUAAAUUUUACAAUGAAUAAA-5' (SEQ ID NO: 2604)

KRAS-2301 Target: 5'-TTGATAAATTTAAAATGTTACTTATTT-3' (SEQ ID NO: 4010)

5'-AUAAAUUUAAAAUGUUACUUAUUtt-3' (SEQ ID NO: 3308)
3'-ACUAUUUAAAUUUUACAAUGAAUAAAA-5' (SEQ ID NO: 2605)

KRAS-2302 Target: 5'-TGATAAATTTAAAATGTTACTTATTTT-3' (SEQ ID NO: 4011)

5'-UAAAUUUAAAAUGUUACUUAUUUta-3' (SEQ ID NO: 3309)
3'-CUAUUUAAAUUUUACAAUGAAUAAAAU-5' (SEQ ID NO: 2606)

KRAS-2303 Target: 5'-GATAAATTTAAAATGTTACTTATTTTA-3' (SEQ ID NO: 4012)

5'-AAAUUUAAAAUGUUACUUAUUUUaa-3' (SEQ ID NO: 3310)
3'-UAUUUAAAUUUUACAAUGAAUAAAAUU-5' (SEQ ID NO: 2607)

KRAS-2304 Target: 5'-ATAAATTTAAAATGTTACTTATTTTAA-3' (SEQ ID NO: 4013)

5'-AAUUUAAAAUGUUACUUAUUUUAaa-3' (SEQ ID NO: 3311)
3'-AUUUAAAUUUUACAAUGAAUAAAAUUU-5' (SEQ ID NO: 2608)

KRAS-2305 Target: 5'-TAAATTTAAAATGTTACTTATTTTAAA-3' (SEQ ID NO: 4014)

5'-UUUAAAAUGUUACUUAUUUUAAAat-3' (SEQ ID NO: 3312)
3'-UUAAAUUUUACAAUGAAUAAAAUUUUA-5' (SEQ ID NO: 2609)

KRAS-2307 Target: 5'-AATTTAAAATGTTACTTATTTTAAAAT-3' (SEQ ID NO: 4015)

5'-UUAAAAUGUUACUUAUUUUAAAAta-3' (SEQ ID NO: 3313)
3'-UAAAUUUUACAAUGAAUAAAAUUUUAU-5' (SEQ ID NO: 2610)

KRAS-2308 Target: 5'-ATTTAAAATGTTACTTATTTTAAAATA-3' (SEQ ID NO: 4016)

5'-UAAAAUGUUACUUAUUUUAAAAUaa-3' (SEQ ID NO: 3314)
3'-AAAUUUUACAAUGAAUAAAAUUUUAUU-5' (SEQ ID NO: 2611)

KRAS-2309 Target: 5'-TTTAAAATGTTACTTATTTTAAAATAA-3' (SEQ ID NO: 4017)

5'-AAAAUGUUACUUAUUUUAAAAUAaa-3' (SEQ ID NO: 3315)
3'-AAUUUUACAAUGAAUAAAAUUUUAUUU-5' (SEQ ID NO: 2612)

KRAS-2310 Target: 5'-TTAAAATGTTACTTATTTTAAAATAAA-3' (SEQ ID NO: 4018)

5'-AAAUGUUACUUAUUUUAAAAUAAat-3' (SEQ ID NO: 3316)
3'-AUUUUACAAUGAAUAAAAUUUUAUUUA-5' (SEQ ID NO: 2613)

KRAS-2311 Target: 5'-TAAAATGTTACTTATTTTAAAATAAAT-3' (SEQ ID NO: 4019)

5'-AUGUUACUUAUUUUAAAAUAAAUga-3' (SEQ ID NO: 3317)
3'-UUUACAAUGAAUAAAAUUUUAUUUACU-5' (SEQ ID NO: 2614)

KRAS-2313 Target: 5'-AAATGTTACTTATTTTAAAATAAATGA-3' (SEQ ID NO: 4020)

5'-ACUUAUUUUAAAAUAAAUGAAGUga-3' (SEQ ID NO: 3318)
3'-AAUGAAUAAAAUUUUAUUUACUUCACU-5' (SEQ ID NO: 2615)

KRAS-2318 Target: 5'-TTACTTATTTTAAAATAAATGAAGTGA-3' (SEQ ID NO: 4021)

5'-UUAUUUUAAAAUAAAUGAAGUGAga-3' (SEQ ID NO: 3319)
3'-UGAAUAAAAUUUUAUUUACUUCACUCU-5' (SEQ ID NO: 2616)

KRAS-2320 Target: 5'-ACTTATTTTAAAATAAATGAAGTGAGA-3' (SEQ ID NO: 4022)

5'-UAUUUUAAAAUAAAUGAAGUGAGat-3' (SEQ ID NO: 3320)
3'-GAAUAAAAUUUUAUUUACUUCACUCUA-5' (SEQ ID NO: 2617)

KRAS-2321 Target: 5'-CTTATTTTAAAATAAATGAAGTGAGAT-3' (SEQ ID NO: 4023)

5'-UUUAAAAUAAAUGAAGUGAGAUGgc-3' (SEQ ID NO: 3321)
3'-UAAAAUUUUAUUUACUUCACUCUACCG-5' (SEQ ID NO: 2618)

KRAS-2324 Target: 5'-ATTTTAAAATAAATGAAGTGAGATGGC-3' (SEQ ID NO: 4024)

5'-UUAAAAUAAAUGAAGUGAGAUGGca-3' (SEQ ID NO: 3322)
3'-AAAAUUUUAUUUACUUCACUCUACCGU-5' (SEQ ID NO: 2619)

KRAS-2325 Target: 5'-TTTTAAAATAAATGAAGTGAGATGGCA-3' (SEQ ID NO: 4025)

5'-UCCAUUUCUUCAUGUUAAAAGAAgt-3' (SEQ ID NO: 3323)
3'-AUAGGUAAAGAAGUACAAUUUUCUUCA-5' (SEQ ID NO: 2620)

KRAS-2445 Target: 5'-TATCCATTTCTTCATGTTAAAAGAAGT-3' (SEQ ID NO: 4026)

5'-CCAUUUCUUCAUGUUAAAAGAAGtc-3' (SEQ ID NO: 3324)
3'-UAGGUAAAGAAGUACAAUUUUCUUCAG-5' (SEQ ID NO: 2621)

KRAS-2446 Target: 5'-ATCCATTTCTTCATGTTAAAAGAAGTC-3' (SEQ ID NO: 4027)

5'-CUCAAACUCUUAGUUUUUUUUUUtt-3' (SEQ ID NO: 3325)
3'-UAGAGUUUGAGAAUCAAAAAAAAAAAA-5' (SEQ ID NO: 2622)

KRAS-2473 Target: 5'-ATCTCAAACTCTTAGTTTTTTTTTTTT-3' (SEQ ID NO: 4028)

5'-UAGUUUUUUUUUUUUACAACUAUgt-3' (SEQ ID NO: 3326)
3'-GAAUCAAAAAAAAAAAAAUGUUGAUACA-5' (SEQ ID NO: 2623)

KRAS-2483 Target: 5'-CTTAGTTTTTTTTTTTTACAACTATGT-3' (SEQ ID NO: 4029)

5'-AGUUUUUUUUUUUUACAACUAUGta-3' (SEQ ID NO: 3327)
3'-AAUCAAAAAAAAAAAAAUGUUGAUACAU-5' (SEQ ID NO: 2624)

KRAS-2484 Target: 5'-TTAGTTTTTTTTTTTTACAACTATGTA-3' (SEQ ID NO: 4030)

5'-GUUUUUUUUUUUUACAACUAUGUaa-3' (SEQ ID NO: 3328)
3'-AUCAAAAAAAAAAAAAUGUUGAUACAUU-5' (SEQ ID NO: 2625)

KRAS-2485 Target: 5'-TAGTTTTTTTTTTTTACAACTATGTAA-3' (SEQ ID NO: 4031)

5'-UUUUUUUUUUUUACAACUAUGUAat-3' (SEQ ID NO: 3329)
3'-UCAAAAAAAAAAAAAUGUUGAUACAUUA-5' (SEQ ID NO: 2626)

KRAS-2486 Target: 5'-AGTTTTTTTTTTTTACAACTATGTAAT-3' (SEQ ID NO: 4032)

5'-UUUUUUUUUUUACAACUAUGUAAtt-3' (SEQ ID NO: 3330)
3'-CAAAAAAAAAAAAUGUUGAUACAUUAA-5' (SEQ ID NO: 2627)

KRAS-2487 Target: 5'-GTTTTTTTTTTTTACAACTATGTAATT-3' (SEQ ID NO: 4033)

5'-UUUUUUUUUUACAACUAUGUAAUtt-3' (SEQ ID NO: 3331)
3'-AAAAAAAAAAAAUGUUGAUACAUUAAA-5' (SEQ ID NO: 2628)

KRAS-2488 Target: 5'-TTTTTTTTTTTTACAACTATGTAATTT-3' (SEQ ID NO: 4034)

5'-UUUUUUUUUACAACUAUGUAAUUta-3' (SEQ ID NO: 3332)
3'-AAAAAAAAAAAUGUUGAUACAUUAAAU-5' (SEQ ID NO: 2629)

KRAS-2489 Target: 5'-TTTTTTTTTTTACAACTATGTAATTTA-3' (SEQ ID NO: 4035)

5'-UUUUUUUUACAACUAUGUAAUUUat-3' (SEQ ID NO: 3333)
3'-AAAAAAAAAAUGUUGAUACAUUAAAUA-5' (SEQ ID NO: 2630)

KRAS-2490 Target: 5'-TTTTTTTTTTACAACTATGTAATTTAT-3' (SEQ ID NO: 4036)

5'-UUUUUUUACAACUAUGUAAUUUAta-3' (SEQ ID NO: 3334)
3'-AAAAAAAAAUGUUGAUACAUUAAAUAU-5' (SEQ ID NO: 2631)

KRAS-2491 Target: 5'-TTTTTTTTTACAACTATGTAATTTATA-3' (SEQ ID NO: 4037)

5'-UUUUUUACAACUAUGUAAUUUAUat-3' (SEQ ID NO: 3335)
3'-AAAAAAAAUGUUGAUACAUUAAAUAUA-5' (SEQ ID NO: 2632)

KRAS-2492 Target: 5'-TTTTTTTTACAACTATGTAATTTATAT-3' (SEQ ID NO: 4038)

5'-UUUUUACAACUAUGUAAUUUAUAtt-3' (SEQ ID NO: 3336)
3'-AAAAAAAUGUUGAUACAUUAAAUAUAA-5' (SEQ ID NO: 2633)

KRAS-2493 Target: 5'-TTTTTTTACAACTATGTAATTTATATT-3' (SEQ ID NO: 4039)

5'-AACUAUGUAAUUUAUAUUCCAUUta-3' (SEQ ID NO: 3337)
3'-UGUUGAUACAUUAAAUAUAAGGUAAAU-5' (SEQ ID NO: 2634)

KRAS-2500 Target: 5'-ACAACTATGTAATTTATATTCCATTTA-3' (SEQ ID NO: 4040)

5'-ACUAUGUAAUUUAUAUUCCAUUUac-3' (SEQ ID NO: 3338)

3'-GUUGAUACAUUAAAUAUAAGGUAAAUG-5' (SEQ ID NO: 2635)

KRAS-2501 Target: 5'-CAACTATGTAATTTATATTCCATTTAC-3' (SEQ ID NO: 4041)

5'-CUAUGUAAUUUAUAUUCCAUUUAca-3' (SEQ ID NO: 3339)
3'-UUGAUACAUUAAAUAUAAGGUAAAUGU-5' (SEQ ID NO: 2636)

KRAS-2502 Target: 5'-AACTATGTAATTTATATTCCATTTACA-3' (SEQ ID NO: 4042)

5'-AAUUUAUAUUCCAUUUACAUAAGga-3' (SEQ ID NO: 3340)
3'-CAUUAAAUAUAAGGUAAAUGUAUUCCU-5' (SEQ ID NO: 2637)

KRAS-2508 Target: 5'-GTAATTTATATTCCATTTACATAAGGA-3' (SEQ ID NO: 4043)

5'-AUUUAUAUUCCAUUUACAUAAGGat-3' (SEQ ID NO: 3341)
3'-AUUAAAUAUAAGGUAAAUGUAUUCCUA-5' (SEQ ID NO: 2638)

KRAS-2509 Target: 5'-TAATTTATATTCCATTTACATAAGGAT-3' (SEQ ID NO: 4044)

5'-UUUAUAUUCCAUUUACAUAAGGAta-3' (SEQ ID NO: 3342)
3'-UUAAAUAUAAGGUAAAUGUAUUCCUAU-5' (SEQ ID NO: 2639)

KRAS-2510 Target: 5'-AATTTATATTCCATTTACATAAGGATA-3' (SEQ ID NO: 4045)

5'-UUAUAUUCCAUUUACAUAAGGAUac-3' (SEQ ID NO: 3343)
3'-UAAAUAUAAGGUAAAUGUAUUCCUAUG-5' (SEQ ID NO: 2640)

KRAS-2511 Target: 5'-ATTTATATTCCATTTACATAAGGATAC-3' (SEQ ID NO: 4046)

5'-UACAUAAGGAUACACUUAUUUGUca-3' (SEQ ID NO: 3344)
3'-AAAUGUAUUCCUAUGUGAAUAAACAGU-5' (SEQ ID NO: 2641)

KRAS-2523 Target: 5'-TTTACATAAGGATACACTTATTTGTCA-3' (SEQ ID NO: 4047)

5'-UAAGGAUACACUUAUUUGUCAAGct-3' (SEQ ID NO: 3345)
3'-GUAUUCCUAUGUGAAUAAACAGUUCGA-5' (SEQ ID NO: 2642)

KRAS-2527 Target: 5'-CATAAGGATACACTTATTTGTCAAGCT-3' (SEQ ID NO: 4048)

5'-AUCUGUAAAUUUUUAACCUAUGUta-3' (SEQ ID NO: 3346)
3'-GUUAGACAUUUAAAAAUUGGAUACAAU-5' (SEQ ID NO: 2643)

KRAS-2559 Target: 5'-CAATCTGTAAATTTTTAACCTATGTTA-3' (SEQ ID NO: 4049)

5'-UCUGUAAAUUUUUAACCUAUGUUac-3' (SEQ ID NO: 3347)
3'-UUAGACAUUUAAAAAUUGGAUACAAUG-5' (SEQ ID NO: 2644)

KRAS-2560 Target: 5'-AATCTGTAAATTTTTAACCTATGTTAC-3' (SEQ ID NO: 4050)

5'-CUGUAAAUUUUUAACCUAUGUUAca-3' (SEQ ID NO: 3348)
3'-UAGACAUUUAAAAAUUGGAUACAAUGU-5' (SEQ ID NO: 2645)

KRAS-2561 Target: 5'-ATCTGTAAATTTTTAACCTATGTTACA-3' (SEQ ID NO: 4051)

5'-UGCAAGAGGUGAAGUUUAUAUUUga-3' (SEQ ID NO: 3349)
3'-ACACGUUCUCCACUUCAAAUAUAAACU-5' (SEQ ID NO: 2646)

KRAS-2617 Target: 5'-TGTGCAAGAGGTGAAGTTTATATTTGA-3' (SEQ ID NO: 4052)

5'-CAAGAGGUGAAGUUUAUAUUUGAat-3' (SEQ ID NO: 3350)
3'-ACGUUCUCCACUUCAAAUAUAAACUUA-5' (SEQ ID NO: 2647)

KRAS-2619 Target: 5'-TGCAAGAGGTGAAGTTTATATTTGAAT-3' (SEQ ID NO: 4053)

5'-AAGAGGUGAAGUUUAUAUUUGAAta-3' (SEQ ID NO: 3351)
3'-CGUUCUCCACUUCAAAUAUAAACUUAU-5' (SEQ ID NO: 2648)

KRAS-2620 Target: 5'-GCAAGAGGTGAAGTTTATATTTGAATA-3' (SEQ ID NO: 4054)

5'-GAGGUGAAGUUUAUAUUUGAAUAtc-3' (SEQ ID NO: 3352)
3'-UUCUCCACUUCAAAUAUAAACUUAUAG-5' (SEQ ID NO: 2649)

KRAS-2622 Target: 5'-AAGAGGTGAAGTTTATATTTGAATATC-3' (SEQ ID NO: 4055)

5'-AGGUGAAGUUUAUAUUUGAAUAUcc-3' (SEQ ID NO: 3353)
3'-UCUCCACUUCAAAUAUAAACUUAUAGG-5' (SEQ ID NO: 2650)

KRAS-2623 Target: 5'-AGAGGTGAAGTTTATATTTGAATATCC-3' (SEQ ID NO: 4056)

5'-AAGUUUAUAUUUGAAUAUCCAUUct-3' (SEQ ID NO: 3354)
3'-ACUUCAAAUAUAAACUUAUAGGUAAGA-5' (SEQ ID NO: 2651)

KRAS-2628 Target: 5'-TGAAGTTTATATTTGAATATCCATTCT-3' (SEQ ID NO: 4057)

5'-ACUUGAUGCAGUUUUAAUACUUGta-3' (SEQ ID NO: 3355)
3'-ACUGAACUACGUCAAAAUUAUGAACAU-5' (SEQ ID NO: 2652)

KRAS-2716 Target: 5'-TGACTTGATGCAGTTTTAATACTTGTA-3' (SEQ ID NO: 4058)

5'-UUGAUGCAGUUUUAAUACUUGUAat-3' (SEQ ID NO: 3356)
3'-UGAACUACGUCAAAAUUAUGAACAUUA-5' (SEQ ID NO: 2653)

KRAS-2718 Target: 5'-ACTTGATGCAGTTTTAATACTTGTAAT-3' (SEQ ID NO: 4059)

5'-GAUUUGACCUAAUCACUAAUUUUca-3' (SEQ ID NO: 3357)
3'-CCCUAAACUGGAUUAGUGAUUAAAAGU-5' (SEQ ID NO: 2654)

KRAS-2869 Target: 5'-GGGATTTGACCTAATCACTAATTTTCA-3' (SEQ ID NO: 4060)

5'-ACCUAAUCACUAAUUUUCAGGUGgt-3' (SEQ ID NO: 3358)
3'-ACUGGAUUAGUGAUUAAAAGUCCACCA-5' (SEQ ID NO: 2655)

KRAS-2875 Target: 5'-TGACCTAATCACTAATTTTCAGGTGGT-3' (SEQ ID NO: 4061)

5'-CAGUAGGAUUUUUCAAACCUGGUat-3' (SEQ ID NO: 3359)
3'-CUGUCAUCCUAAAAAGUUUGGACCAUA-5' (SEQ ID NO: 2656)

KRAS-2944 Target: 5'-GACAGTAGGATTTTTCAAACCTGGTAT-3' (SEQ ID NO: 4062)

5'-AGUGGAAGGAGAAUUUAAUAAAGat-3' (SEQ ID NO: 3360)
3'-GGUCACCUUCCUCUUAAAUUAUUUCUA-5' (SEQ ID NO: 2657)

KRAS-2989 Target: 5'-CCAGTGGAAGGAGAATTTAATAAAGAT-3' (SEQ ID NO: 4063)

5'-GGAAGGAGAAUUUAAUAAAGAUAgt-3' (SEQ ID NO: 3361)
3'-CACCUUCCUCUUAAAUUAUUUCUAUCA-5' (SEQ ID NO: 2658)

KRAS-2992 Target: 5'-GTGGAAGGAGAATTTAATAAAGATAGT-3' (SEQ ID NO: 4064)

5'-AAGGAGAAUUUAAUAAAGAUAGUgc-3' (SEQ ID NO: 3362)
3'-CCUUCCUCUUAAAUUAUUUCUAUCACG-5' (SEQ ID NO: 2659)

KRAS-2994 Target: 5'-GGAAGGAGAATTTAATAAAGATAGTGC-3' (SEQ ID NO: 4065)

5'-AGGAGAAUUUAAUAAAGAUAGUGct-3' (SEQ ID NO: 3363)
3'-CUUCCUCUUAAAUUAUUUCUAUCACGA-5' (SEQ ID NO: 2660)

KRAS-2995 Target: 5'-GAAGGAGAATTTAATAAAGATAGTGCT-3' (SEQ ID NO: 4066)

5'-GAAUUUAAUAAAGAUAGUGCUGAaa-3' (SEQ ID NO: 3364)
3'-CUCUUAAAUUAUUUCUAUCACGACUUU-5' (SEQ ID NO: 2661)

KRAS-2999 Target: 5'-GAGAATTTAATAAAGATAGTGCTGAAA-3' (SEQ ID NO: 4067)

5'-UCCUUAGGUAAUCUAUAACUAGGac-3' (SEQ ID NO: 3365)
3'-UAAGGAAUCCAUUAGAUAUUGAUCCUG-5' (SEQ ID NO: 2662)

KRAS-3028 Target: 5'-ATTCCTTAGGTAATCTATAACTAGGAC-3' (SEQ ID NO: 4068)

5'-CCUUAGGUAAUCUAUAACUAGGAct-3' (SEQ ID NO: 3366)
3'-AAGGAAUCCAUUAGAUAUUGAUCCUGA-5' (SEQ ID NO: 2663)

KRAS-3029 Target: 5'-TTCCTTAGGTAATCTATAACTAGGACT-3' (SEQ ID NO: 4069)

5'-AACAGUAAUACAUUCCAUUGUUUta-3' (SEQ ID NO: 3367)
3'-CAUUGUCAUUAUGUAAGGUAACAAAAU-5' (SEQ ID NO: 2664)

KRAS-3063 Target: 5'-GTAACAGTAATACATTCCATTGTTTTA-3' (SEQ ID NO: 4070)

5'-CAGUAAUACAUUCCAUUGUUUUAgt-3' (SEQ ID NO: 3368)
3'-UUGUCAUUAUGUAAGGUAACAAAAUCA-5' (SEQ ID NO: 2665)

KRAS-3065 Target: 5'-AACAGTAATACATTCCATTGTTTTAGT-3' (SEQ ID NO: 4071)

5'-AGUAAUACAUUCCAUUGUUUUAGta-3' (SEQ ID NO: 3369)
3'-UGUCAUUAUGUAAGGUAACAAAAUCAU-5' (SEQ ID NO: 2666)

KRAS-3066 Target: 5'-ACAGTAATACATTCCATTGTTTTAGTA-3' (SEQ ID NO: 4072)

5'-GUAAUACAUUCCAUUGUUUUAGUaa-3' (SEQ ID NO: 3370)
3'-GUCAUUAUGUAAGGUAACAAAAUCAUU-5' (SEQ ID NO: 2667)

KRAS-3067 Target: 5'-CAGTAATACATTCCATTGTTTTAGTAA-3' (SEQ ID NO: 4073)

5'-CCAUUGUUUUAGUAACCAGAAAUct-3' (SEQ ID NO: 3371)
3'-AAGGUAACAAAAUCAUUGGUCUUUAGA-5' (SEQ ID NO: 2668)

KRAS-3077 Target: 5'-TTCCATTGTTTTAGTAACCAGAAATCT-3' (SEQ ID NO: 4074)

5'-ACCAGAAAUCUUCAUGCAAUGAAaa-3' (SEQ ID NO: 3372)
3'-AUUGGUCUUUAGAAGUACGUUACUUUU-5' (SEQ ID NO: 2669)

KRAS-3091 Target: 5'-TAACCAGAAATCTTCATGCAATGAAAA-3' (SEQ ID NO: 4075)

5'-UUCAUGCAAUGAAAAAUACUUUAat-3' (SEQ ID NO: 3373)
3'-AGAAGUACGUUACUUUUUAUGAAAUUA-5' (SEQ ID NO: 2670)

KRAS-3101 Target: 5'-TCTTCATGCAATGAAAAATACTTTAAT-3' (SEQ ID NO: 4076)

5'-AAUGAAAAAUACUUUAAUUCAUGaa-3' (SEQ ID NO: 3374)
3'-CGUUACUUUUUAUGAAAUUAAGUACUU-5' (SEQ ID NO: 2671)

KRAS-3108 Target: 5'-GCAATGAAAAATACTTTAATTCATGAA-3' (SEQ ID NO: 4077)

5'-UGAAAAAUACUUUAAUUCAUGAAgc-3' (SEQ ID NO: 3375)
3'-UUACUUUUUAUGAAAUUAAGUACUUCG-5' (SEQ ID NO: 2672)

KRAS-3110 Target: 5'-AATGAAAAATACTTTAATTCATGAAGC-3' (SEQ ID NO: 4078)

5'-GAAAAAUACUUUAAUUCAUGAAGct-3' (SEQ ID NO: 3376)
3'-UACUUUUUAUGAAAUUAAGUACUUCGA-5' (SEQ ID NO: 2673)

KRAS-3111 Target: 5'-ATGAAAAATACTTTAATTCATGAAGCT-3' (SEQ ID NO: 4079)

5'-UUCAUGAAGCUUACUUUUUUUUUtt-3' (SEQ ID NO: 3377)
3'-UUAAGUACUUCGAAUGAAAAAAAAAAA-5' (SEQ ID NO: 2674)

KRAS-3125 Target: 5'-AATTCATGAAGCTTACTTTTTTTTTTT-3' (SEQ ID NO: 4080)

5'-AUGAAGCUUACUUUUUUUUUUUGgt-3' (SEQ ID NO: 3378)
3'-AGUACUUCGAAUGAAAAAAAAAAAACCA-5' (SEQ ID NO: 2675)

KRAS-3128 Target: 5'-TCATGAAGCTTACTTTTTTTTTTTGGT-3' (SEQ ID NO: 4081)

5'-AGCUUACUUUUUUUUUUUGGUGUca-3' (SEQ ID NO: 3379)
3'-CUUCGAAUGAAAAAAAAAAACCACAGU-5' (SEQ ID NO: 2676)

KRAS-3132 Target: 5'-GAAGCTTACTTTTTTTTTTTGGTGTCA-3' (SEQ ID NO: 4082)

5'-UACUUUUUUUUUUUGGUGUCAGAgt-3' (SEQ ID NO: 3380)
3'-GAAUGAAAAAAAAAAACCACAGUCUCA-5' (SEQ ID NO: 2677)

KRAS-3136 Target: 5'-CTTACTTTTTTTTTTGGTGTCAGAGT-3' (SEQ ID NO: 4083)

5'-ACUUUUUUUUUUUGGUGUCAGAGtc-3' (SEQ ID NO: 3381)
3'-AAUGAAAAAAAAAAACCACAGUCUCAG-5' (SEQ ID NO: 2678)

KRAS-3137 Target: 5'-TTACTTTTTTTTTTGGTGTCAGAGTC-3' (SEQ ID NO: 4084)

5'-AACUAAUUUUUGUAUUUUUAGGAga-3' (SEQ ID NO: 3382)
3'-AGUUGAUUAAAAACAUAAAAAUCCUCU-5' (SEQ ID NO: 2679)

KRAS-3295 Target: 5'-TCAACTAATTTTTGTATTTTTAGGAGA-3' (SEQ ID NO: 4085)

5'-UAAUUUUUGUAUUUUUAGGAGAGac-3' (SEQ ID NO: 3383)
3'-UGAUUAAAAAACAUAAAAAUCCUCUCUG-5' (SEQ ID NO: 2680)

KRAS-3298 Target: 5'-ACTAATTTTTGTATTTTTAGGAGAGAC-3' (SEQ ID NO: 4086)

5'-CUCAUUUAUUCAGCAAAUAUUUAtt-3' (SEQ ID NO: 3384)
3'-UUGAGUAAAUAAGUCGUUUAUAAAUAA-5' (SEQ ID NO: 2681)

KRAS-3411 Target: 5'-AACTCATTTATTCAGCAAATATTTATT-3' (SEQ ID NO: 4087)

5'-CAUUUAUUCAGCAAAUAUUUAUUga-3' (SEQ ID NO: 3385)
3'-GAGUAAAUAAGUCGUUUAUAAAUAACU-5' (SEQ ID NO: 2682)

KRAS-3413 Target: 5'-CTCATTTATTCAGCAAATATTTATTGA-3' (SEQ ID NO: 4088)

5'-UUUAUUCAGCAAAUAUUUAUUGAgt-3' (SEQ ID NO: 3386)
3'-GUAAAUAAGUCGUUUAUAAAUAACUCA-5' (SEQ ID NO: 2683)

KRAS-3415 Target: 5'-CATTTATTCAGCAAATATTTATTGAGT-3' (SEQ ID NO: 4089)

5'-UAUUUUAGUUUUGCAAAGAAGGGgt-3' (SEQ ID NO: 3387)
3'-GCAUAAAAUCAAAACGUUUCUUCCCCA-5' (SEQ ID NO: 2684)

KRAS-3587 Target: 5'-CGTATTTTAGTTTTGCAAAGAAGGGGT-3' (SEQ ID NO: 4090)

5'-CUCUAUAAUUGUUUUGCUACGAUtc-3' (SEQ ID NO: 3388)
3'-UCGAGAUAUUAACAAAACGAUGCUAAG-5' (SEQ ID NO: 2685)

KRAS-3628 Target: 5'-AGCTCTATAATTGTTTTGCTACGATTC-3' (SEQ ID NO: 4091)

5'-UACUUUAUGUAAAUCACUUCAUUgt-3' (SEQ ID NO: 3389)
3'-CGAUGAAAUACAUUUAGUGAAGUAACA-5' (SEQ ID NO: 2686)

KRAS-3675 Target: 5'-GCTACTTTATGTAAATCACTTCATTGT-3' (SEQ ID NO: 4092)

5'-ACUUUAUGUAAAUCACUUCAUUGtt-3' (SEQ ID NO: 3390)
3'-GAUGAAAUACAUUUAGUGAAGUAACAA-5' (SEQ ID NO: 2687)

KRAS-3676 Target: 5'-CTACTTTATGTAAATCACTTCATTGTT-3' (SEQ ID NO: 4093)

5'-CUUUAUGUAAAUCACUUCAUUGUtt-3' (SEQ ID NO: 3391)

3'-AUGAAAUACAUUUAGUGAAGUAACAAA-5' (SEQ ID NO: 2688)

KRAS-3677 Target: 5'-TACTTTATGTAAATCACTTCATTGTTT-3' (SEQ ID NO: 4094)

5'-UUUAUGUAAAUCACUUCAUUGUUtt-3' (SEQ ID NO: 3392)
3'-UGAAAUACAUUUAGUGAAGUAACAAAA-5' (SEQ ID NO: 2689)

KRAS-3678 Target: 5'-ACTTTATGTAAATCACTTCATTGTTTT-3' (SEQ ID NO: 4095)

5'-UUAUGUAAAUCACUUCAUUGUUUta-3' (SEQ ID NO: 3393)
3'-GAAAUACAUUUAGUGAAGUAACAAAAU-5' (SEQ ID NO: 2690)

KRAS-3679 Target: 5'-CTTTATGTAAATCACTTCATTGTTTTA-3' (SEQ ID NO: 4096)

5'-UAUGUAAAUCACUUCAUUGUUUUaa-3' (SEQ ID NO: 3394)
3'-AAAUACAUUUAGUGAAGUAACAAAAUU-5' (SEQ ID NO: 2691)

KRAS-3680 Target: 5'-TTTATGTAAATCACTTCATTGTTTTAA-3' (SEQ ID NO: 4097)

5'-AUGUAAAUCACUUCAUUGUUUUAaa-3' (SEQ ID NO: 3395)
3'-AAUACAUUUAGUGAAGUAACAAAAUUU-5' (SEQ ID NO: 2692)

KRAS-3681 Target: 5'-TTATGTAAATCACTTCATTGTTTTAAA-3' (SEQ ID NO: 4098)

5'-AUUGUUUUAAAGGAAUAAACUUGat-3' (SEQ ID NO: 3396)
3'-AGUAACAAAAUUUCCUUAUUUGAACUA-5' (SEQ ID NO: 2693)

KRAS-3695 Target: 5'-TCATTGTTTTAAAGGAATAAACTTGAT-3' (SEQ ID NO: 4099)

5'-UUGUUUUAAAGGAAUAAACUUGAtt-3' (SEQ ID NO: 3397)
3'-GUAACAAAAUUUCCUUAUUUGAACUAA-5' (SEQ ID NO: 2694)

KRAS-3696 Target: 5'-CATTGTTTTAAAGGAATAAACTTGATT-3' (SEQ ID NO: 4100)

5'-UUUUAAAGGAAUAAACUUGAUUAta-3' (SEQ ID NO: 3398)
3'-ACAAAAUUUCCUUAUUUGAACUAAUAU-5' (SEQ ID NO: 2695)

KRAS-3699 Target: 5'-TGTTTTAAAGGAATAAACTTGATTATA-3' (SEQ ID NO: 4101)

5'-UUUAAAGGAAUAAACUUGAUUAUat-3' (SEQ ID NO: 3399)
3'-CAAAAUUUCCUUAUUUGAACUAAUAUA-5' (SEQ ID NO: 2696)

KRAS-3700 Target: 5'-GTTTTAAAGGAATAAACTTGATTATAT-3' (SEQ ID NO: 4102)

5'-UUAAAGGAAUAAACUUGAUUAUAtt-3' (SEQ ID NO: 3400)
3'-AAAAUUUCCUUAUUUGAACUAAUAUAA-5' (SEQ ID NO: 2697)

KRAS-3701 Target: 5'-TTTTAAAGGAATAAACTTGATTATATT-3' (SEQ ID NO: 4103)

5'-AAAGGAAUAAACUUGAUUAUAUUgt-3' (SEQ ID NO: 3401)
3'-AAUUUCCUUAUUUGAACUAAUAUAACA-5' (SEQ ID NO: 2698)

KRAS-3703 Target: 5'-TTAAAGGAATAAACTTGATTATATTGT-3' (SEQ ID NO: 4104)

5'-AAGGAAUAAACUUGAUUAUAUUGtt-3' (SEQ ID NO: 3402)
3'-AUUUCCUUAUUUGAACUAAUAUAACAA-5' (SEQ ID NO: 2699)

KRAS-3704 Target: 5'-TAAAGGAATAAACTTGATTATATTGTT-3' (SEQ ID NO: 4105)

5'-AGGAAUAAACUUGAUUAUAUUGUtt-3' (SEQ ID NO: 3403)
3'-UUUCCUUAUUUGAACUAAUAUAACAAA-5' (SEQ ID NO: 2700)

KRAS-3705 Target: 5'-AAAGGAATAAACTTGATTATATTGTTT-3' (SEQ ID NO: 4106)

5'-GGAAUAAACUUGAUUAUAUUGUUtt-3' (SEQ ID NO: 3404)
3'-UUCCUUAUUUGAACUAAUAUAACAAAA-5' (SEQ ID NO: 2701)

KRAS-3706 Target: 5'-AAGGAATAAACTTGATTATATTGTTTT-3' (SEQ ID NO: 4107)

5'-GAAUAAACUUGAUUAUAUUGUUUtt-3' (SEQ ID NO: 3405)
3'-UCCUUAUUUGAACUAAUAUAACAAAAA-5' (SEQ ID NO: 2702)

KRAS-3707 Target: 5'-AGGAATAAACTTGATTATATTGTTTTT-3' (SEQ ID NO: 4108)

5'-AACUUGAUUAUAUUGUUUUUUUAtt-3' (SEQ ID NO: 3406)
3'-AUUUGAACUAAUAUAACAAAAAAAUAA-5' (SEQ ID NO: 2703)

KRAS-3712 Target: 5'-TAAACTTGATTATATTGTTTTTTTATT-3' (SEQ ID NO: 4109)

5'-ACUUGAUUAUAUUGUUUUUUUAUtt-3' (SEQ ID NO: 3407)
3'-UUUGAACUAAUAUAACAAAAAAAUAAA-5' (SEQ ID NO: 2704)

KRAS-3713 Target: 5'-AAACTTGATTATATTGTTTTTTTATTT-3' (SEQ ID NO: 4110)

5'-UGAUUAUAUUGUUUUUUUAUUUGgc-3' (SEQ ID NO: 3408)
3'-GAACUAAUAUAACAAAAAAAUAAACCG-5' (SEQ ID NO: 2705)

KRAS-3716 Target: 5'-CTTGATTATATTGTTTTTTTATTTGGC-3' (SEQ ID NO: 4111)

5'-AUAUUGUUUUUUUAUUUGGCAUAac-3' (SEQ ID NO: 3409)
3'-AAUAUAACAAAAAAAUAAACCGUAUUG-5' (SEQ ID NO: 2706)

KRAS-3721 Target: 5'-TTATATTGTTTTTTTATTTGGCATAAC-3' (SEQ ID NO: 4112)

5'-UAUUGUUUUUUUAUUUGGCAUAAct-3' (SEQ ID NO: 3410)
3'-AUAUAACAAAAAAAUAAACCGUAUUGA-5' (SEQ ID NO: 2707)

KRAS-3722 Target: 5'-TATATTGTTTTTTTATTTGGCATAACT-3' (SEQ ID NO: 4113)

5'-GUUUUUUUAUUUGGCAUAACUGUga-3' (SEQ ID NO: 3411)
3'-AACAAAAAAAUAAACCGUAUUGACACU-5' (SEQ ID NO: 2708)

KRAS-3726 Target: 5'-TTGTTTTTTTATTTGGCATAACTGTGA-3' (SEQ ID NO: 4114)

5'-UUUUUUUAUUUGGCAUAACUGUGat-3' (SEQ ID NO: 3412)
3'-ACAAAAAAAUAAACCGUAUUGACACUA-5' (SEQ ID NO: 2709)

KRAS-3727 Target: 5'-TGTTTTTTTATTTGGCATAACTGTGAT-3' (SEQ ID NO: 4115)

5'-GCAUAACUGUGAUUCUUUUAGGAca-3' (SEQ ID NO: 3413)
3'-ACCGUAUUGACACUAAGAAAAUCCUGU-5' (SEQ ID NO: 2710)

KRAS-3739 Target: 5'-TGGCATAACTGTGATTCTTTTAGGACA-3' (SEQ ID NO: 4116)

5'-ACUGUGAUUCUUUUAGGACAAUUac-3' (SEQ ID NO: 3414)
3'-AUUGACACUAAGAAAAUCCUGUUAAUG-5' (SEQ ID NO: 2711)

KRAS-3744 Target: 5'-TAACTGTGATTCTTTTAGGACAATTAC-3' (SEQ ID NO: 4117)

5'-CUGUGAUUCUUUUAGGACAAUUAct-3' (SEQ ID NO: 3415)
3'-UUGACACUAAGAAAAUCCUGUUAAUGA-5' (SEQ ID NO: 2712)

KRAS-3745 Target: 5'-AACTGTGATTCTTTTAGGACAATTACT-3' (SEQ ID NO: 4118)

5'-GGUGUAUGUCAGAUAUUCAUAUUga-3' (SEQ ID NO: 3416)
3'-UUCCACAUACAGUCUAUAAGUAUAACU-5' (SEQ ID NO: 2713)

KRAS-3781 Target: 5'-AAGGTGTATGTCAGATATTCATATTGA-3' (SEQ ID NO: 4119)

5'-GUGUAUGUCAGAUAUUCAUAUUGac-3' (SEQ ID NO: 3417)
3'-UCCACAUACAGUCUAUAAGUAUAACUG-5' (SEQ ID NO: 2714)

KRAS-3782 Target: 5'-AGGTGTATGTCAGATATTCATATTGAC-3' (SEQ ID NO: 4120)

5'-CAAAUGUGUAAUAUUCCAGUUUUct-3' (SEQ ID NO: 3418)
3'-GGGUUUACACAUUAUAAGGUCAAAAGA-5' (SEQ ID NO: 2715)

KRAS-3808 Target: 5'-CCCAAATGTGTAATATTCCAGTTTTCT-3' (SEQ ID NO: 4121)

5'-CAUAAGUAAUUAAAAAUAUACUUAaa-3' (SEQ ID NO: 3419)
3'-ACGUAUUCAUUAAUUUUAUAUGAAUUU-5' (SEQ ID NO: 2716)

KRAS-3836 Target: 5'-TGCATAAGTAATTAAAATATACTTAAA-3' (SEQ ID NO: 4122)

5'-AUAAGUAAUUAAAAAUAUACUUAAaa-3' (SEQ ID NO: 3420)
3'-CGUAUUCAUUAAUUUUAUAUGAAUUUU-5' (SEQ ID NO: 2717)

KRAS-3837 Target: 5'-GCATAAGTAATTAAAATATACTTAAAA-3' (SEQ ID NO: 4123)

5'-UAAGUAAUUAAAAAUAUACUUAAAaa-3' (SEQ ID NO: 3421)
3'-GUAUUCAUUAAUUUUAUAUGAAUUUUU-5' (SEQ ID NO: 2718)

KRAS-3838 Target: 5'-CATAAGTAATTAAAATATACTTAAAAA-3' (SEQ ID NO: 4124)

5'-AAGUAAUUAAAAAUAUACUUAAAAat-3' (SEQ ID NO: 3422)
3'-UAUUCAUUAAUUUUAUAUGAAUUUUUA-5' (SEQ ID NO: 2719)

KRAS-3839 Target: 5'-ATAAGTAATTAAAATATACTTAAAAAT-3' (SEQ ID NO: 4125)

5'-AGUAAUUAAAAAUAUACUUAAAAAtt-3' (SEQ ID NO: 3423)
3'-AUUCAUUAAUUUUAUAUGAAUUUUUAA-5' (SEQ ID NO: 2720)

KRAS-3840 Target: 5'-TAAGTAATTAAAATATACTTAAAAATT-3' (SEQ ID NO: 4126)

5'-GUAAUUAAAAAUAUACUUAAAAAUta-3' (SEQ ID NO: 3424)
3'-UUCAUUAAUUUUAUAUGAAUUUUUAAU-5' (SEQ ID NO: 2721)

KRAS-3841 Target: 5'-AAGTAATTAAAATATACTTAAAAATTA-3' (SEQ ID NO: 4127)

5'-UAAUUAAAAAUAUACUUAAAAAAUUaa-3' (SEQ ID NO: 3425)
3'-UCAUUAAUUUUAUAUGAAUUUUUAAUU-5' (SEQ ID NO: 2722)

KRAS-3842 Target: 5'-AGTAATTAAAATATACTTAAAAATTAA-3' (SEQ ID NO: 4128)

5'-AAUUAAAAAUAUACUUAAAAAAUUAat-3' (SEQ ID NO: 3426)
3'-CAUUAAUUUUAUAUGAAUUUUUAAUUA-5' (SEQ ID NO: 2723)

KRAS-3843 Target: 5'-GTAATTAAAATATACTTAAAAATTAAT-3' (SEQ ID NO: 4129)

5'-AUUAAAAAUAUACUUAAAAAAUUAAta-3' (SEQ ID NO: 3427)
3'-AUUAAUUUUAUAUGAAUUUUUAAUUAU-5' (SEQ ID NO: 2724)

KRAS-3844 Target: 5'-TAATTAAAATATACTTAAAAATTAATA-3' (SEQ ID NO: 4130)

5'-UAAAAUAUACUUAAAAAAUUAAUAgt-3' (SEQ ID NO: 3428)
3'-UAAUUUUAUAUGAAUUUUUAAUUAUCA-5' (SEQ ID NO: 2725)

KRAS-3846 Target: 5'-ATTAAAATATACTTAAAAATTAATAGT-3' (SEQ ID NO: 4131)

5'-AAAAUAUACUUAAAAAAUUAAUAGtt-3' (SEQ ID NO: 3429)
3'-AAUUUUAUAUGAAUUUUUAAUUAUCAA-5' (SEQ ID NO: 2726)

KRAS-3847 Target: 5'-TTAAAATATACTTAAAAATTAATAGTT-3' (SEQ ID NO: 4132)

5'-AAAUAUACUUAAAAAAUUAAUAGUtt-3' (SEQ ID NO: 3430)
3'-AUUUUAUAUGAAUUUUUAAUUAUCAAA-5' (SEQ ID NO: 2727)

KRAS-3848 Target: 5'-TAAAATATACTTAAAAATTAATAGTTT-3' (SEQ ID NO: 4133)

5'-AAUAUACUUAAAAAUUAAUAGUUtt-3' (SEQ ID NO: 3431)
3'-UUUUAUAUGAAUUUUUAAUUAUCAAAA-5' (SEQ ID NO: 2728)

KRAS-3849 Target: 5'-AAAATATACTTAAAAATTAATAGTTTT-3' (SEQ ID NO: 4134)

5'-UACUUAAAAAUUAAUAGUUUUAUct-3' (SEQ ID NO: 3432)
3'-AUAUGAAUUUUUAAUUAUCAAAAUAGA-5' (SEQ ID NO: 2729)

KRAS-3853 Target: 5'-TATACTTAAAAATTAATAGTTTTATCT-3' (SEQ ID NO: 4135)

5'-UAAAAAUUAAUAGUUUUAUCUGGgt-3' (SEQ ID NO: 3433)
3'-GAAUUUUUAAUUAUCAAAAUAGACCCA-5' (SEQ ID NO: 2730)

KRAS-3857 Target: 5'-CTTAAAAATTAATAGTTTTATCTGGGT-3' (SEQ ID NO: 4136)

5'-AAAAAUUAAUAGUUUUAUCUGGGta-3' (SEQ ID NO: 3434)
3'-AAUUUUUAAUUAUCAAAAUAGACCCAU-5' (SEQ ID NO: 2731)

KRAS-3858 Target: 5'-TTAAAAATTAATAGTTTTATCTGGGTA-3' (SEQ ID NO: 4137)

5'-AAAAUUAAUAGUUUUAUCUGGGUac-3' (SEQ ID NO: 3435)
3'-AUUUUUAAUUAUCAAAAUAGACCCAUG-5' (SEQ ID NO: 2732)

KRAS-3859 Target: 5'-TAAAAATTAATAGTTTTATCTGGGTAC-3' (SEQ ID NO: 4138)

5'-AUCUGGGUACAAAUAAACAGGUGcc-3' (SEQ ID NO: 3436)
3'-AAUAGACCCAUGUUUAUUUGUCCACGG-5' (SEQ ID NO: 2733)

KRAS-3874 Target: 5'-TTATCTGGGTACAAATAAACAGGTGCC-3' (SEQ ID NO: 4139)

5'-GACAAGGAAACUUCUAUGUAAAAat-3' (SEQ ID NO: 3437)
3'-GUCUGUUCCUUUGAAGAUACAUUUUUA-5' (SEQ ID NO: 2734)

KRAS-3913 Target: 5'-CAGACAAGGAAACTTCTATGTAAAAAT-3' (SEQ ID NO: 4140)

5'-ACAAGGAAACUUCUAUGUAAAAAtc-3' (SEQ ID NO: 3438)
3'-UCUGUUCCUUUGAAGAUACAUUUUUAG-5' (SEQ ID NO: 2735)

KRAS-3914 Target: 5'-AGACAAGGAAACTTCTATGTAAAAATC-3' (SEQ ID NO: 4141)

5'-CAAGGAAACUUCUAUGUAAAAAUca-3' (SEQ ID NO: 3439)
3'-CUGUUCCUUUGAAGAUACAUUUUUAGU-5' (SEQ ID NO: 2736)

KRAS-3915 Target: 5'-GACAAGGAAACTTCTATGTAAAAATCA-3' (SEQ ID NO: 4142)

5'-UUCUAUGUAAAAAUCACUAUGAUtt-3' (SEQ ID NO: 3440)
3'-UGAAGAUACAUUUUUAGUGAUACUAAA-5' (SEQ ID NO: 2737)

KRAS-3924 Target: 5'-ACTTCTATGTAAAAATCACTATGATTT-3' (SEQ ID NO: 4143)

5'-UCUAUGUAAAAAUCACUAUGAUUtc-3' (SEQ ID NO: 3441)
3'-GAAGAUACAUUUUUAGUGAUACUAAAG-5' (SEQ ID NO: 2738)

KRAS-3925 Target: 5'-CTTCTATGTAAAAATCACTATGATTTC-3' (SEQ ID NO: 4144)

5'-CUAUGUAAAAAUCACUAUGAUUUct-3' (SEQ ID NO: 3442)
3'-AAGAUACAUUUUUAGUGAUACUAAAGA-5' (SEQ ID NO: 2739)

KRAS-3926 Target: 5'-TTCTATGTAAAAATCACTATGATTTCT-3' (SEQ ID NO: 4145)

5'-GUAAAAAUCACUAUGAUUUCUGAat-3' (SEQ ID NO: 3443)
3'-UACAUUUUUAGUGAUACUAAAGACUUA-5' (SEQ ID NO: 2740)

KRAS-3930 Target: 5'-ATGTAAAAATCACTATGATTTCTGAAT-3' (SEQ ID NO: 4146)

5'-UAAAAAUCACUAUGAUUUCUGAAtt-3' (SEQ ID NO: 3444)

3'-ACAUUUUUAGUGAUACUAAAGACUUAA-5' (SEQ ID NO: 2741)

KRAS-3931 Target: 5'-TGTAAAAATCACTATGATTTCTGAATT-3' (SEQ ID NO: 4147)

5'-CUAUGAUUUCUGAAUUGCUAUGUga-3' (SEQ ID NO: 3445)
3'-GUGAUACUAAAGACUUAACGAUACACU-5' (SEQ ID NO: 2742)

KRAS-3940 Target: 5'-CACTATGATTTCTGAATTGCTATGTGA-3' (SEQ ID NO: 4148)

5'-UAUGAUUUCUGAAUUGCUAUGUGaa-3' (SEQ ID NO: 3446)
3'-UGAUACUAAAGACUUAACGAUACACUU-5' (SEQ ID NO: 2743)

KRAS-3941 Target: 5'-ACTATGATTTCTGAATTGCTATGTGAA-3' (SEQ ID NO: 4149)

5'-UAUGUGAAACUACAGAUCUUUGGaa-3' (SEQ ID NO: 3447)
3'-CGAUACACUUUGAUGUCUAGAAACCUU-5' (SEQ ID NO: 2744)

KRAS-3958 Target: 5'-GCTATGTGAAACTACAGATCTTTGGAA-3' (SEQ ID NO: 4150)

5'-AUGUGAAACUACAGAUCUUUGGAac-3' (SEQ ID NO: 3448)
3'-GAUACACUUUGAUGUCUAGAAACCUUG-5' (SEQ ID NO: 2745)

KRAS-3959 Target: 5'-CTATGTGAAACTACAGATCTTTGGAAC-3' (SEQ ID NO: 4151)

5'-AGGGUGUUAAGACUUACACAGUAcc-3' (SEQ ID NO: 3449)
3'-CAUCCCACAAUUCUGAAUGUGUCAUGG-5' (SEQ ID NO: 2746)

KRAS-3995 Target: 5'-GTAGGGTGTTAAGACTTACACAGTACC-3' (SEQ ID NO: 4152)

5'-UUUAGGCCUCUUGAAUUUUUGAUgt-3' (SEQ ID NO: 3450)
3'-AUAAAUCCGGAGAACUUAAAAACUACA-5' (SEQ ID NO: 2747)

KRAS-4082 Target: 5'-TATTTAGGCCTCTTGAATTTTTGATGT-3' (SEQ ID NO: 4153)

5'-UCUUGAAUUUUUGAUGUAGAUGGgc-3' (SEQ ID NO: 3451)
3'-GGAGAACUUAAAAACUACAUCUACCCG-5' (SEQ ID NO: 2748)

KRAS-4090 Target: 5'-CCTCTTGAATTTTTGATGTAGATGGGC-3' (SEQ ID NO: 4154)

5'-CUUGAAUUUUUGAUGUAGAUGGGca-3' (SEQ ID NO: 3452)
3'-GAGAACUUAAAAACUACAUCUACCCGU-5' (SEQ ID NO: 2749)

KRAS-4091 Target: 5'-CTCTTGAATTTTTGATGTAGATGGGCA-3' (SEQ ID NO: 4155)

5'-UAGAUGGGCAUUUUUUUAAGGUAgt-3' (SEQ ID NO: 3453)
3'-ACAUCUACCCGUAAAAAAAAUUCCAUCA-5' (SEQ ID NO: 2750)

KRAS-4106 Target: 5'-TGTAGATGGGCATTTTTTTAAGGTAGT-3' (SEQ ID NO: 4156)

5'-GGCAUUUUUUUAAGGUAGUGGUUaa-3' (SEQ ID NO: 3454)
3'-ACCCGUAAAAAAAUUCCAUCACCAAUU-5' (SEQ ID NO: 2751)

KRAS-4112 Target: 5'-TGGGCATTTTTTTAAGGTAGTGGTTAA-3' (SEQ ID NO: 4157)

5'-AGGUAGUGGUUAAUUACCUUUAUgt-3' (SEQ ID NO: 3455)
3'-AUUCCAUCACCAAUUAAUGGAAAAUACA-5' (SEQ ID NO: 2752)

KRAS-4124 Target: 5'-TAAGGTAGTGGTTAATTACCTTTATGT-3' (SEQ ID NO: 4158)

5'-GUAGUGGUUAAUUACCUUUAUGUga-3' (SEQ ID NO: 3456)
3'-UCCAUCACCAAUUAAUGGAAAUACACU-5' (SEQ ID NO: 2753)

KRAS-4126 Target: 5'-AGGTAGTGGTTAATTACCTTTATGTGA-3' (SEQ ID NO: 4159)

5'-UAGUGGUUAAUUACCUUUAUGUGaa-3' (SEQ ID NO: 3457)
3'-CCAUCACCAAUUAAUGGAAAUACACUU-5' (SEQ ID NO: 2754)

KRAS-4127 Target: 5'-GGTAGTGGTTAATTACCTTTATGTGAA-3' (SEQ ID NO: 4160)

5'-AGUGGUUAAUUACCUUUAUGUGAac-3' (SEQ ID NO: 3458)
3'-CAUCACCAAUUAAUGGAAAUACACUUG-5' (SEQ ID NO: 2755)

KRAS-4128 Target: 5'-GTAGTGGTTAATTACCTTTATGTGAAC-3' (SEQ ID NO: 4161)

5'-GUGGUUAAUUACCUUUAUGUGAAct-3' (SEQ ID NO: 3459)
3'-AUCACCAAUUAAUGGAAAUACACUUGA-5' (SEQ ID NO: 2756)

KRAS-4129 Target: 5'-TAGTGGTTAATTACCTTTATGTGAACT-3' (SEQ ID NO: 4162)

5'-ACCUUUAUGUGAACUUUGAAUGGtt-3' (SEQ ID NO: 3460)
3'-AAUGGAAAUACACUUGAAACUUACCAA-5' (SEQ ID NO: 2757)

KRAS-4139 Target: 5'-TTACCTTTATGTGAACTTTGAATGGTT-3' (SEQ ID NO: 4163)

5'-UAUGUGAACUUUGAAUGGUUUAAca-3' (SEQ ID NO: 3461)
3'-AAAUACACUUGAAACUUACCAAAUUGU-5' (SEQ ID NO: 2758)

KRAS-4144 Target: 5'-TTTATGTGAACTTTGAATGGTTTAACA-3' (SEQ ID NO: 4164)

5'-AACUUUGAAUGGUUUAACAAAAGat-3' (SEQ ID NO: 3462)
3'-ACUUGAAACUUACCAAAUUGUUUUCUA-5' (SEQ ID NO: 2759)

KRAS-4150 Target: 5'-TGAACTTTGAATGGTTTAACAAAAGAT-3' (SEQ ID NO: 4165)

5'-UUGAAUGGUUUAACAAAAGAUUUgt-3' (SEQ ID NO: 3463)
3'-GAAACUUACCAAAUUGUUUUCUAAACA-5' (SEQ ID NO: 2760)

KRAS-4154 Target: 5'-CTTTGAATGGTTTAACAAAAGATTTGT-3' (SEQ ID NO: 4166)

5'-UGAAUGGUUUAACAAAAGAUUUGtt-3' (SEQ ID NO: 3464)
3'-AAACUUACCAAAUUGUUUUCUAAACAA-5' (SEQ ID NO: 2761)

KRAS-4155 Target: 5'-TTTGAATGGTTTAACAAAAGATTTGTT-3' (SEQ ID NO: 4167)

5'-GAAUGGUUUAACAAAAGAUUUGUtt-3' (SEQ ID NO: 3465)
3'-AACUUACCAAAUUGUUUUCUAAACAAA-5' (SEQ ID NO: 2762)

KRAS-4156 Target: 5'-TTGAATGGTTTAACAAAAGATTTGTTT-3' (SEQ ID NO: 4168)

5'-AAUGGUUUAACAAAAGAUUUGUUtt-3' (SEQ ID NO: 3466)
3'-ACUUACCAAAUUGUUUUCUAAACAAAA-5' (SEQ ID NO: 2763)

KRAS-4157 Target: 5'-TGAATGGTTTAACAAAAGATTTGTTTT-3' (SEQ ID NO: 4169)

5'-AUGGUUUAACAAAAGAUUUGUUUtt-3' (SEQ ID NO: 3467)
3'-CUUACCAAAUUGUUUUCUAAACAAAAA-5' (SEQ ID NO: 2764)

KRAS-4158 Target: 5'-GAATGGTTTAACAAAAGATTTGTTTTT-3' (SEQ ID NO: 4170)

5'-GGUUUAACAAAAGAUUUGUUUUUgt-3' (SEQ ID NO: 3468)
3'-UACCAAAUUGUUUUCUAAACAAAAACA-5' (SEQ ID NO: 2765)

KRAS-4160 Target: 5'-ATGGTTTAACAAAAGATTTGTTTTTGT-3' (SEQ ID NO: 4171)

5'-GUUUAACAAAAGAUUUGUUUUUGta-3' (SEQ ID NO: 3469)
3'-ACCAAAUUGUUUUCUAAACAAAAACAU-5' (SEQ ID NO: 2766)

KRAS-4161 Target: 5'-TGGTTTAACAAAAGATTTGTTTTTGTA-3' (SEQ ID NO: 4172)

5'-AACAAAAGAUUUGUUUUUGUAGAga-3' (SEQ ID NO: 3470)
3'-AAUUGUUUUCUAAACAAAAACAUCUCU-5' (SEQ ID NO: 2767)

KRAS-4165 Target: 5'-TTAACAAAAGATTTGTTTTTGTAGAGA-3' (SEQ ID NO: 4173)

5'-ACAAAAGAUUUGUUUUUGUAGAGat-3' (SEQ ID NO: 3471)
3'-AUUGUUUUCUAAACAAAAACAUCUCUA-5' (SEQ ID NO: 2768)

KRAS-4166 Target: 5'-TAACAAAAGATTTGTTTTTGTAGAGAT-3' (SEQ ID NO: 4174)

5'-CAAAAGAUUUGUUUUUGUAGAGAtt-3' (SEQ ID NO: 3472)
3'-UUGUUUUCUAAACAAAAACAUCUCUAA-5' (SEQ ID NO: 2769)

KRAS-4167 Target: 5'-AACAAAAGATTTGTTTTTGTAGAGATT-3' (SEQ ID NO: 4175)

5'-AAAGAUUUGUUUUUGUAGAGAUUtt-3' (SEQ ID NO: 3473)
3'-GUUUUCUAAACAAAAACAUCUCUAAAA-5' (SEQ ID NO: 2770)

KRAS-4169 Target: 5'-CAAAAGATTTGTTTTTGTAGAGATTTT-3' (SEQ ID NO: 4176)

5'-AAGAUUUGUUUUUGUAGAGAUUUta-3' (SEQ ID NO: 3474)
3'-UUUUCUAAACAAAAACAUCUCUAAAAU-5' (SEQ ID NO: 2771)

KRAS-4170 Target: 5'-AAAAGATTTGTTTTTGTAGAGATTTTA-3' (SEQ ID NO: 4177)

5'-AGAUUUGUUUUUGUAGAGAUUUUaa-3' (SEQ ID NO: 3475)
3'-UUUCUAAACAAAAACAUCUCUAAAAUU-5' (SEQ ID NO: 2772)

KRAS-4171 Target: 5'-AAAGATTTGTTTTTGTAGAGATTTTAA-3' (SEQ ID NO: 4178)

5'-GAUUUGUUUUUGUAGAGAUUUUAaa-3' (SEQ ID NO: 3476)
3'-UUCUAAACAAAAACAUCUCUAAAAUUU-5' (SEQ ID NO: 2773)

KRAS-4172 Target: 5'-AAGATTTGTTTTTGTAGAGATTTTAAA-3' (SEQ ID NO: 4179)

5'-UUUUUGUAGAGAUUUUAAAGGGGga-3' (SEQ ID NO: 3477)
3'-ACAAAAAACAUCUCUAAAAUUUCCCCCU-5' (SEQ ID NO: 2774)

KRAS-4178 Target: 5'-TGTTTTTGTAGAGATTTTAAAGGGGGA-3' (SEQ ID NO: 4180)

5'-AAGGGGGAGAAUUCUAGAAAUAAat-3' (SEQ ID NO: 3478)
3'-AUUUCCCCCCUCUUAAGAUCUUUAUUUA-5' (SEQ ID NO: 2775)

KRAS-4195 Target: 5'-TAAAGGGGGAGAATTCTAGAAATAAAT-3' (SEQ ID NO: 4181)

5'-GGGGGAGAAUUCUAGAAAUAAAUgt-3' (SEQ ID NO: 3479)
3'-UUCCCCCUCUUAAGAUCUUUAUUUACA-5' (SEQ ID NO: 2776)

KRAS-4197 Target: 5'-AAGGGGGAGAATTCTAGAAATAAATGT-3' (SEQ ID NO: 4182)

5'-GGGGAGAAUUCUAGAAAUAAAUGtt-3' (SEQ ID NO: 3480)
3'-UCCCCCUCUUAAGAUCUUUAUUUACAA-5' (SEQ ID NO: 2777)

KRAS-4198 Target: 5'-AGGGGGAGAATTCTAGAAATAAATGTT-3' (SEQ ID NO: 4183)

5'-GGGAGAAUUCUAGAAAUAAAUGUta-3' (SEQ ID NO: 3481)
3'-CCCCCUCUUAAGAUCUUUAUUUACAAU-5' (SEQ ID NO: 2778)

KRAS-4199 Target: 5'-GGGGGAGAATTCTAGAAATAAATGTTA-3' (SEQ ID NO: 4184)

5'-GGAGAAUUCUAGAAAUAAAUGUUac-3' (SEQ ID NO: 3482)
3'-CCCCUCUUAAGAUCUUUAUUUACAAUG-5' (SEQ ID NO: 2779)

KRAS-4200 Target: 5'-GGGGAGAATTCTAGAAATAAATGTTAC-3' (SEQ ID NO: 4185)

5'-GAGAAUUCUAGAAAUAAAUGUUAcc-3' (SEQ ID NO: 3483)
3'-CCCUCUUAAGAUCUUUAUUUACAAUGG-5' (SEQ ID NO: 2780)

KRAS-4201 Target: 5'-GGGAGAATTCTAGAAATAAATGTTACC-3' (SEQ ID NO: 4186)

5'-UUCUAGAAAUAAAUGUUACCUAAtt-3' (SEQ ID NO: 3484)
3'-UUAAGAUCUUUAUUUACAAUGGAUUAA-5' (SEQ ID NO: 2781)

KRAS-4206 Target: 5'-AATTCTAGAAATAAATGTTACCTAATT-3' (SEQ ID NO: 4187)

5'-UCUAGAAAUAAAUGUUACCUAAUta-3' (SEQ ID NO: 3485)
3'-UAAGAUCUUUAUUUACAAUGGAUUAAU-5' (SEQ ID NO: 2782)

KRAS-4207 Target: 5'-ATTCTAGAAATAAATGTTACCTAATTA-3' (SEQ ID NO: 4188)

5'-CUAGAAAUAAAUGUUACCUAAUUat-3' (SEQ ID NO: 3486)
3'-AAGAUCUUUAUUUACAAUGGAUUAAUA-5' (SEQ ID NO: 2783)

KRAS-4208 Target: 5'-TTCTAGAAATAAATGTTACCTAATTAT-3' (SEQ ID NO: 4189)

5'-UAGAAAUAAAUGUUACCUAAUUAtt-3' (SEQ ID NO: 3487)
3'-AGAUCUUUAUUUACAAUGGAUUAAUAA-5' (SEQ ID NO: 2784)

KRAS-4209 Target: 5'-TCTAGAAATAAATGTTACCTAATTATT-3' (SEQ ID NO: 4190)

5'-AGAAAUAAAUGUUACCUAAUUAUta-3' (SEQ ID NO: 3488)
3'-GAUCUUUAUUUACAAUGGAUUAAUAAU-5' (SEQ ID NO: 2785)

KRAS-4210 Target: 5'-CTAGAAATAAATGTTACCTAATTATTA-3' (SEQ ID NO: 4191)

5'-AAAUAAAUGUUACCUAAUUAUUAca-3' (SEQ ID NO: 3489)
3'-UCUUUAUUUACAAUGGAUUAAUAAUGU-5' (SEQ ID NO: 2786)

KRAS-4212 Target: 5'-AGAAATAAATGTTACCTAATTATTACA-3' (SEQ ID NO: 4192)

5'-ACCUAAUUAUUACAGCCUUAAAGac-3' (SEQ ID NO: 3490)
3'-AAUGGAUUAAUAAUGUCGGAAUUUCUG-5' (SEQ ID NO: 2787)

KRAS-4223 Target: 5'-TTACCTAATTATTACAGCCTTAAAGAC-3' (SEQ ID NO: 4193)

5'-CCUAAUUAUUACAGCCUUAAAGAca-3' (SEQ ID NO: 3491)
3'-AUGGAUUAAUAAUGUCGGAAUUUCUGU-5' (SEQ ID NO: 2788)

KRAS-4224 Target: 5'-TACCTAATTATTACAGCCTTAAAGACA-3' (SEQ ID NO: 4194)

5'-CCUUAAAGACAAAAAUCCUUGUUga-3' (SEQ ID NO: 3492)
3'-UCGGAAUUUCUGUUUUUAGGAACAACU-5' (SEQ ID NO: 2789)

KRAS-4238 Target: 5'-AGCCTTAAAGACAAAAATCCTTGTTGA-3' (SEQ ID NO: 4195)

5'-UAAAGACAAAAAUCCUUGUUGAAgt-3' (SEQ ID NO: 3493)
3'-GAAUUUCUGUUUUUAGGAACAACUUCA-5' (SEQ ID NO: 2790)

KRAS-4241 Target: 5'-CTTAAAGACAAAAATCCTTGTTGAAGT-3' (SEQ ID NO: 4196)

5'-UCCUUGUUGAAGUUUUUUUAAAAaa-3' (SEQ ID NO: 3494)
3'-UUAGGAACAACUUCAAAAAAAUUUUUU-5' (SEQ ID NO: 2791)

KRAS-4253 Target: 5'-AATCCTTGTTGAAGTTTTTTTAAAAAA-3' (SEQ ID NO: 4197)

5'-CCUUGUUGAAGUUUUUUUAAAAAaa-3' (SEQ ID NO: 3495)
3'-UAGGAACAACUUCAAAAAAAUUUUUUU-5' (SEQ ID NO: 2792)

KRAS-4254 Target: 5'-ATCCTTGTTGAAGTTTTTTTAAAAAAA-3' (SEQ ID NO: 4198)

5'-UUGUUGAAGUUUUUUUAAAAAAAgc-3' (SEQ ID NO: 3496)
3'-GGAACAACUUCAAAAAAAUUUUUUUCG-5' (SEQ ID NO: 2793)

KRAS-4256 Target: 5'-CCTTGTTGAAGTTTTTTTAAAAAAAGC-3' (SEQ ID NO: 4199)

5'-UGUUGAAGUUUUUUUAAAAAAAGct-3' (SEQ ID NO: 3497)

3'-GAACAACUUCAAAAAAAUUUUUUUCGA-5' (SEQ ID NO: 2794)

KRAS-4257 Target: 5'-CTTGTTGAAGTTTTTTTAAAAAAAGCT-3' (SEQ ID NO: 4200)

5'-GAAGUUUUUUUAAAAAAAGCUAAat-3' (SEQ ID NO: 3498)
3'-AACUUCAAAAAAAUUUUUUUCGAUUUA-5' (SEQ ID NO: 2795)

KRAS-4261 Target: 5'-TTGAAGTTTTTTTAAAAAAAGCTAAAT-3' (SEQ ID NO: 4201)

5'-AAGUUUUUUUAAAAAAAGCUAAAtt-3' (SEQ ID NO: 3499)
3'-ACUUCAAAAAAAUUUUUUUCGAUUUAA-5' (SEQ ID NO: 2796)

KRAS-4262 Target: 5'-TGAAGTTTTTTTAAAAAAAGCTAAATT-3' (SEQ ID NO: 4202)

5'-AGUUUUUUUAAAAAAAGCUAAAUta-3' (SEQ ID NO: 3500)
3'-CUUCAAAAAAAUUUUUUUCGAUUUAAU-5' (SEQ ID NO: 2797)

KRAS-4263 Target: 5'-GAAGTTTTTTTAAAAAAAGCTAAATTA-3' (SEQ ID NO: 4203)

5'-GUUUUUUUAAAAAAAGCUAAAUUac-3' (SEQ ID NO: 3501)
3'-UUCAAAAAAAUUUUUUUCGAUUUAAUG-5' (SEQ ID NO: 2798)

KRAS-4264 Target: 5'-AAGTTTTTTTAAAAAAAGCTAAATTAC-3' (SEQ ID NO: 4204)

5'-UUUUUUUAAAAAAAGCUAAAUUAca-3' (SEQ ID NO: 3502)
3'-UCAAAAAAAUUUUUUUCGAUUUAAUGU-5' (SEQ ID NO: 2799)

KRAS-4265 Target: 5'-AGTTTTTTTAAAAAAAGCTAAATTACA-3' (SEQ ID NO: 4205)

5'-UUUAAAAAAAGCUAAAUUACAUAga-3' (SEQ ID NO: 3503)
3'-AAAAAUUUUUUUCGAUUUAAUGUAUCU-5' (SEQ ID NO: 2800)

KRAS-4269 Target: 5'-TTTTTAAAAAAAGCTAAATTACATAGA-3' (SEQ ID NO: 4206)

5'-UAAAAAAAGCUAAAUUACAUAGAct-3' (SEQ ID NO: 3504)
3'-AAAUUUUUUUCGAUUUAAUGUAUCUGA-5' (SEQ ID NO: 2801)

KRAS-4271 Target: 5'-TTTAAAAAAAGCTAAATTACATAGACT-3' (SEQ ID NO: 4207)

5'-ACUUAGGCAUUAACAUGUUUGUGga-3' (SEQ ID NO: 3505)
3'-UCUGAAUCCGUAAUUGUACAAACACCU-5' (SEQ ID NO: 2802)

KRAS-4293 Target: 5'-AGACTTAGGCATTAACATGTTTGTGGA-3' (SEQ ID NO: 4208)

5'-CUUAGGCAUUAACAUGUUUGUGGaa-3' (SEQ ID NO: 3506)
3'-CUGAAUCCGUAAUUGUACAAACACCUU-5' (SEQ ID NO: 2803)

KRAS-4294 Target: 5'-GACTTAGGCATTAACATGTTTGTGGAA-3' (SEQ ID NO: 4209)

5'-AGCAGACGUAUAUUGUAUCAUUUga-3' (SEQ ID NO: 3507)
3'-UAUCGUCUGCAUAUAACAUAGUAAACU-5' (SEQ ID NO: 2804)

KRAS-4325 Target: 5'-ATAGCAGACGTATATTGTATCATTTGA-3' (SEQ ID NO: 4210)

5'-GACGUAUAUUGUAUCAUUUGAGUga-3' (SEQ ID NO: 3508)
3'-GUCUGCAUAUAACAUAGUAAACUCACU-5' (SEQ ID NO: 2805)

KRAS-4329 Target: 5'-CAGACGTATATTGTATCATTTGAGTGA-3' (SEQ ID NO: 4211)

5'-CGUAUAUUGUAUCAUUUGAGUGAat-3' (SEQ ID NO: 3509)
3'-CUGCAUAUAACAUAGUAAACUCACUUA-5' (SEQ ID NO: 2806)

KRAS-4331 Target: 5'-GACGTATATTGTATCATTTGAGTGAAT-3' (SEQ ID NO: 4212)

5'-AUAUUGUAUCAUUUGAGUGAAUGtt-3' (SEQ ID NO: 3510)
3'-CAUAUAACAUAGUAAACUCACUUACAA-5' (SEQ ID NO: 2807)

KRAS-4334 Target: 5'-GTATATTGTATCATTTGAGTGAATGTT-3' (SEQ ID NO: 4213)

5'-UAUUGUAUCAUUUGAGUGAAUGUtc-3' (SEQ ID NO: 3511)
3'-AUAUAACAUAGUAAACUCACUUACAAG-5' (SEQ ID NO: 2808)

KRAS-4335 Target: 5'-TATATTGTATCATTTGAGTGAATGTTC-3' (SEQ ID NO: 4214)

5'-AUUGUAUCAUUUGAGUGAAUGUUcc-3' (SEQ ID NO: 3512)
3'-UAUAACAUAGUAAACUCACUUACAAGG-5' (SEQ ID NO: 2809)

KRAS-4336 Target: 5'-ATATTGTATCATTTGAGTGAATGTTCC-3' (SEQ ID NO: 4215)

5'-AUAGGAAUUUAGAACCUAACUUUta-3' (SEQ ID NO: 3513)
3'-CGUAUCCUUAAAUCUUGGAUUGAAAAU-5' (SEQ ID NO: 2810)

KRAS-4402 Target: 5'-GCATAGGAATTTAGAACCTAACTTTTA-3' (SEQ ID NO: 4216)

5'-UAGGAAUUUAGAACCUAACUUUUat-3' (SEQ ID NO: 3514)
3'-GUAUCCUUAAAUCUUGGAUUGAAAAUA-5' (SEQ ID NO: 2811)

KRAS-4403 Target: 5'-CATAGGAATTTAGAACCTAACTTTTAT-3' (SEQ ID NO: 4217)

5'-AAUUUAGAACCUAACUUUUAUAGgt-3' (SEQ ID NO: 3515)
3'-CCUUAAAUCUUGGAUUGAAAAUAUCCA-5' (SEQ ID NO: 2812)

KRAS-4407 Target: 5'-GGAATTTAGAACCTAACTTTTATAGGT-3' (SEQ ID NO: 4218)

5'-AUUUAGAACCUAACUUUUAUAGGtt-3' (SEQ ID NO: 3516)
3'-CUUAAAUCUUGGAUUGAAAAUAUCCAA-5' (SEQ ID NO: 2813)

KRAS-4408 Target: 5'-GAATTTAGAACCTAACTTTTATAGGTT-3' (SEQ ID NO: 4219)

5'-UUUAGAACCUAACUUUUAUAGGUta-3' (SEQ ID NO: 3517)
3'-UUAAAUCUUGGAUUGAAAAUAUCCAAU-5' (SEQ ID NO: 2814)

KRAS-4409 Target: 5'-AATTTAGAACCTAACTTTTATAGGTTA-3' (SEQ ID NO: 4220)

5'-UUAGAACCUAACUUUUAUAGGUUat-3' (SEQ ID NO: 3518)
3'-UAAAUCUUGGAUUGAAAAUAUCCAAUA-5' (SEQ ID NO: 2815)

KRAS-4410 Target: 5'-ATTTAGAACCTAACTTTTATAGGTTAT-3' (SEQ ID NO: 4221)

5'-UUUUAUAGGUUAUCAAAACUGUUgt-3' (SEQ ID NO: 3519)
3'-UGAAAAUAUCCAAUAGUUUUGACAACA-5' (SEQ ID NO: 2816)

KRAS-4422 Target: 5'-ACTTTTATAGGTTATCAAAACTGTTGT-3' (SEQ ID NO: 4222)

5'-UUAUAGGUUAUCAAAACUGUUGUca-3' (SEQ ID NO: 3520)
3'-AAAAUAUCCAAUAGUUUUGACAACAGU-5' (SEQ ID NO: 2817)

KRAS-4424 Target: 5'-TTTTATAGGTTATCAAAACTGTTGTCA-3' (SEQ ID NO: 4223)

5'-AAUUUUGUCCUAAUAUAUACAUAga-3' (SEQ ID NO: 3521)
3'-UGUUAAAACAGGAUUAUAUAUGUAUCU-5' (SEQ ID NO: 2818)

KRAS-4458 Target: 5'-ACAATTTTGTCCTAATATATACATAGA-3' (SEQ ID NO: 4224)

5'-AUUUUGUCCUAAUAUAUACAUAGaa-3' (SEQ ID NO: 3522)
3'-GUUAAAACAGGAUUAUAUAUGUAUCUU-5' (SEQ ID NO: 2819)

KRAS-4459 Target: 5'-CAATTTTGTCCTAATATATACATAGAA-3' (SEQ ID NO: 4225)

5'-UUUUGUCCUAAUAUAUACAUAGAaa-3' (SEQ ID NO: 3523)
3'-UUAAAACAGGAUUAUAUAUGUAUCUUU-5' (SEQ ID NO: 2820)

KRAS-4460 Target: 5'-AATTTTGTCCTAATATATACATAGAAA-3' (SEQ ID NO: 4226)

5'-CCUAAUAUAUACAUAGAAACUUUgt-3' (SEQ ID NO: 3524)
3'-CAGGAUUAUAUAUGUAUCUUUGAAACA-5' (SEQ ID NO: 2821)

KRAS-4466 Target: 5'-GTCCTAATATATACATAGAAACTTTGT-3' (SEQ ID NO: 4227)

5'-UAUAUACAUAGAAACUUUGUGGGgc-3' (SEQ ID NO: 3525)
3'-UUAUAUAUGUAUCUUUGAAACACCCCG-5' (SEQ ID NO: 2822)

KRAS-4471 Target: 5'-AATATATACATAGAAACTTTGTGGGGC-3' (SEQ ID NO: 4228)

5'-CACAAGUUCAUCUCAUUUGUAUUcc-3' (SEQ ID NO: 3526)
3'-ACGUGUUCAAGUAGAGUAAACAUAAGG-5' (SEQ ID NO: 2823)

KRAS-4514 Target: 5'-TGCACAAGTTCATCTCATTTGTATTCC-3' (SEQ ID NO: 4229)

5'-CUCAUUUGUAUUCCAUUGAUUUUtt-3' (SEQ ID NO: 3527)
3'-UAGAGUAAACAUAAGGUAACUAAAAAA-5' (SEQ ID NO: 2824)

KRAS-4525 Target: 5'-ATCTCATTTGTATTCCATTGATTTTTT-3' (SEQ ID NO: 4230)

5'-UCAUUUGUAUUCCAUUGAUUUUUtt-3' (SEQ ID NO: 3528)
3'-AGAGUAAACAUAAGGUAACUAAAAAAA-5' (SEQ ID NO: 2825)

KRAS-4526 Target: 5'-TCTCATTTGTATTCCATTGATTTTTTT-3' (SEQ ID NO: 4231)

5'-CAUUUGUAUUCCAUUGAUUUUUUtt-3' (SEQ ID NO: 3529)
3'-GAGUAAACAUAAGGUAACUAAAAAAAA-5' (SEQ ID NO: 2826)

KRAS-4527 Target: 5'-CTCATTTGTATTCCATTGATTTTTTTT-3' (SEQ ID NO: 4232)

5'-AUUUGUAUUCCAUUGAUUUUUUUtt-3' (SEQ ID NO: 3530)
3'-AGUAAACAUAAGGUAACUAAAAAAAAA-5' (SEQ ID NO: 2827)

KRAS-4528 Target: 5'-TCATTTGTATTCCATTGATTTTTTTTT-3' (SEQ ID NO: 4233)

5'-UUUGUAUUCCAUUGAUUUUUUUUtt-3' (SEQ ID NO: 3531)
3'-GUAAACAUAAGGUAACUAAAAAAAAAA-5' (SEQ ID NO: 2828)

KRAS-4529 Target: 5'-CATTTGTATTCCATTGATTTTTTTTTT-3' (SEQ ID NO: 4234)

5'-UUGUAUUCCAUUGAUUUUUUUUUtc-3' (SEQ ID NO: 3532)
3'-UAAACAUAAGGUAACUAAAAAAAAAAG-5' (SEQ ID NO: 2829)

KRAS-4530 Target: 5'-ATTTGTATTCCATTGATTTTTTTTTTC-3' (SEQ ID NO: 4235)

5'-UGUAUUCCAUUGAUUUUUUUUUUct-3' (SEQ ID NO: 3533)
3'-AAACAUAAGGUAACUAAAAAAAAAAGA-5' (SEQ ID NO: 2830)

KRAS-4531 Target: 5'-TTTGTATTCCATTGATTTTTTTTTTCT-3' (SEQ ID NO: 4236)

5'-CAUUGAUUUUUUUUUUCUUCUAAac-3' (SEQ ID NO: 3534)
3'-AGGUAACUAAAAAAAAAAGAAGAUUUG-5' (SEQ ID NO: 2831)

KRAS-4538 Target: 5'-TCCATTGATTTTTTTTTTCTTCTAAAC-3' (SEQ ID NO: 4237)

5'-AUUGAUUUUUUUUUUCUUCUAAAca-3' (SEQ ID NO: 3535)
3'-GGUAACUAAAAAAAAAAGAAGAUUUGU-5' (SEQ ID NO: 2832)

KRAS-4539 Target: 5'-CCATTGATTTTTTTTTTCTTCTAAACA-3' (SEQ ID NO: 4238)

5'-AUUUUUUUUUUCUUCUAAACAUUtt-3' (SEQ ID NO: 3536)
3'-ACUAAAAAAAAAAGAAGAUUUGUAAAA-5' (SEQ ID NO: 2833)

KRAS-4543 Target: 5'-TGATTTTTTTTTTCTTCTAAACATTTT-3' (SEQ ID NO: 4239)

5'-UUUUUUUUUUCUUCUAAACAUUUtt-3' (SEQ ID NO: 3537)
3'-CUAAAAAAAAAAGAAGAUUUGUAAAAA-5' (SEQ ID NO: 2834)

KRAS-4544 Target: 5'-GATTTTTTTTTTCTTCTAAACATTTTT-3' (SEQ ID NO: 4240)

5'-UUUUUUUUUCUUCUAAACAUUUUtt-3' (SEQ ID NO: 3538)
3'-UAAAAAAAAAAGAAGAUUUGUAAAAAA-5' (SEQ ID NO: 2835)

KRAS-4545 Target: 5'-ATTTTTTTTTTCTTCTAAACATTTTTT-3' (SEQ ID NO: 4241)

5'-UUUUUUUUCUUCUAAACAUUUUUtc-3' (SEQ ID NO: 3539)
3'-AAAAAAAAAAGAAGAUUUGUAAAAAAG-5' (SEQ ID NO: 2836)

KRAS-4546 Target: 5'-TTTTTTTTTTCTTCTAAACATTTTTTC-3' (SEQ ID NO: 4242)

5'-UUUUUUUCUUCUAAACAUUUUUUct-3' (SEQ ID NO: 3540)
3'-AAAAAAAAAGAAGAUUUGUAAAAAAGA-5' (SEQ ID NO: 2837)

KRAS-4547 Target: 5'-TTTTTTTTTCTTCTAAACATTTTTTCT-3' (SEQ ID NO: 4243)

5'-AACAUUUUUUCUUCAAACAGUAUat-3' (SEQ ID NO: 3541)
3'-AUUUGUAAAAAAGAAGUUUGUCAUAUA-5' (SEQ ID NO: 2838)

KRAS-4560 Target: 5'-TAAACATTTTTTCTTCAAACAGTATAT-3' (SEQ ID NO: 4244)

5'-ACAUUUUUUCUUCAAACAGUAUAta-3' (SEQ ID NO: 3542)
3'-UUUGUAAAAAAGAAGUUUGUCAUAUAU-5' (SEQ ID NO: 2839)

KRAS-4561 Target: 5'-AAACATTTTTTCTTCAAACAGTATATA-3' (SEQ ID NO: 4245)

5'-CAUUUUUUCUUCAAACAGUAUAUaa-3' (SEQ ID NO: 3543)
3'-UUGUAAAAAAGAAGUUUGUCAUAUAUU-5' (SEQ ID NO: 2840)

KRAS-4562 Target: 5'-AACATTTTTTCTTCAAACAGTATATAA-3' (SEQ ID NO: 4246)

5'-AUUUUUUCUUCAAACAGUAUAUAac-3' (SEQ ID NO: 3544)
3'-UGUAAAAAAGAAGUUUGUCAUAUAUUG-5' (SEQ ID NO: 2841)

KRAS-4563 Target: 5'-ACATTTTTTCTTCAAACAGTATATAAC-3' (SEQ ID NO: 4247)

5'-UUUUUUCUUCAAACAGUAUAUAAct-3' (SEQ ID NO: 3545)
3'-GUAAAAAAGAAGUUUGUCAUAUAUUGA-5' (SEQ ID NO: 2842)

KRAS-4564 Target: 5'-CATTTTTTCTTCAAACAGTATATAACT-3' (SEQ ID NO: 4248)

5'-UUCAAACAGUAUAUAACUUUUUUta-3' (SEQ ID NO: 3546)
3'-AGAAGUUUGUCAUAUAUUGAAAAAAAU-5' (SEQ ID NO: 2843)

KRAS-4571 Target: 5'-TCTTCAAACAGTATATAACTTTTTTTA-3' (SEQ ID NO: 4249)

5'-ACAGUAUAUAACUUUUUUUAGGGga-3' (SEQ ID NO: 3547)
3'-UUUGUCAUAUAUUGAAAAAAAUCCCCU-5' (SEQ ID NO: 2844)

KRAS-4576 Target: 5'-AAACAGTATATAACTTTTTTTAGGGGA-3' (SEQ ID NO: 4250)

5'-CAGUAUAUAACUUUUUUUAGGGGat-3' (SEQ ID NO: 3548)
3'-UUGUCAUAUAUUGAAAAAAAUCCCCUA-5' (SEQ ID NO: 2845)

KRAS-4577 Target: 5'-AACAGTATATAACTTTTTTTAGGGGAT-3' (SEQ ID NO: 4251)

5'-AGUAUAUAACUUUUUUUAGGGGAtt-3' (SEQ ID NO: 3549)
3'-UGUCAUAUAUUGAAAAAAAUCCCCUAA-5' (SEQ ID NO: 2846)

KRAS-4578 Target: 5'-ACAGTATATAACTTTTTTTAGGGGATT-3' (SEQ ID NO: 4252)

5'-GUAUAUAACUUUUUUUAGGGGAUtt-3' (SEQ ID NO: 3550)

3'-GUCAUAUAUUGAAAAAAAUCCCCUAAA-5' (SEQ ID NO: 2847)

KRAS-4579 Target: 5'-CAGTATATAACTTTTTTTAGGGGATTT-3' (SEQ ID NO: 4253)

5'-AACUUUUUUUAGGGGAUUUUUUUtt-3' (SEQ ID NO: 3551)
3'-UAUUGAAAAAAAUCCCCUAAAAAAAAA-5' (SEQ ID NO: 2848)

KRAS-4585 Target: 5'-ATAACTTTTTTTAGGGGATTTTTTTTT-3' (SEQ ID NO: 4254)

5'-ACUUUUUUUAGGGGAUUUUUUUUta-3' (SEQ ID NO: 3552)
3'-AUUGAAAAAAAUCCCCUAAAAAAAAAU-5' (SEQ ID NO: 2849)

KRAS-4586 Target: 5'-TAACTTTTTTTAGGGGATTTTTTTTTA-3' (SEQ ID NO: 4255)

5'-GGGAUUUUUUUUUAGACAGCAAAaa-3' (SEQ ID NO: 3553)
3'-UCCCCUAAAAAAAAAAUCUGUCGUUUUU-5' (SEQ ID NO: 2850)

KRAS-4597 Target: 5'-AGGGGATTTTTTTTTAGACAGCAAAAA-3' (SEQ ID NO: 4256)

5'-GGAUUUUUUUUUAGACAGCAAAAac-3' (SEQ ID NO: 3554)
3'-CCCCUAAAAAAAAAAUCUGUCGUUUUUG-5' (SEQ ID NO: 2851)

KRAS-4598 Target: 5'-GGGGATTTTTTTTTTAGACAGCAAAAAC-3' (SEQ ID NO: 4257)

5'-GAUUUUUUUUUAGACAGCAAAAAct-3' (SEQ ID NO: 3555)
3'-CCCUAAAAAAAAAAUCUGUCGUUUUUGA-5' (SEQ ID NO: 2852)

KRAS-4599 Target: 5'-GGGATTTTTTTTTTAGACAGCAAAAACT-3' (SEQ ID NO: 4258)

5'-UGAAGAUUUCCAUUUGUCAAAAAgt-3' (SEQ ID NO: 3556)
3'-AGACUUCUAAAGGUAAACAGUUUUUCA-5' (SEQ ID NO: 2853)

KRAS-4627 Target: 5'-TCTGAAGATTTCCATTTGTCAAAAAGT-3' (SEQ ID NO: 4259)

5'-GAAGAUUUCCAUUUGUCAAAAAGta-3' (SEQ ID NO: 3557)
3'-GACUUCUAAAGGUAAACAGUUUUUCAU-5' (SEQ ID NO: 2854)

KRAS-4628 Target: 5'-CTGAAGATTTCCATTTGTCAAAAAGTA-3' (SEQ ID NO: 4260)

5'-AAGAUUUCCAUUUGUCAAAAAGUaa-3' (SEQ ID NO: 3558)
3'-ACUUCUAAAGGUAAACAGUUUUUCAUU-5' (SEQ ID NO: 2855)

KRAS-4629 Target: 5'-TGAAGATTTCCATTTGTCAAAAAGTAA-3' (SEQ ID NO: 4261)

5'-AGAUUUCCAUUUGUCAAAAAGUAat-3' (SEQ ID NO: 3559)
3'-CUUCUAAAGGUAAACAGUUUUUCAUUA-5' (SEQ ID NO: 2856)

KRAS-4630 Target: 5'-GAAGATTTCCATTTGTCAAAAAGTAAT-3' (SEQ ID NO: 4262)

5'-UCCAUUUGUCAAAAAGUAAUGAUtt-3' (SEQ ID NO: 3560)
3'-AAAGGUAAACAGUUUUUCAUUACUAAA-5' (SEQ ID NO: 2857)

KRAS-4635 Target: 5'-TTTCCATTTGTCAAAAAGTAATGATTT-3' (SEQ ID NO: 4263)

5'-CCAUUUGUCAAAAAGUAAUGAUUtc-3' (SEQ ID NO: 3561)
3'-AAGGUAAACAGUUUUUCAUUACUAAAG-5' (SEQ ID NO: 2858)

KRAS-4636 Target: 5'-TTCCATTTGTCAAAAAGTAATGATTTC-3' (SEQ ID NO: 4264)

5'-CAUUUGUCAAAAAGUAAUGAUUUct-3' (SEQ ID NO: 3562)
3'-AGGUAAACAGUUUUUCAUUACUAAAGA-5' (SEQ ID NO: 2859)

KRAS-4637 Target: 5'-TCCATTTGTCAAAAAGTAATGATTTCT-3' (SEQ ID NO: 4265)

5'-GUCAAAAAGUAAUGAUUUCUUGAta-3' (SEQ ID NO: 3563)
3'-AACAGUUUUUCAUUACUAAAGAACUAU-5' (SEQ ID NO: 2860)

KRAS-4642 Target: 5'-TTGTCAAAAAGTAATGATTTCTTGATA-3' (SEQ ID NO: 4266)

5'-UCAAAAAGUAAUGAUUUCUUGAUaa-3' (SEQ ID NO: 3564)
3'-ACAGUUUUUCAUUACUAAAGAACUAUU-5' (SEQ ID NO: 2861)

KRAS-4643 Target: 5'-TGTCAAAAAGTAATGATTTCTTGATAA-3' (SEQ ID NO: 4267)

5'-CAAAAAGUAAUGAUUUCUUGAUAat-3' (SEQ ID NO: 3565)
3'-CAGUUUUUCAUUACUAAAGAACUAUUA-5' (SEQ ID NO: 2862)

KRAS-4644 Target: 5'-GTCAAAAAGTAATGATTTCTTGATAAT-3' (SEQ ID NO: 4268)

5'-AAAAAGUAAUGAUUUCUUGAUAAtt-3' (SEQ ID NO: 3566)
3'-AGUUUUUCAUUACUAAAGAACUAUUAA-5' (SEQ ID NO: 2863)

KRAS-4645 Target: 5'-TCAAAAAGTAATGATTTCTTGATAATT-3' (SEQ ID NO: 4269)

5'-AAAGUAAUGAUUUCUUGAUAAUUgt-3' (SEQ ID NO: 3567)
3'-UUUUUCAUUACUAAAGAACUAUUAACA-5' (SEQ ID NO: 2864)

KRAS-4647 Target: 5'-AAAAAGTAATGATTTCTTGATAATTGT-3' (SEQ ID NO: 4270)

5'-AGUAAUGAUUUCUUGAUAAUUGUgt-3' (SEQ ID NO: 3568)
3'-UUUCAUUACUAAAGAACUAUUAACACA-5' (SEQ ID NO: 2865)

KRAS-4649 Target: 5'-AAAGTAATGATTTCTTGATAATTGTGT-3' (SEQ ID NO: 4271)

5'-GUAAUGAUUUCUUGAUAAUUGUGta-3' (SEQ ID NO: 3569)
3'-UUCAUUACUAAAGAACUAUUAACACAU-5' (SEQ ID NO: 2866)

KRAS-4650 Target: 5'-AAGTAATGATTTCTTGATAATTGTGTA-3' (SEQ ID NO: 4272)

5'-AAUGAUUUCUUGAUAAUUGUGUAgt-3' (SEQ ID NO: 3570)
3'-CAUUACUAAAGAACUAUUAACACAUCA-5' (SEQ ID NO: 2867)

KRAS-4652 Target: 5'-GTAATGATTTCTTGATAATTGTGTAGT-3' (SEQ ID NO: 4273)

5'-AUGAUUUCUUGAUAAUUGUGUAGta-3' (SEQ ID NO: 3571)
3'-AUUACUAAAGAACUAUUAACACAUCAU-5' (SEQ ID NO: 2868)

KRAS-4653 Target: 5'-TAATGATTTCTTGATAATTGTGTAGTA-3' (SEQ ID NO: 4274)

5'-UUCUUGAUAAUUGUGUAGUAAUGtt-3' (SEQ ID NO: 3572)
3'-UAAAGAACUAUUAACACAUCAUUACAA-5' (SEQ ID NO: 2869)

KRAS-4658 Target: 5'-ATTTCTTGATAATTGTGTAGTAATGTT-3' (SEQ ID NO: 4275)

5'-UCUUGAUAAUUGUGUAGUAAUGUtt-3' (SEQ ID NO: 3573)
3'-AAAGAACUAUUAACACAUCAUUACAAA-5' (SEQ ID NO: 2870)

KRAS-4659 Target: 5'-TTTCTTGATAATTGTGTAGTAATGTTT-3' (SEQ ID NO: 4276)

5'-CUUGAUAAUUGUGUAGUAAUGUUtt-3' (SEQ ID NO: 3574)
3'-AAGAACUAUUAACACAUCAUUACAAAA-5' (SEQ ID NO: 2871)

KRAS-4660 Target: 5'-TTCTTGATAATTGTGTAGTAATGTTTT-3' (SEQ ID NO: 4277)

5'-UGAUAAUUGUGUAGUAAUGUUUUtt-3' (SEQ ID NO: 3575)
3'-GAACUAUUAACACAUCAUUACAAAAAA-5' (SEQ ID NO: 2872)

KRAS-4662 Target: 5'-CTTGATAATTGTGTAGTAATGTTTTTT-3' (SEQ ID NO: 4278)

5'-UAAUUGUGUAGUAAUGUUUUUUAga-3' (SEQ ID NO: 3576)
3'-CUAUUAACACAUCAUUACAAAAAAUCU-5' (SEQ ID NO: 2873)

KRAS-4665 Target: 5'-GATAATTGTGTAGTAATGTTTTTTAGA-3' (SEQ ID NO: 4279)

5'-AUUGUGUAGUAAUGUUUUUUAGAac-3' (SEQ ID NO: 3577)
3'-AUUAACACAUCAUUACAAAAAAUCUUG-5' (SEQ ID NO: 2874)

KRAS-4667 Target: 5'-TAATTGTGTAGTAATGTTTTTTAGAAC-3' (SEQ ID NO: 4280)

5'-UUGUGUAGUAAUGUUUUUUAGAAcc-3' (SEQ ID NO: 3578)
3'-UUAACACAUCAUUACAAAAAAUCUUGG-5' (SEQ ID NO: 2875)

KRAS-4668 Target: 5'-AATTGTGTAGTAATGTTTTTTAGAACC-3' (SEQ ID NO: 4281)

5'-CCUUAAAGCUGAAUUUAUAUUUAgt-3' (SEQ ID NO: 3579)
3'-AUGGAAUUUCGACUUAAAUAUAAAUCA-5' (SEQ ID NO: 2876)

KRAS-4702 Target: 5'-TACCTTAAAGCTGAATTTATATTTAGT-3' (SEQ ID NO: 4282)

5'-UUAAAGCUGAAUUUAUAUUUAGUaa-3' (SEQ ID NO: 3580)
3'-GGAAUUUCGACUUAAAUAUAAAUCAUU-5' (SEQ ID NO: 2877)

KRAS-4704 Target: 5'-CCTTAAAGCTGAATTTATATTTAGTAA-3' (SEQ ID NO: 4283)

5'-AAUUUAUAUUUAGUAACUUCUGUgt-3' (SEQ ID NO: 3581)
3'-ACUUAAAUAUAAAUCAUUGAAGACACA-5' (SEQ ID NO: 2878)

KRAS-4713 Target: 5'-TGAATTTATATTTAGTAACTTCTGTGT-3' (SEQ ID NO: 4284)

5'-AUUUAUAUUUAGUAACUUCUGUGtt-3' (SEQ ID NO: 3582)
3'-CUUAAAUAUAAAUCAUUGAAGACACAA-5' (SEQ ID NO: 2879)

KRAS-4714 Target: 5'-GAATTTATATTTAGTAACTTCTGTGTT-3' (SEQ ID NO: 4285)

5'-UUUAUAUUUAGUAACUUCUGUGUta-3' (SEQ ID NO: 3583)
3'-UUAAAUAUAAAUCAUUGAAGACACAAU-5' (SEQ ID NO: 2880)

KRAS-4715 Target: 5'-AATTTATATTTAGTAACTTCTGTGTTA-3' (SEQ ID NO: 4286)

5'-AUUUAGUAACUUCUGUGUUAAUAct-3' (SEQ ID NO: 3584)
3'-UAUAAAUCAUUGAAGACACAAUUAUGA-5' (SEQ ID NO: 2881)

KRAS-4720 Target: 5'-ATATTTAGTAACTTCTGTGTTAATACT-3' (SEQ ID NO: 4287)

5'-ACUGAAUAGCUGUCAUAAAAAUGAaa-3' (SEQ ID NO: 3585)
3'-UUUGACUUAUCGACAGUAUUUUACUUU-5' (SEQ ID NO: 2882)

KRAS-4771 Target: 5'-AAACTGAATAGCTGTCATAAAATGAAA-3' (SEQ ID NO: 4288)

5'-CUGAAUAGCUGUCAUAAAAUGAAac-3' (SEQ ID NO: 3586)
3'-UUGACUUAUCGACAGUAUUUUACUUUG-5' (SEQ ID NO: 2883)

KRAS-4772 Target: 5'-AACTGAATAGCTGTCATAAAATGAAAC-3' (SEQ ID NO: 4289)

5'-UAAAAUGAAACUUUCUUUCUAAAga-3' (SEQ ID NO: 3587)
3'-GUAUUUUACUUUGAAAGAAAGAUUUCU-5' (SEQ ID NO: 2884)

KRAS-4786 Target: 5'-CATAAAATGAAACTTTCTTTCTAAAGA-3' (SEQ ID NO: 4290)

5'-AAAAUGAAACUUUCUUUCUAAAGaa-3' (SEQ ID NO: 3588)
3'-UAUUUUACUUUGAAAGAAAGAUUUCUU-5' (SEQ ID NO: 2885)

KRAS-4787 Target: 5'-ATAAAATGAAACTTTCTTTCTAAAGAA-3' (SEQ ID NO: 4291)

5'-AAAUGAAACUUUCUUUCUAAAGAaa-3' (SEQ ID NO: 3589)
3'-AUUUUACUUUGAAAGAAAGAUUUCUUU-5' (SEQ ID NO: 2886)

KRAS-4788 Target: 5'-TAAAATGAAACTTTCTTTCTAAAGAAA-3' (SEQ ID NO: 4292)

5'-AUGAAACUUUCUUUCUAAAGAAAga-3' (SEQ ID NO: 3590)
3'-UUUACUUUGAAAGAAAGAUUUCUUUCU-5' (SEQ ID NO: 2887)

KRAS-4790 Target: 5'-AAATGAAACTTTCTTTCTAAAGAAAGA-3' (SEQ ID NO: 4293)

5'-AACUUUCUUUCUAAAGAAAGAUAct-3' (SEQ ID NO: 3591)
3'-CUUUGAAAGAAAGAUUUCUUUCUAUGA-5' (SEQ ID NO: 2888)

KRAS-4794 Target: 5'-GAAACTTTCTTTCTAAAGAAAGATACT-3' (SEQ ID NO: 4294)

5'-CACAUGAGUUCUUGAAGAAUAGUca-3' (SEQ ID NO: 3592)
3'-GAGUGUACUCAAGAACUUCUUAUCAGU-5' (SEQ ID NO: 2889)

KRAS-4819 Target: 5'-CTCACATGAGTTCTTGAAGAATAGTCA-3' (SEQ ID NO: 4295)

5'-UCUUGAAGAAUAGUCAUAACUAGat-3' (SEQ ID NO: 3593)
3'-CAAGAACUUCUUAUCAGUAUUGAUCUA-5' (SEQ ID NO: 2890)

KRAS-4828 Target: 5'-GTTCTTGAAGAATAGTCATAACTAGAT-3' (SEQ ID NO: 4296)

5'-CUUGAAGAAUAGUCAUAACUAGAtt-3' (SEQ ID NO: 3594)
3'-AAGAACUUCUUAUCAGUAUUGAUCUAA-5' (SEQ ID NO: 2891)

KRAS-4829 Target: 5'-TTCTTGAAGAATAGTCATAACTAGATT-3' (SEQ ID NO: 4297)

5'-UUGAAGAAUAGUCAUAACUAGAUta-3' (SEQ ID NO: 3595)
3'-AGAACUUCUUAUCAGUAUUGAUCUAAU-5' (SEQ ID NO: 2892)

KRAS-4830 Target: 5'-TCTTGAAGAATAGTCATAACTAGATTA-3' (SEQ ID NO: 4298)

5'-AAGAAUAGUCAUAACUAGAUUAAga-3' (SEQ ID NO: 3596)
3'-ACUUCUUAUCAGUAUUGAUCUAAUUCU-5' (SEQ ID NO: 2893)

KRAS-4833 Target: 5'-TGAAGAATAGTCATAACTAGATTAAGA-3' (SEQ ID NO: 4299)

5'-AGAAUAGUCAUAACUAGAUUAAGat-3' (SEQ ID NO: 3597)
3'-CUUCUUAUCAGUAUUGAUCUAAUUCUA-5' (SEQ ID NO: 2894)

KRAS-4834 Target: 5'-GAAGAATAGTCATAACTAGATTAAGAT-3' (SEQ ID NO: 4300)

5'-GAAUAGUCAUAACUAGAUUAAGAtc-3' (SEQ ID NO: 3598)
3'-UUCUUAUCAGUAUUGAUCUAAUUCUAG-5' (SEQ ID NO: 2895)

KRAS-4835 Target: 5'-AAGAATAGTCATAACTAGATTAAGATC-3' (SEQ ID NO: 4301)

5'-AAUAGUCAUAACUAGAUUAAGAUct-3' (SEQ ID NO: 3599)
3'-UCUUAUCAGUAUUGAUCUAAUUCUAGA-5' (SEQ ID NO: 2896)

KRAS-4836 Target: 5'-AGAATAGTCATAACTAGATTAAGATCT-3' (SEQ ID NO: 4302)

5'-GUCAUAACUAGAUUAAGAUCUGUgt-3' (SEQ ID NO: 3600)
3'-AUCAGUAUUGAUCUAAUUCUAGACACA-5' (SEQ ID NO: 2897)

KRAS-4840 Target: 5'-TAGTCATAACTAGATTAAGATCTGTGT-3' (SEQ ID NO: 4303)

5'-ACUAGAUUAAGAUCUGUGUUUUAgt-3' (SEQ ID NO: 3601)
3'-AUUGAUCUAAUUCUAGACACAAAAUCA-5' (SEQ ID NO: 2898)

KRAS-4846 Target: 5'-TAACTAGATTAAGATCTGTGTTTTAGT-3' (SEQ ID NO: 4304)

5'-UAGAUUAAGAUCUGUGUUUUAGUtt-3' (SEQ ID NO: 3602)
3'-UGAUCUAAUUCUAGACACAAAAUCAAA-5' (SEQ ID NO: 2899)

KRAS-4848 Target: 5'-ACTAGATTAAGATCTGTGTTTTAGTTT-3' (SEQ ID NO: 4305)

5'-AGAUUAAGAUCUGUGUUUUAGUUta-3' (SEQ ID NO: 3603)

3'-GAUCUAAUUCUAGACACAAAAUCAAAU-5' (SEQ ID NO: 2900)

KRAS-4849 Target: 5'-CTAGATTAAGATCTGTGTTTTAGTTTA-3' (SEQ ID NO: 4306)

5'-AUUAAGAUCUGUGUUUUAGUUUAat-3' (SEQ ID NO: 3604)
3'-UCUAAUUCUAGACACAAAAUCAAAUUA-5' (SEQ ID NO: 2901)

KRAS-4851 Target: 5'-AGATTAAGATCTGTGTTTTAGTTTAAT-3' (SEQ ID NO: 4307)

5'-UCUGUGUUUUAGUUUAAUAGUUUga-3' (SEQ ID NO: 3605)
3'-CUAGACACAAAAUCAAAUUAUCAAACU-5' (SEQ ID NO: 2902)

KRAS-4858 Target: 5'-GATCTGTGTTTTAGTTTAATAGTTTGA-3' (SEQ ID NO: 4308)

5'-CUGUGUUUUAGUUUAAUAGUUUGaa-3' (SEQ ID NO: 3606)
3'-UAGACACAAAAUCAAAUUAUCAAACUU-5' (SEQ ID NO: 2903)

KRAS-4859 Target: 5'-ATCTGTGTTTTAGTTTAATAGTTTGAA-3' (SEQ ID NO: 4309)

5'-GUGUUUUAGUUUAAUAGUUUGAAgt-3' (SEQ ID NO: 3607)
3'-GACACAAAAUCAAAUUAUCAAACUUCA-5' (SEQ ID NO: 2904)

KRAS-4861 Target: 5'-CTGTGTTTTAGTTTAATAGTTTGAAGT-3' (SEQ ID NO: 4310)

5'-GUUUUAGUUUAAUAGUUUGAAGUgc-3' (SEQ ID NO: 3608)
3'-CACAAAAUCAAAUUAUCAAACUUCACG-5' (SEQ ID NO: 2905)

KRAS-4863 Target: 5'-GTGTTTTAGTTTAATAGTTTGAAGTGC-3' (SEQ ID NO: 4311)

5'-UUUUAGUUUAAUAGUUUGAAGUGcc-3' (SEQ ID NO: 3609)
3'-ACAAAAUCAAAUUAUCAAACUUCACGG-5' (SEQ ID NO: 2906)

KRAS-4864 Target: 5'-TGTTTTAGTTTAATAGTTTGAAGTGCC-3' (SEQ ID NO: 4312)

5'-GUUUGGGAUAAUGAUAGGUAAUUta-3' (SEQ ID NO: 3610)
3'-GACAAACCCUAUUACUAUCCAUUAAAU-5' (SEQ ID NO: 2907)

KRAS-4890 Target: 5'-CTGTTTGGGATAATGATAGGTAATTTA-3' (SEQ ID NO: 4313)

5'-UUGGGAUAAUGAUAGGUAAUUUAga-3' (SEQ ID NO: 3611)
3'-CAAACCCUAUUACUAUCCAUUAAAUCU-5' (SEQ ID NO: 2908)

KRAS-4892 Target: 5'-GTTTGGGATAATGATAGGTAATTTAGA-3' (SEQ ID NO: 4314)

5'-GGAUAAUGAUAGGUAAUUUAGAUga-3' (SEQ ID NO: 3612)
3'-ACCCUAUUACUAUCCAUUAAAUCUACU-5' (SEQ ID NO: 2909)

KRAS-4895 Target: 5'-TGGGATAATGATAGGTAATTTAGATGA-3' (SEQ ID NO: 4315)

5'-GAUAAUGAUAGGUAAUUUAGAUGaa-3' (SEQ ID NO: 3613)
3'-CCCUAUUACUAUCCAUUAAAUCUACUU-5' (SEQ ID NO: 2910)

KRAS-4896 Target: 5'-GGGATAATGATAGGTAATTTAGATGAA-3' (SEQ ID NO: 4316)

5'-AAUGAUAGGUAAUUUAGAUGAAUtt-3' (SEQ ID NO: 3614)
3'-UAUUACUAUCCAUUAAAUCUACUUAAA-5' (SEQ ID NO: 2911)

KRAS-4899 Target: 5'-ATAATGATAGGTAATTTAGATGAATTT-3' (SEQ ID NO: 4317)

5'-AUGAUAGGUAAUUUAGAUGAAUUta-3' (SEQ ID NO: 3615)
3'-AUUACUAUCCAUUAAAUCUACUUAAAU-5' (SEQ ID NO: 2912)

KRAS-4900 Target: 5'-TAATGATAGGTAATTTAGATGAATTTA-3' (SEQ ID NO: 4318)

5'-AGGUAAUUUAGAUGAAUUUAGGGga-3' (SEQ ID NO: 3616)
3'-UAUCCAUUAAAUCUACUUAAAUCCCCU-5' (SEQ ID NO: 2913)

KRAS-4905 Target: 5'-ATAGGTAATTTAGATGAATTTAGGGGA-3' (SEQ ID NO: 4319)

5'-GUAAUUUAGAUGAAUUUAGGGGAaa-3' (SEQ ID NO: 3617)
3'-UCCAUUAAAUCUACUUAAAUCCCCUUU-5' (SEQ ID NO: 2914)

KRAS-4907 Target: 5'-AGGTAATTTAGATGAATTTAGGGGAAA-3' (SEQ ID NO: 4320)

5'-AGAUGAAUUUAGGGGAAAAAAAAgt-3' (SEQ ID NO: 3618)
3'-AAUCUACUUAAAUCCCCUUUUUUUUCA-5' (SEQ ID NO: 2915)

KRAS-4914 Target: 5'-TTAGATGAATTTAGGGGAAAAAAAAGT-3' (SEQ ID NO: 4321)

5'-GAUGAAUUUAGGGGAAAAAAAAGtt-3' (SEQ ID NO: 3619)
3'-AUCUACUUAAAUCCCCUUUUUUUUCAA-5' (SEQ ID NO: 2916)

KRAS-4915 Target: 5'-TAGATGAATTTAGGGGAAAAAAAAGTT-3' (SEQ ID NO: 4322)

5'-GGGAAAAAAAAAGUUAUCUGCAGAta-3' (SEQ ID NO: 3620)
3'-UCCCCUUUUUUUUCAAUAGACGUCUAU-5' (SEQ ID NO: 2917)

KRAS-4926 Target: 5'-AGGGGAAAAAAAAGTTATCTGCAGATA-3' (SEQ ID NO: 4323)

5'-GGAAAAAAAAAGUUAUCUGCAGAUat-3' (SEQ ID NO: 3621)
3'-CCCCUUUUUUUUCAAUAGACGUCUAUA-5' (SEQ ID NO: 2918)

KRAS-4927 Target: 5'-GGGGAAAAAAAAGTTATCTGCAGATAT-3' (SEQ ID NO: 4324)

5'-AAAAAGUUAUCUGCAGAUAUGUUga-3' (SEQ ID NO: 3622)
3'-UUUUUUUCAAUAGACGUCUAUACAACU-5' (SEQ ID NO: 2919)

KRAS-4932 Target: 5'-AAAAAAAGTTATCTGCAGATATGTTGA-3' (SEQ ID NO: 4325)

5'-GUCUUGUGUUUUCAUGUUGAAAAta-3' (SEQ ID NO: 3623)
3'-GACAGAACACAAAAGUACAACUUUUAU-5' (SEQ ID NO: 2920)

KRAS-5033 Target: 5'-CTGTCTTGTGTTTTCATGTTGAAAATA-3' (SEQ ID NO: 4326)

5'-UCUUGUGUUUUCAUGUUGAAAAUac-3' (SEQ ID NO: 3624)
3'-ACAGAACACAAAAGUACAACUUUUAUG-5' (SEQ ID NO: 2921)

KRAS-5034 Target: 5'-TGTCTTGTGTTTTCATGTTGAAAATAC-3' (SEQ ID NO: 4327)

5'-CUUGUGUUUUCAUGUUGAAAAUAct-3' (SEQ ID NO: 3625)
3'-CAGAACACAAAAGUACAACUUUUAUGA-5' (SEQ ID NO: 2922)

KRAS-5035 Target: 5'-GTCTTGTGTTTTCATGTTGAAAATACT-3' (SEQ ID NO: 4328)

5'-CAUGUUGAAAAUACUUUUGCAUUtt-3' (SEQ ID NO: 3626)
3'-AAGUACAACUUUUAUGAAAACGUAAAA-5' (SEQ ID NO: 2923)

KRAS-5045 Target: 5'-TTCATGTTGAAAATACTTTTGCATTTT-3' (SEQ ID NO: 4329)

5'-AUGUUGAAAAUACUUUUGCAUUUtt-3' (SEQ ID NO: 3627)
3'-AGUACAACUUUUAUGAAAACGUAAAAA-5' (SEQ ID NO: 2924)

KRAS-5046 Target: 5'-TCATGTTGAAAATACTTTTGCATTTTT-3' (SEQ ID NO: 4330)

5'-UGUUGAAAAUACUUUUGCAUUUUtc-3' (SEQ ID NO: 3628)
3'-GUACAACUUUUAUGAAAACGUAAAAAG-5' (SEQ ID NO: 2925)

KRAS-5047 Target: 5'-CATGTTGAAAATACTTTTGCATTTTTC-3' (SEQ ID NO: 4331)

5'-GUUGAAAAUACUUUUGCAUUUUUcc-3' (SEQ ID NO: 3629)
3'-UACAACUUUUAUGAAAACGUAAAAAGG-5' (SEQ ID NO: 2926)

KRAS-5048 Target: 5'-ATGTTGAAAATACTTTTGCATTTTTCC-3' (SEQ ID NO: 4332)

5'-CUUUUGCAUUUUUCCUUUGAGUGcc-3' (SEQ ID NO: 3630)
3'-AUGAAAACGUAAAAAGGAAACUCACGG-5' (SEQ ID NO: 2927)

KRAS-5058 Target: 5'-TACTTTTGCATTTTTCCTTTGAGTGCC-3' (SEQ ID NO: 4333)

5'-UGAGUGCCAAUUUCUUACUAGUAct-3' (SEQ ID NO: 3631)
3'-AAACUCACGGUUAAAGAAUGAUCAUGA-5' (SEQ ID NO: 2928)

KRAS-5075 Target: 5'-TTTGAGTGCCAATTTCTTACTAGTACT-3' (SEQ ID NO: 4334)

5'-GCCAAUUUCUUACUAGUACUAUUtc-3' (SEQ ID NO: 3632)
3'-CACGGUUAAAGAAUGAUCAUGAUAAAG-5' (SEQ ID NO: 2929)

KRAS-5080 Target: 5'-GTGCCAATTTCTTACTAGTACTATTTC-3' (SEQ ID NO: 4335)

5'-CCAAUUUCUUACUAGUACUAUUUct-3' (SEQ ID NO: 3633)
3'-ACGGUUAAAGAAUGAUCAUGAUAAAGA-5' (SEQ ID NO: 2930)

KRAS-5081 Target: 5'-TGCCAATTTCTTACTAGTACTATTTCT-3' (SEQ ID NO: 4336)

5'-UACUAGUACUAUUUCUUAAUGUAac-3' (SEQ ID NO: 3634)
3'-GAAUGAUCAUGAUAAAGAAUUACAUUG-5' (SEQ ID NO: 2931)

KRAS-5090 Target: 5'-CTTACTAGTACTATTTCTTAATGTAAC-3' (SEQ ID NO: 4337)

5'-ACUAGUACUAUUUCUUAAUGUAAca-3' (SEQ ID NO: 3635)
3'-AAUGAUCAUGAUAAAGAAUUACAUUGU-5' (SEQ ID NO: 2932)

KRAS-5091 Target: 5'-TTACTAGTACTATTTCTTAATGTAACA-3' (SEQ ID NO: 4338)

5'-UACUAUUUCUUAAUGUAACAUGUtt-3' (SEQ ID NO: 3636)
3'-UCAUGAUAAAGAAUUACAUUGUACAAA-5' (SEQ ID NO: 2933)

KRAS-5096 Target: 5'-AGTACTATTTCTTAATGTAACATGTTT-3' (SEQ ID NO: 4339)

5'-ACUAUUUCUUAAUGUAACAUGUUta-3' (SEQ ID NO: 3637)
3'-CAUGAUAAAGAAUUACAUUGUACAAAU-5' (SEQ ID NO: 2934)

KRAS-5097 Target: 5'-GTACTATTTCTTAATGTAACATGTTTA-3' (SEQ ID NO: 4340)

5'-CUAUUUCUUAAUGUAACAUGUUUac-3' (SEQ ID NO: 3638)
3'-AUGAUAAAGAAUUACAUUGUACAAAUG-5' (SEQ ID NO: 2935)

KRAS-5098 Target: 5'-TACTATTTCTTAATGTAACATGTTTAC-3' (SEQ ID NO: 4341)

5'-UUAAUGUAACAUGUUUACCUGGAat-3' (SEQ ID NO: 3639)
3'-AGAAUUACAUUGUACAAAUGGACCUUA-5' (SEQ ID NO: 2936)

KRAS-5105 Target: 5'-TCTTAATGTAACATGTTTACCTGGAAT-3' (SEQ ID NO: 4342)

5'-CCUGGAAUGUAUUUUAACUAUUUtt-3' (SEQ ID NO: 3640)
3'-AUGGACCUUACAUAAAAUUGAUAAAAA-5' (SEQ ID NO: 2937)

KRAS-5122 Target: 5'-TACCTGGAATGTATTTTAACTATTTTT-3' (SEQ ID NO: 4343)

5'-UGGAAUGUAUUUUAACUAUUUUUgt-3' (SEQ ID NO: 3641)
3'-GGACCUUACAUAAAAUUGAUAAAAACA-5' (SEQ ID NO: 2938)

KRAS-5124 Target: 5'-CCTGGAATGTATTTTAACTATTTTTGT-3' (SEQ ID NO: 4344)

5'-GGAAUGUAUUUUAACUAUUUUUGta-3' (SEQ ID NO: 3642)
3'-GACCUUACAUAAAAUUGAUAAAAACAU-5' (SEQ ID NO: 2939)

KRAS-5125 Target: 5'-CTGGAATGTATTTTAACTATTTTTGTA-3' (SEQ ID NO: 4345)

5'-GAAUGUAUUUUAACUAUUUUUGUat-3' (SEQ ID NO: 3643)
3'-ACCUUACAUAAAAUUGAUAAAAACAUA-5' (SEQ ID NO: 2940)

KRAS-5126 Target: 5'-TGGAATGTATTTTAACTATTTTTGTAT-3' (SEQ ID NO: 4346)

5'-AAUGUAUUUUAACUAUUUUUGUAta-3' (SEQ ID NO: 3644)
3'-CCUUACAUAAAAUUGAUAAAAACAUAU-5' (SEQ ID NO: 2941)

KRAS-5127 Target: 5'-GGAATGTATTTTAACTATTTTTGTATA-3' (SEQ ID NO: 4347)

5'-UGUAUUUUAACUAUUUUUGUAUAgt-3' (SEQ ID NO: 3645)
3'-UUACAUAAAAUUGAUAAAAACAUAUCA-5' (SEQ ID NO: 2942)

KRAS-5129 Target: 5'-AATGTATTTTAACTATTTTTGTATAGT-3' (SEQ ID NO: 4348)

5'-UAUUUUAACUAUUUUUGUAUAGUgt-3' (SEQ ID NO: 3646)
3'-ACAUAAAAUUGAUAAAAACAUAUCACA-5' (SEQ ID NO: 2943)

KRAS-5131 Target: 5'-TGTATTTTAACTATTTTTGTATAGTGT-3' (SEQ ID NO: 4349)

5'-AUUUUAACUAUUUUUGUAUAGUGta-3' (SEQ ID NO: 3647)
3'-CAUAAAAUUGAUAAAAACAUAUCACAU-5' (SEQ ID NO: 2944)

KRAS-5132 Target: 5'-GTATTTTAACTATTTTTGTATAGTGTA-3' (SEQ ID NO: 4350)

5'-UUUUAACUAUUUUUGUAUAGUGUaa-3' (SEQ ID NO: 3648)
3'-AUAAAAUUGAUAAAAACAUAUCACAUU-5' (SEQ ID NO: 2945)

KRAS-5133 Target: 5'-TATTTTAACTATTTTTGTATAGTGTAA-3' (SEQ ID NO: 4351)

5'-UAUUUUUGUAUAGUGUAAACUGAaa-3' (SEQ ID NO: 3649)
3'-UGAUAAAAACAUAUCACAUUUGACUUU-5' (SEQ ID NO: 2946)

KRAS-5140 Target: 5'-ACTATTTTTGTATAGTGTAAACTGAAA-3' (SEQ ID NO: 4352)

5'-AUUUUUGUAUAGUGUAAACUGAAac-3' (SEQ ID NO: 3650)
3'-GAUAAAAACAUAUCACAUUUGACUUUG-5' (SEQ ID NO: 2947)

KRAS-5141 Target: 5'-CTATTTTTGTATAGTGTAAACTGAAAC-3' (SEQ ID NO: 4353)

5'-UUUUUGUAUAGUGUAAACUGAAAca-3' (SEQ ID NO: 3651)
3'-AUAAAAACAUAUCACAUUUGACUUUGU-5' (SEQ ID NO: 2948)

KRAS-5142 Target: 5'-TATTTTTGTATAGTGTAAACTGAAACA-3' (SEQ ID NO: 4354)

5'-AACUGAAACAUGCACAUUUUGUAca-3' (SEQ ID NO: 3652)
3'-AUUUGACUUUGUACGUGUAAAACAUGU-5' (SEQ ID NO: 2949)

KRAS-5157 Target: 5'-TAAACTGAAACATGCACATTTTGTACA-3' (SEQ ID NO: 4355)

5'-AACAUGCACAUUUUGUACAUUGUgc-3' (SEQ ID NO: 3653)
3'-CUUUGUACGUGUAAAACAUGUAACACG-5' (SEQ ID NO: 2950)

KRAS-5163 Target: 5'-GAAACATGCACATTTTGTACATTGTGC-3' (SEQ ID NO: 4356)

5'-UCCAGUUGUUUUCCAUCAUUUGGtt-3' (SEQ ID NO: 3654)
3'-CUAGGUCAACAAAAGGUAGUAAACCAA-5' (SEQ ID NO: 2951)

KRAS-5216 Target: 5'-GATCCAGTTGTTTTCCATCATTTGGTT-3' (SEQ ID NO: 4357)

5'-CAGUUGUUUUCCAUCAUUUGGUUgc-3' (SEQ ID NO: 3655)
3'-AGGUCAACAAAAGGUAGUAAACCAACG-5' (SEQ ID NO: 2952)

KRAS-5218 Target: 5'-TCCAGTTGTTTTCCATCATTTGGTTGC-3' (SEQ ID NO: 4358)

5'-AUGUUGGUCAUAUCAAACAUUAAaa-3' (SEQ ID NO: 3656)

3'-CUUACAACCAGUAUAGUUUGUAAUUUU-5' (SEQ ID NO: 2953)

KRAS-5255 Target: 5'-GAATGTTGGTCATATCAAACATTAAAA-3' (SEQ ID NO: 4359)

5'-UGUUGGUCAUAUCAAACAUUAAAaa-3' (SEQ ID NO: 3657)
3'-UUACAACCAGUAUAGUUUGUAAUUUUU-5' (SEQ ID NO: 2954)

KRAS-5256 Target: 5'-AATGTTGGTCATATCAAACATTAAAAA-3' (SEQ ID NO: 4360)

5'-GUUGGUCAUAUCAAACAUUAAAAat-3' (SEQ ID NO: 3658)
3'-UACAACCAGUAUAGUUUGUAAUUUUUA-5' (SEQ ID NO: 2955)

KRAS-5257 Target: 5'-ATGTTGGTCATATCAAACATTAAAAAT-3' (SEQ ID NO: 4361)

5'-GUCAUAUCAAACAUUAAAAAUGAcc-3' (SEQ ID NO: 3659)
3'-ACCAGUAUAGUUUGUAAUUUUUACUGG-5' (SEQ ID NO: 2956)

KRAS-5261 Target: 5'-TGGTCATATCAAACATTAAAAATGACC-3' (SEQ ID NO: 4362)

5'-AAAAUGACCACUCUUUUAAUUGAaa-3' (SEQ ID NO: 3660)
3'-AUUUUUACUGGUGAGAAAAUUAACUUU-5' (SEQ ID NO: 2957)

KRAS-5277 Target: 5'-TAAAAATGACCACTCTTTTAATTGAAA-3' (SEQ ID NO: 4363)

5'-AAAUGACCACUCUUUUAAUUGAAat-3' (SEQ ID NO: 3661)
3'-UUUUUACUGGUGAGAAAAUUAACUUUA-5' (SEQ ID NO: 2958)

KRAS-5278 Target: 5'-AAAAATGACCACTCTTTTAATTGAAAT-3' (SEQ ID NO: 4364)

5'-CUCUUUUAAUUGAAAUUAACUUUta-3' (SEQ ID NO: 3662)
3'-GUGAGAAAAUUAACUUUAAUUGAAAAU-5' (SEQ ID NO: 2959)

KRAS-5287 Target: 5'-CACTCTTTTAATTGAAATTAACTTTTA-3' (SEQ ID NO: 4365)

5'-UCUUUUAAUUGAAAUUAACUUUUaa-3' (SEQ ID NO: 3663)
3'-UGAGAAAAUUAACUUUAAUUGAAAAUU-5' (SEQ ID NO: 2960)

KRAS-5288 Target: 5'-ACTCTTTTAATTGAAATTAACTTTTAA-3' (SEQ ID NO: 4366)

5'-UUUUAAUUGAAAUUAACUUUUAAat-3' (SEQ ID NO: 3664)
3'-AGAAAAUUAACUUUAAUUGAAAAUUUA-5' (SEQ ID NO: 2961)

KRAS-5290 Target: 5'-TCTTTTAATTGAAATTAACTTTTAAAT-3' (SEQ ID NO: 4367)

5'-UUAAUUGAAAUUAACUUUUAAAUgt-3' (SEQ ID NO: 3665)
3'-AAAAUUAACUUUAAUUGAAAAUUUACA-5' (SEQ ID NO: 2962)

KRAS-5292 Target: 5'-TTTTAATTGAAATTAACTTTTAAATGT-3' (SEQ ID NO: 4368)

5'-UAAUUGAAAUUAACUUUUAAAUGtt-3' (SEQ ID NO: 3666)
3'-AAAUUAACUUUAAUUGAAAAUUUACAA-5' (SEQ ID NO: 2963)

KRAS-5293 Target: 5'-TTTAATTGAAATTAACTTTTAAATGTT-3' (SEQ ID NO: 4369)

5'-AAUUGAAAUUAACUUUUAAAUGUtt-3' (SEQ ID NO: 3667)
3'-AAUUAACUUUAAUUGAAAAUUUACAAA-5' (SEQ ID NO: 2964)

KRAS-5294 Target: 5'-TTAATTGAAATTAACTTTTAAATGTTT-3' (SEQ ID NO: 4370)

5'-AUUGAAAUUAACUUUUAAAUGUUta-3' (SEQ ID NO: 3668)
3'-AUUAACUUUAAUUGAAAAUUUACAAAU-5' (SEQ ID NO: 2965)

KRAS-5295 Target: 5'-TAATTGAAATTAACTTTTAAATGTTTA-3' (SEQ ID NO: 4371)

5'-UUGAAAUUAACUUUUAAAUGUUUat-3' (SEQ ID NO: 3669)
3'-UUAACUUUAAUUGAAAAUUUACAAAUA-5' (SEQ ID NO: 2966)

KRAS-5296 Target: 5'-AATTGAAATTAACTTTTAAATGTTTAT-3' (SEQ ID NO: 4372)

5'-UGAAAUUAACUUUUAAAUGUUUAta-3' (SEQ ID NO: 3670)
3'-UAACUUUAAUUGAAAAUUUACAAAUAU-5' (SEQ ID NO: 2967)

KRAS-5297 Target: 5'-ATTGAAATTAACTTTTAAATGTTTATA-3' (SEQ ID NO: 4373)

5'-AAUUAACUUUUAAAUGUUUAUAGga-3' (SEQ ID NO: 3671)
3'-CUUUAAUUGAAAAUUUACAAAUAUCCU-5' (SEQ ID NO: 2968)

KRAS-5300 Target: 5'-GAAATTAACTTTTAAATGTTTATAGGA-3' (SEQ ID NO: 4374)

5'-AACUUUUAAAUGUUUAUAGGAGUat-3' (SEQ ID NO: 3672)
3'-AAUUGAAAAUUUACAAAUAUCCUCAUA-5' (SEQ ID NO: 2969)

KRAS-5304 Target: 5'-TTAACTTTTAAATGTTTATAGGAGTAT-3' (SEQ ID NO: 4375)

5'-UUUAAAUGUUUAUAGGAGUAUGUgc-3' (SEQ ID NO: 3673)
3'-GAAAAUUUACAAAUAUCCUCAUACACG-5' (SEQ ID NO: 2970)

KRAS-5308 Target: 5'-CTTTTAAATGTTTATAGGAGTATGTGC-3' (SEQ ID NO: 4376)

5'-UUAAAUGUUUAUAGGAGUAUGUGct-3' (SEQ ID NO: 3674)
3'-AAAAUUUACAAAUAUCCUCAUACACGA-5' (SEQ ID NO: 2971)

KRAS-5309 Target: 5'-TTTTAAATGTTTATAGGAGTATGTGCT-3' (SEQ ID NO: 4377)

5'-GCUGUGAAGUGAUCUAAAAUUUGta-3' (SEQ ID NO: 3675)
3'-CACGACACUUCACUAGAUUUUAAACAU-5' (SEQ ID NO: 2972)

KRAS-5331 Target: 5'-GTGCTGTGAAGTGATCTAAAATTTGTA-3' (SEQ ID NO: 4378)

5'-UGUGAAGUGAUCUAAAAUUUGUAat-3' (SEQ ID NO: 3676)
3'-CGACACUUCACUAGAUUUUAAACAUUA-5' (SEQ ID NO: 2973)

KRAS-5333 Target: 5'-GCTGTGAAGTGATCTAAAATTTGTAAT-3' (SEQ ID NO: 4379)

5'-GUGAAGUGAUCUAAAAUUUGUAAta-3' (SEQ ID NO: 3677)
3'-GACACUUCACUAGAUUUUAAACAUUAU-5' (SEQ ID NO: 2974)

KRAS-5334 Target: 5'-CTGTGAAGTGATCTAAAATTTGTAATA-3' (SEQ ID NO: 4380)

5'-UGAAGUGAUCUAAAAUUUGUAAUat-3' (SEQ ID NO: 3678)
3'-ACACUUCACUAGAUUUUAAACAUUAUA-5' (SEQ ID NO: 2975)

KRAS-5335 Target: 5'-TGTGAAGTGATCTAAAATTTGTAATAT-3' (SEQ ID NO: 4381)

5'-GAAGUGAUCUAAAAUUUGUAAUAtt-3' (SEQ ID NO: 3679)
3'-CACUUCACUAGAUUUUAAACAUUAUAA-5' (SEQ ID NO: 2976)

KRAS-5336 Target: 5'-GTGAAGTGATCTAAAATTTGTAATATT-3' (SEQ ID NO: 4382)

5'-AAGUGAUCUAAAAUUUGUAAUAUtt-3' (SEQ ID NO: 3680)
3'-ACUUCACUAGAUUUUAAACAUUAUAAA-5' (SEQ ID NO: 2977)

KRAS-5337 Target: 5'-TGAAGTGATCTAAAATTTGTAATATTT-3' (SEQ ID NO: 4383)

5'-AGUGAUCUAAAAUUUGUAAUAUUtt-3' (SEQ ID NO: 3681)
3'-CUUCACUAGAUUUUAAACAUUAUAAAA-5' (SEQ ID NO: 2978)

KRAS-5338 Target: 5'-GAAGTGATCTAAAATTTGTAATATTTT-3' (SEQ ID NO: 4384)

5'-AUCUAAAAUUUGUAAUAUUUUUGtc-3' (SEQ ID NO: 3682)
3'-ACUAGAUUUUAAACAUUAUAAAAACAG-5' (SEQ ID NO: 2979)

KRAS-5342 Target: 5'-TGATCTAAAATTTGTAATATTTTTGTC-3' (SEQ ID NO: 4385)

5'-UCUAAAAUUUGUAAUAUUUUUGUca-3' (SEQ ID NO: 3683)
3'-CUAGAUUUUAAACAUUAUAAAAACAGU-5' (SEQ ID NO: 2980)

KRAS-5343 Target: 5'-GATCTAAAATTTGTAATATTTTTGTCA-3' (SEQ ID NO: 4386)

5'-AAAUUUGUAAUAUUUUUGUCAUGaa-3' (SEQ ID NO: 3684)
3'-AUUUUAAACAUUAUAAAAACAGUACUU-5' (SEQ ID NO: 2981)

KRAS-5347 Target: 5'-TAAAATTTGTAATATTTTTGTCATGAA-3' (SEQ ID NO: 4387)

5'-AAUUUGUAAUAUUUUUGUCAUGAac-3' (SEQ ID NO: 3685)
3'-UUUUAAACAUUAUAAAAACAGUACUUG-5' (SEQ ID NO: 2982)

KRAS-5348 Target: 5'-AAAATTTGTAATATTTTTGTCATGAAC-3' (SEQ ID NO: 4388)

5'-AUUUGUAAUAUUUUUGUCAUGAAct-3' (SEQ ID NO: 3686)
3'-UUUAAACAUUAUAAAAACAGUACUUGA-5' (SEQ ID NO: 2983)

KRAS-5349 Target: 5'-AAATTTGTAATATTTTTGTCATGAACT-3' (SEQ ID NO: 4389)

5'-GUAAUAUUUUUGUCAUGAACUGUac-3' (SEQ ID NO: 3687)
3'-AACAUUAUAAAAACAGUACUUGACAUG-5' (SEQ ID NO: 2984)

KRAS-5353 Target: 5'-TTGTAATATTTTTGTCATGAACTGTAC-3' (SEQ ID NO: 4390)

5'-UAAUAUUUUUGUCAUGAACUGUAct-3' (SEQ ID NO: 3688)
3'-ACAUUAUAAAAACAGUACUUGACAUGA-5' (SEQ ID NO: 2985)

KRAS-5354 Target: 5'-TGTAATATTTTTGTCATGAACTGTACT-3' (SEQ ID NO: 4391)

5'-AACUGUACUACUCCUAAUUAUUGta-3' (SEQ ID NO: 3689)
3'-ACUUGACAUGAUGAGGAUUAAUAACAU-5' (SEQ ID NO: 2986)

KRAS-5370 Target: 5'-TGAACTGTACTACTCCTAATTATTGTA-3' (SEQ ID NO: 4392)

5'-ACUGUACUACUCCUAAUUAUUGUaa-3' (SEQ ID NO: 3690)
3'-CUUGACAUGAUGAGGAUUAAUAACAUU-5' (SEQ ID NO: 2987)

KRAS-5371 Target: 5'-GAACTGTACTACTCCTAATTATTGTAA-3' (SEQ ID NO: 4393)

5'-UCCUAAUUAUUGUAAUGUAAUAAaa-3' (SEQ ID NO: 3691)
3'-UGAGGAUUAAUAACAUUACAUUAUUUU-5' (SEQ ID NO: 2988)

KRAS-5381 Target: 5'-ACTCCTAATTATTGTAATGTAATAAAA-3' (SEQ ID NO: 4394)

5'-CCUAAUUAUUGUAAUGUAAUAAAaa-3' (SEQ ID NO: 3692)
3'-GAGGAUUAAUAACAUUACAUUAUUUUU-5' (SEQ ID NO: 2989)

KRAS-5382 Target: 5'-CTCCTAATTATTGTAATGTAATAAAAA-3' (SEQ ID NO: 4395)

5'-UAAUUAUUGUAAUGUAAUAAAAAta-3' (SEQ ID NO: 3693)
3'-GGAUUAAUAACAUUACAUUAUUUUUAU-5' (SEQ ID NO: 2990)

KRAS-5384 Target: 5'-CCTAATTATTGTAATGTAATAAAAATA-3' (SEQ ID NO: 4396)

5'-AUUAUUGUAAUGUAAUAAAAAUAgt-3' (SEQ ID NO: 3694)
3'-AUUAAUAACAUUACAUUAUUUUUAUCA-5' (SEQ ID NO: 2991)

KRAS-5386 Target: 5'-TAATTATTGTAATGTAATAAAAATAGT-3' (SEQ ID NO: 4397)

5'-UUAUUGUAAUGUAAUAAAAAUAGtt-3' (SEQ ID NO: 3695)
3'-UUAAUAACAUUACAUUAUUUUUAUCAA-5' (SEQ ID NO: 2992)

KRAS-5387 Target: 5'-AATTATTGTAATGTAATAAAAATAGTT-3' (SEQ ID NO: 4398)

5'-AUUGUAAUGUAAUAAAAAUAGUUac-3' (SEQ ID NO: 3696)
3'-AAUAACAUUACAUUAUUUUUAUCAAUG-5' (SEQ ID NO: 2993)

KRAS-5389 Target: 5'-TTATTGTAATGTAATAAAAATAGTTAC-3' (SEQ ID NO: 4399)

5'-UUGUAAUGUAAUAAAAAUAGUUAca-3' (SEQ ID NO: 3697)
3'-AUAACAUUACAUUAUUUUUAUCAAUGU-5' (SEQ ID NO: 2994)

KRAS-5390 Target: 5'-TATTGTAATGTAATAAAAATAGTTACA-3' (SEQ ID NO: 4400)

5'-AAUGUAAUAAAAAUAGUUACAGUga-3' (SEQ ID NO: 3698)
3'-CAUUACAUUAUUUUUAUCAAUGUCACU-5' (SEQ ID NO: 2995)

KRAS-5394 Target: 5'-GTAATGTAATAAAAATAGTTACAGTGA-3' (SEQ ID NO: 4401)

5'-AUGUAAUAAAAAUAGUUACAGUGac-3' (SEQ ID NO: 3699)
3'-AUUACAUUAUUUUUAUCAAUGUCACUG-5' (SEQ ID NO: 2996)

KRAS-5395 Target: 5'-TAATGTAATAAAAATAGTTACAGTGAC-3' (SEQ ID NO: 4402)

5'-UGUAAUAAAAAUAGUUACAGUGAca-3' (SEQ ID NO: 3700)
3'-UUACAUUAUUUUUAUCAAUGUCACUGU-5' (SEQ ID NO: 2997)

KRAS-5396 Target: 5'-AATGTAATAAAAATAGTTACAGTGACA-3' (SEQ ID NO: 4403)

5'-AAAUAGUUACAGUGACAAAAAAAaa-3' (SEQ ID NO: 3701)
3'-UUUUUAUCAAUGUCACUGUUUUUUUUU-5' (SEQ ID NO: 2998)

KRAS-5404 Target: 5'-AAAAATAGTTACAGTGACAAAAAAAAA-3' (SEQ ID NO: 4404)

5'-AAUAGUUACAGUGACAAAAAAAAaa-3' (SEQ ID NO: 3702)
3'-UUUUAUCAAUGUCACUGUUUUUUUUU-5' (SEQ ID NO: 2999)

KRAS-5405 Target: 5'-AAAATAGTTACAGTGACAAAAAAAAAA-3' (SEQ ID NO: 4405)

5'-UAGUUACAGUGACAAAAAAAAAAaa-3' (SEQ ID NO: 3703)
3'-UUAUCAAUGUCACUGUUUUUUUUUUU-5' (SEQ ID NO: 3000)

KRAS-5407 Target: 5'-AATAGTTACAGTGACAAAAAAAAAAA-3' (SEQ ID NO: 4406)

Table 6: Anti-KRAS Asymmetric DsiRNAs, Unmodified Sequences

5′-GUUGGAGCUGGUGGCGUAGGCAAGA-3′ (SEQ ID NO: 5144)
3'-AUCAACCUCGACCACCGCAUCCGUUCU-5' (SEQ ID NO: 11)

KRAS-204 Target: 5′-TAGTTGGAGCTGGTGGCGTAGGCAAGA-3′ (SEQ ID NO: 141)

5′-GUUGGAGCUGUUGGCGUAGGCAAGA-3′ (SEQ ID NO: 5145)
3'-AUCAACCUCGACAACCGCAUCCGUUCU-5' (SEQ ID NO: 135)

KRAS-204* Target: 5′-TAGTTGGAGCTGTTGGCGTAGGCAAGA-3′ (SEQ ID NO: 142)

5′-UAUUCUCGACACAGCAGGUCAAGAG-3′ (SEQ ID NO: 5146)
3'-CUAUAAGAGCUGUGUCGUCCAGUUCUC-5' (SEQ ID NO: 12)

KRAS-341 Target: 5′-GATATTCTCGACACAGCAGGTCAAGAG-3′ (SEQ ID NO: 143)

5′-UAUUCUCGACACAGCAGGUCAUGAG-3′ (SEQ ID NO: 5147)
3'-CUAUAAGAGCUGUGUCGUCCAGUACUC-5' (SEQ ID NO: 136)

KRAS-341* Target: 5′-GATATTCTCGACACAGCAGGTCATGAG-3′ (SEQ ID NO: 144)

5′-UUCUCGACACAGCAGGUCAAGAGGA-3′ (SEQ ID NO: 5148)
3'-AUAAGAGCUGUGUCGUCCAGUUCUCCU-5' (SEQ ID NO: 13)

KRAS-343 Target: 5′-TATTCTCGACACAGCAGGTCAAGAGGA-3′ (SEQ ID NO: 145)

5′-UUCUCGACACAGCAGGUCAUGAGGA-3′ (SEQ ID NO: 5149)
3'-AUAAGAGCUGUGUCGUCCAGUACUCCU-5' (SEQ ID NO: 137)

KRAS-343* Target: 5′-TATTCTCGACACAGCAGGTCATGAGGA-3′ (SEQ ID NO: 146)

5′-CAGGUCAAGAGGAGUACAGUGCAAU-3′ (SEQ ID NO: 5150)
3'-UCGUCCAGUUCUCCUCAUGUCACGUUA-5' (SEQ ID NO: 14)

KRAS-355 Target: 5′-AGCAGGTCAAGAGGAGTACAGTGCAAT-3′ (SEQ ID NO: 147)

5′-CAGGUCAUGAGGAGUACAGUGCAAU-3′ (SEQ ID NO: 5151)
3'-UCGUCCAGUACUCCUCAUGUCACGUUA-5' (SEQ ID NO: 138)

KRAS-355* Target: 5′-AGCAGGTCATGAGGAGTACAGTGCAAT-3′ (SEQ ID NO: 148)

5′-AAGAGGAGUACAGUGCAAUGAGGGA-3′ (SEQ ID NO: 5152)
3'-AGUUCUCCUCAUGUCACGUUACUCCCU-5' (SEQ ID NO: 15)

KRAS-361 Target: 5′-TCAAGAGGAGTACAGTGCAATGAGGGA-3′ (SEQ ID NO: 149)

5′-AUGAGGAGUACAGUGCAAUGAGGGA-3′ (SEQ ID NO: 5153)
3'-AGUACUCCUCAUGUCACGUUACUCCCU-5' (SEQ ID NO: 139)

KRAS-361* Target: 5′-TCATGAGGAGTACAGTGCAATGAGGGA-3′ (SEQ ID NO: 150)

5′-CAGUGCAAUGAGGGACCAGUACAUG-3′ (SEQ ID NO: 5154)
3'-AUGUCACGUUACUCCCUGGUCAUGUAC-5' (SEQ ID NO: 16)

KRAS-371 Target: 5′-TACAGTGCAATGAGGGACCAGTACATG-3′ (SEQ ID NO: 151)

5′-UGGGGAGGGCUUUCUUUGUGUAUUU-3′ (SEQ ID NO: 5155)
3'-UGACCCCUCCCGAAAGAAACACAUAAA-5' (SEQ ID NO: 17)

KRAS-401 Target: 5′-ACTGGGGAGGGCTTTCTTTGTGTATTT-3′ (SEQ ID NO: 152)

5′-GGAGGGCUUUCUUUGUGUAUUUGCC-3′ (SEQ ID NO: 5156)
3'-CCCCUCCCGAAAGAAACACAUAAACGG-5' (SEQ ID NO: 18)

KRAS-404 Target: 5′-GGGGAGGGCTTTCTTTGTGTATTTGCC-3′ (SEQ ID NO: 153)

5′-AGGGCUUUCUUUGUGUAUUUGCCAU-3′ (SEQ ID NO: 5157)
3'-CCUCCCGAAAGAAACACAUAAACGGUA-5' (SEQ ID NO: 19)

KRAS-406 Target: 5′-GGAGGGCTTTCTTTGTGTATTTGCCAT-3′ (SEQ ID NO: 154)

5′-CUUUCUUUGUGUAUUUGCCAUAAAU-3′ (SEQ ID NO: 5158)
3'-CCGAAAGAAACACAUAAACGGUAUUUA-5' (SEQ ID NO: 20)

KRAS-410 Target: 5′-GGCTTTCTTTGTGTATTTGCCATAAAT-3′ (SEQ ID NO: 155)

5′-UUUGUGUAUUUGCCAUAAAUAAUAC-3′ (SEQ ID NO: 5159)
3'-AGAAACACAUAAACGGUAUUUAUUAUG-5' (SEQ ID NO: 21)

KRAS-415 Target: 5′-TCTTTGTGTATTTGCCATAAATAATAC-3′ (SEQ ID NO: 156)

5′-UUGUGUAUUUGCCAUAAAUAAUACU-3′ (SEQ ID NO: 5160)
3'-GAAACACAUAAACGGUAUUUAUUAUGA-5' (SEQ ID NO: 22)

KRAS-416 Target: 5′-CTTTGTGTATTTGCCATAAATAATACT-3′ (SEQ ID NO: 157)

5′-UGUGUAUUUGCCAUAAAUAAUACUA-3′ (SEQ ID NO: 5161)
3'-AAACACAUAAACGGUAUUUAUUAUGAU-5' (SEQ ID NO: 23)

KRAS-417 Target: 5′-TTTGTGTATTTGCCATAAATAATACTA-3′ (SEQ ID NO: 158)

5′-GUGUAUUUGCCAUAAAUAAUACUAA-3′ (SEQ ID NO: 5162)
3'-AACACAUAAACGGUAUUUAUUAUGAUU-5' (SEQ ID NO: 24)

KRAS-418 Target: 5′-TTGTGTATTTGCCATAAATAATACTAA-3′ (SEQ ID NO: 159)

5′-UGUAUUUGCCAUAAAUAAUACUAAA-3′ (SEQ ID NO: 5163)
3'-ACACAUAAACGGUAUUUAUUAUGAUUU-5' (SEQ ID NO: 25)

KRAS-419 Target: 5′-TGTGTATTTGCCATAAATAATACTAAA-3′ (SEQ ID NO: 160)

5′-GUAUUUGCCAUAAAUAAUACUAAAU-3′ (SEQ ID NO: 5164)
3'-CACAUAAACGGUAUUUAUUAUGAUUUA-5' (SEQ ID NO: 26)

KRAS-420 Target: 5′-GTGTATTTGCCATAAATAATACTAAAT-3′ (SEQ ID NO: 161)

5′-AUAAAUAAUACUAAAUCAUUUGAAG-3′ (SEQ ID NO: 5165)
3'-GGUAUUUAUUAUGAUUUAGUAAACUUC-5' (SEQ ID NO: 27)

KRAS-429 Target: 5′-CCATAAATAATACTAAATCATTTGAAG-3′ (SEQ ID NO: 162)

5′-UAAUACUAAAUCAUUUGAAGAUAUU-3′ (SEQ ID NO: 5166)
3'-UUAUUAUGAUUUAGUAAACUUCUAUAA-5' (SEQ ID NO: 28)

KRAS-434 Target: 5′-AATAATACTAAATCATTTGAAGATATT-3′ (SEQ ID NO: 163)

5′-ACUAAAUCAUUUGAAGAUAUUCACC-3′ (SEQ ID NO: 5167)
3'-UAUGAUUUAGUAAACUUCUAUAAGUGG-5' (SEQ ID NO: 29)

KRAS-438 Target: 5′-ATACTAAATCATTTGAAGATATTCACC-3′ (SEQ ID NO: 164)

5′-UAAAUCAUUUGAAGAUAUUCACCAU-3′ (SEQ ID NO: 5168)
3'-UGAUUUAGUAAACUUCUAUAAGUGGUA-5' (SEQ ID NO: 30)

KRAS-440 Target: 5′-ACTAAATCATTTGAAGATATTCACCAT-3′ (SEQ ID NO: 165)

5′-CAUUUGAAGAUAUUCACCAUUAUAG-3′ (SEQ ID NO: 5169)
3'-UAGUAAACUUCUAUAAGUGGUAAUAUC-5' (SEQ ID NO: 31)

KRAS-445 Target: 5′-ATCATTTGAAGATATTCACCATTATAG-3′ (SEQ ID NO: 166)

5′-GAAGAUAUUCACCAUUAUAGAGAAC-3′ (SEQ ID NO: 5170)
3'-AACUUCUAUAAGUGGUAAUAUCUCUUG-5' (SEQ ID NO: 32)

KRAS-450 Target: 5′-TTGAAGATATTCACCATTATAGAGAAC-3′ (SEQ ID NO: 167)

5′-AGAUAUUCACCAUUAUAGAGAACAA-3′ (SEQ ID NO: 5171)
3'-CUUCUAUAAGUGGUAAUAUCUCUUGUU-5' (SEQ ID NO: 33)

KRAS-452 Target: 5′-GAAGATATTCACCATTATAGAGAACAA-3′ (SEQ ID NO: 168)

5′-CUAUGGUCCUAGUAGGAAAUAAAUG-3′ (SEQ ID NO: 5172)
3'-UGGAUACCAGGAUCAUCCUUUAUUUAC-5' (SEQ ID NO: 34)

KRAS-508 Target: 5′-ACCTATGGTCCTAGTAGGAAATAAATG-3′ (SEQ ID NO: 169)

5′-GAUUUGCCUUCUAGAACAGUAGACA-3′ (SEQ ID NO: 5173)
3'-CACUAAACGGAAGAUCUUGUCAUCUGU-5' (SEQ ID NO: 35)

KRAS-534 Target: 5′-GTGATTTGCCTTCTAGAACAGTAGACA-3′ (SEQ ID NO: 170)

5′-GAUGAUGCCUUCUAUACAUUAGUUC-3′ (SEQ ID NO: 5174)
3'-AACUACUACGGAAGAUAUGUAAUCAAG-5' (SEQ ID NO: 36)

KRAS-760 Target: 5′-TTGATGATGCCTTCTATACATTAGTTC-3′ (SEQ ID NO: 171)

5′-CAUUAGUUCGAGAAAUUCGAAAACA-3′ (SEQ ID NO: 5175)
3'-AUGUAAUCAAGCUCUUUAAGCUUUUGU-5' (SEQ ID NO: 37)

KRAS-776 Target: 5′-TACATTAGTTCGAGAAATTCGAAAACA-3′ (SEQ ID NO: 172)

5′-AGAAAUUCGAAAACAUAAAGAAAAG-3′ (SEQ ID NO: 5176)
3'-GCUCUUUAAGCUUUUGUAUUUCUUUUC-5' (SEQ ID NO: 38)

KRAS-786 Target: 5′-CGAGAAATTCGAAAACATAAAGAAAAG-3′ (SEQ ID NO: 173)

5′-AAAACAUAAAGAAAAGAUGAGCAAA-3′ (SEQ ID NO: 5177)
3'-GCUUUUGUAUUUCUUUUCUACUCGUUU-5' (SEQ ID NO: 39)

KRAS-795 Target: 5′-CGAAAACATAAAGAAAAGATGAGCAAA-3′ (SEQ ID NO: 174)

5′-AUAAAGAAAAGAUGAGCAAAGAUGG-3′ (SEQ ID NO: 5178)
3'-UGUAUUUCUUUUCUACUCGUUUCUACC-5' (SEQ ID NO: 40)

KRAS-800 Target: 5′-ACATAAAGAAAAGATGAGCAAAGATGG-3′ (SEQ ID NO: 175)

5′-AUAAAGAAAAGAUGAGCAAAGACGG-3′ (SEQ ID NO: 5179)
3'-UGUAUUUCUUUUCUACUCGUUUCUGCC-5' (SEQ ID NO: 140)

KRAS-800* Target: 5′-ACATAAAGAAAAGATGAGCAAAGACGG-3′ (SEQ ID NO: 176)

5′-UUGUACAUUACACUAAAUUAUUAGC-3′ (SEQ ID NO: 5180)
3'-AAAACAUGUAAUGUGAUUUAAUAAUCG-5' (SEQ ID NO: 41)

KRAS-920 Target: 5′-TTTTGTACATTACACTAAATTATTAGC-3′ (SEQ ID NO: 177)

5′-AAUUAUUAGCAUUUGUUUUAGCAUU-3′ (SEQ ID NO: 5181)
3'-AUUUAAUAAUCGUAAACAAAAUCGUAA-5' (SEQ ID NO: 42)

KRAS-935 Target: 5′-TAAATTATTAGCATTTGTTTTAGCATT-3′ (SEQ ID NO: 178)

5′-UUAGCAUUUGUUUUAGCAUUACCUA-3′ (SEQ ID NO: 5182)
3'-AUAAUCGUAAACAAAAUCGUAAUGGAU-5' (SEQ ID NO: 43)

KRAS-940 Target: 5′-TATTAGCATTTGTTTTAGCATTACCTA-3′ (SEQ ID NO: 179)

5′-AGUUUUUUUUUCCUCUAAGUGCCAG-3′ (SEQ ID NO: 5183)
3'-CUUCAAAAAAAAAGGAGAUUCACGGUC-5' (SEQ ID NO: 44)

KRAS-1032 Target: 5′-GAAGTTTTTTTTTCCTCTAAGTGCCAG-3′ (SEQ ID NO: 180)

5′-AAGUGCCAGUAUUCCCAGAGUUUUG-3′ (SEQ ID NO: 5184)
3'-GAUUCACGGUCAUAAGGGUCUCAAAAC-5' (SEQ ID NO: 45)

KRAS-1048 Target: 5′-CTAAGTGCCAGTATTCCCAGAGTTTTG-3′ (SEQ ID NO: 181)

5′-GGUGUGAAACAAAUUAAUGAAGCUU-3′ (SEQ ID NO: 5185)
3'-AACCACACUUUGUUUAAUUACUUCGAA-5' (SEQ ID NO: 46)

KRAS-1188 Target: 5′-TTGGTGTGAAACAAATTAATGAAGCTT-3′ (SEQ ID NO: 182)

5′-AUUAAUUACUAAUUUCAGUUGAGAC-3′ (SEQ ID NO: 5186)
3'-CCUAAUUAAUGAUUAAAGUCAACUCUG-5' (SEQ ID NO: 47)

KRAS-1256 Target: 5′-GGATTAATTACTAATTTCAGTTGAGAC-3′ (SEQ ID NO: 183)

5′-UAUAUUUACAUGCUACUAAAUUUUU-3′ (SEQ ID NO: 5187)
3'-CGAUAUAAAUGUACGAUGAUUUAAAAA-5' (SEQ ID NO: 48)

KRAS-1634 Target: 5′-GCTATATTTACATGCTACTAAATTTTT-3′ (SEQ ID NO: 184)

5′-UUUAACUAUUUUUGUAUAGUGUAAA-3′ (SEQ ID NO: 5188)
3'-UAAAAUUGAUAAAAACAUAUCACAUUU-5' (SEQ ID NO: 49)

KRAS-5134 Target: 5′-ATTTTAACTATTTTTGTATAGTGTAAA-3′ (SEQ ID NO: 185)

5′-CAGUGUGAUCCAGUUGUUUUCCAUC-3′ (SEQ ID NO: 5189)
3'-ACGUCACACUAGGUCAACAAAAGGUAG-5' (SEQ ID NO: 50)

KRAS-5208 Target: 5′-TGCAGTGTGATCCAGTTGTTTTCCATC-3′ (SEQ ID NO: 186)

5'-CUGAAAAUGACUGAAUAUAAACUUG-3' (SEQ ID NO: 5190)
3'-ACGACUUUUACUGACUUAUAUUUGAAC-5' (SEQ ID NO: 189)

KRAS-174 Target: 5'-TGCTGAAAATGACTGAATATAAACTTG-3' (SEQ ID NO: 1595)

5'-AUGACUGAAUAUAAACUUGUGGUAG-3' (SEQ ID NO: 5191)
3'-UUUACUGACUUAUAUUUGAACACCAUC-5' (SEQ ID NO: 190)

KRAS-180 Target: 5'-AAATGACTGAATATAAACTTGTGGTAG-3' (SEQ ID NO: 1596)

5'-CUGAAUAUAAACUUGUGGUAGUUGG-3' (SEQ ID NO: 5192)
3'-CUGACUUAUAUUUGAACACCAUCAACC-5' (SEQ ID NO: 191)

KRAS-184 Target: 5'-GACTGAATATAAACTTGTGGTAGTTGG-3' (SEQ ID NO: 1597)

5'-CUAAUUCAGAAUCAUUUUGUGGACG-3' (SEQ ID NO: 5193)
3'-UCGAUUAAGUCUUAGUAAAACACCUGC-5' (SEQ ID NO: 192)

KRAS-246 Target: 5'-AGCTAATTCAGAATCATTTTGTGGACG-3' (SEQ ID NO: 1598)

5'-GAAUAUGAUCCAACAAUAGAGGAUU-3' (SEQ ID NO: 5194)
3'-UGCUUAUACUAGGUUGUUAUCUCCUAA-5' (SEQ ID NO: 193)

KRAS-270 Target: 5'-ACGAATATGATCCAACAATAGAGGATT-3' (SEQ ID NO: 1599)

5'-CAAGUAGUAAUUGAUGGAGAAACCU-3' (SEQ ID NO: 5195)
3'-UCGUUCAUCAUUAACUACCUCUUUGGA-5' (SEQ ID NO: 194)

KRAS-306 Target: 5'-AGCAAGTAGTAATTGATGGAGAAACCT-3' (SEQ ID NO: 1600)

5'-AGGGCUUUCUUUGUGUAUUUGCCAU-3' (SEQ ID NO: 5196)
3'-CCUCCCGAAAGAAACACAUAAACGGUA-5' (SEQ ID NO: 195)

KRAS-406 Target: 5'-GGAGGGCTTTCTTTGTGTATTTGCCAT-3' (SEQ ID NO: 1601)

5'-UUUGUGUAUUUGCCAUAAAUAAUAC-3' (SEQ ID NO: 5197)
3'-AGAAACACAUAAACGGUAUUUAUUAUG-5' (SEQ ID NO: 196)

KRAS-415 Target: 5'-TCTTTGTGTATTTGCCATAAATAATAC-3' (SEQ ID NO: 1602)

5'-UUGUGUAUUUGCCAUAAAUAAUACU-3' (SEQ ID NO: 5198)
3'-GAAACACAUAAACGGUAUUUAUUAUGA-5' (SEQ ID NO: 197)

KRAS-416 Target: 5'-CTTTGTGTATTTGCCATAAATAATACT-3' (SEQ ID NO: 1603)

5'-UGUGUAUUUGCCAUAAAUAAUACUA-3' (SEQ ID NO: 5199)
3'-AAACACAUAAACGGUAUUUAUUAUGAU-5' (SEQ ID NO: 198)

KRAS-417 Target: 5'-TTTGTGTATTTGCCATAAATAATACTA-3' (SEQ ID NO: 1604)

5'-GUGUAUUUGCCAUAAAUAAUACUAA-3' (SEQ ID NO: 5200)
3'-AACACAUAAACGGUAUUUAUUAUGAUU-5' (SEQ ID NO: 199)

KRAS-418 Target: 5'-TTGTGTATTTGCCATAAATAATACTAA-3' (SEQ ID NO: 1605)

5'-AUUUGCCAUAAAUAAUACUAAAUCA-3' (SEQ ID NO: 5201)
3'-CAUAAACGGUAUUUAUUAUGAUUUAGU-5' (SEQ ID NO: 200)

KRAS-422 Target: 5'-GTATTTGCCATAAATAATACTAAATCA-3' (SEQ ID NO: 1606)

5'-UUUGCCAUAAAUAAUACUAAAUCAU-3' (SEQ ID NO: 5202)
3'-AUAAACGGUAUUUAUUAUGAUUUAGUA-5' (SEQ ID NO: 201)

KRAS-423 Target: 5'-TATTTGCCATAAATAATACTAAATCAT-3' (SEQ ID NO: 1607)

5'-AUAAAUAAUACUAAAUCAUUUGAAG-3' (SEQ ID NO: 5203)
3'-GGUAUUUAUUAUGAUUUAGUAAACUUC-5' (SEQ ID NO: 202)

KRAS-429 Target: 5'-CCATAAATAATACTAAATCATTTGAAG-3' (SEQ ID NO: 1608)

5'-UAAAUAAUACUAAAUCAUUUGAAGA-3' (SEQ ID NO: 5204)
3'-GUAUUUAUUAUGAUUUAGUAAACUUCU-5' (SEQ ID NO: 203)

KRAS-430 Target: 5'-CATAAATAATACTAAATCATTTGAAGA-3' (SEQ ID NO: 1609)

5'-AAUAAUACUAAAUCAUUUGAAGAUA-3' (SEQ ID NO: 5205)
3'-AUUUAUUAUGAUUUAGUAAACUUCUAU-5' (SEQ ID NO: 204)

KRAS-432 Target: 5'-TAAATAATACTAAATCATTTGAAGATA-3' (SEQ ID NO: 1610)

5'-AUAAUACUAAAUCAUUUGAAGAUAU-3' (SEQ ID NO: 5206)
3'-UUUAUUAUGAUUUAGUAAACUUCUAUA-5' (SEQ ID NO: 205)

KRAS-433 Target: 5'-AAATAATACTAAATCATTTGAAGATAT-3' (SEQ ID NO: 1611)

5'-UAAUACUAAAUCAUUUGAAGAUAUU-3' (SEQ ID NO: 5207)
3'-UUAUUAUGAUUUAGUAAACUUCUAUAA-5' (SEQ ID NO: 206)

KRAS-434 Target: 5'-AATAATACTAAATCATTTGAAGATATT-3' (SEQ ID NO: 1612)

5'-AAUACUAAAUCAUUUGAAGAUAUUC-3' (SEQ ID NO: 5208)
3'-UAUUAUGAUUUAGUAAACUUCUAUAAG-5' (SEQ ID NO: 207)

KRAS-435 Target: 5'-ATAATACTAAATCATTTGAAGATATTC-3' (SEQ ID NO: 1613)

5'-UUGAAGAUAUUCACCAUUAUAGAGA-3' (SEQ ID NO: 5209)
3'-UAAACUUCUAUAAGUGGUAAUAUCUCU-5' (SEQ ID NO: 208)

KRAS-448 Target: 5'-ATTTGAAGATATTCACCATTATAGAGA-3' (SEQ ID NO: 1614)

5'-GAAGAUAUUCACCAUUAUAGAGAAC-3' (SEQ ID NO: 5210)
3'-AACUUCUAUAAGUGGUAAUAUCUCUUG-5' (SEQ ID NO: 209)

KRAS-450 Target: 5'-TTGAAGATATTCACCATTATAGAGAAC-3' (SEQ ID NO: 1615)

5'-AAGAUAUUCACCAUUAUAGAGAACA-3' (SEQ ID NO: 5211)
3'-ACUUCUAUAAGUGGUAAUAUCUCUUGU-5' (SEQ ID NO: 210)

KRAS-451 Target: 5'-TGAAGATATTCACCATTATAGAGAACA-3' (SEQ ID NO: 1616)

5'-AGAUAUUCACCAUUAUAGAGAACAA-3' (SEQ ID NO: 5212)
3'-CUUCUAUAAGUGGUAAUAUCUCUUGUU-5' (SEQ ID NO: 211)

KRAS-452 Target: 5'-GAAGATATTCACCATTATAGAGAACAA-3' (SEQ ID NO: 1617)

5'-GAUAUUCACCAUUAUAGAGAACAAA-3' (SEQ ID NO: 5213)
3'-UUCUAUAAGUGGUAAUAUCUCUUGUUU-5' (SEQ ID NO: 212)

KRAS-453 Target: 5'-AAGATATTCACCATTATAGAGAACAAA-3' (SEQ ID NO: 1618)

5'-AUUAUAGAGAACAAAUUAAAAGAGU-3' (SEQ ID NO: 5214)
3'-GGUAAUAUCUCUUGUUUAAUUUUCUCA-5' (SEQ ID NO: 213)

KRAS-463 Target: 5'-CCATTATAGAGAACAAATTAAAAGAGT-3' (SEQ ID NO: 1619)

5'-UAUAGAGAACAAAUUAAAAGAGUUA-3' (SEQ ID NO: 5215)
3'-UAAUAUCUCUUGUUUAAUUUUCUCAAU-5' (SEQ ID NO: 214)

KRAS-465 Target: 5'-ATTATAGAGAACAAATTAAAAGAGTTA-3' (SEQ ID NO: 1620)

5'-AUAGAGAACAAAUUAAAAGAGUUAA-3' (SEQ ID NO: 5216)
3'-AAUAUCUCUUGUUUAAUUUUCUCAAUU-5' (SEQ ID NO: 215)

KRAS-466 Target: 5'-TTATAGAGAACAAATTAAAAGAGTTAA-3' (SEQ ID NO: 1621)

5'-UAGAGAACAAAUUAAAAGAGUUAAG-3' (SEQ ID NO: 5217)
3'-AUAUCUCUUGUUUAAUUUUCUCAAUUC-5' (SEQ ID NO: 216)

KRAS-467 Target: 5'-TATAGAGAACAAATTAAAAGAGTTAAG-3' (SEQ ID NO: 1622)

5'-AGAGAACAAAUUAAAAGAGUUAAGG-3' (SEQ ID NO: 5218)
3'-UAUCUCUUGUUUAAUUUUCUCAAUUCC-5' (SEQ ID NO: 217)

KRAS-468 Target: 5'-ATAGAGAACAAATTAAAAGAGTTAAGG-3' (SEQ ID NO: 1623)

5'-AGUAGGAAAUAAAUGUGAUUUGCCU-3' (SEQ ID NO: 5219)
3'-GAUCAUCCUUUAUUUACACUAAACGGA-5' (SEQ ID NO: 218)

KRAS-518 Target: 5'-CTAGTAGGAAATAAATGTGATTTGCCT-3' (SEQ ID NO: 1624)

5'-GUAGGAAAUAAAUGUGAUUUGCCUU-3' (SEQ ID NO: 5220)
3'-AUCAUCCUUUAUUUACACUAAACGGAA-5' (SEQ ID NO: 219)

KRAS-519 Target: 5'-TAGTAGGAAATAAATGTGATTTGCCTT-3' (SEQ ID NO: 1625)

5'-GAAGUUAUGGAAUUCCUUUUAUUGA-3' (SEQ ID NO: 5221)
3'-UUCUUCAAUACCUUAAGGAAAAUAACU-5' (SEQ ID NO: 220)

KRAS-583 Target: 5'-AAGAAGTTATGGAATTCCTTTTATTGA-3' (SEQ ID NO: 1626)

5'-GUUAUGGAAUUCCUUUUAUUGAAAC-3' (SEQ ID NO: 5222)
3'-UUCAAUACCUUAAGGAAAAUAACUUUG-5' (SEQ ID NO: 221)

KRAS-586 Target: 5'-AAGTTATGGAATTCCTTTTATTGAAAC-3' (SEQ ID NO: 1627)

5'-UUAUGGAAUUCCUUUUAUUGAAACA-3' (SEQ ID NO: 5223)
3'-UCAAUACCUUAAGGAAAAUAACUUUGU-5' (SEQ ID NO: 222)

KRAS-587 Target: 5'-AGTTATGGAATTCCTTTTATTGAAACA-3' (SEQ ID NO: 1628)

5'-UAUGGAAUUCCUUUUAUUGAAACAU-3' (SEQ ID NO: 5224)
3'-CAAUACCUUAAGGAAAAUAACUUUGUA-5' (SEQ ID NO: 223)

KRAS-588 Target: 5'-GTTATGGAATTCCTTTTATTGAAACAT-3' (SEQ ID NO: 1629)

5'-AUGGAAUUCCUUUUAUUGAAACAUC-3' (SEQ ID NO: 5225)
3'-AAUACCUUAAGGAAAAUAACUUUGUAG-5' (SEQ ID NO: 224)

KRAS-589 Target: 5'-TTATGGAATTCCTTTTATTGAAACATC-3' (SEQ ID NO: 1630)

5'-GAGGAUGCUUUUUAUACAUUGGUGA-3' (SEQ ID NO: 5226)
3'-ACCUCCUACGAAAAAUAUGUAACCACU-5' (SEQ ID NO: 225)

KRAS-636 Target: 5'-TGGAGGATGCTTTTTATACATTGGTGA-3' (SEQ ID NO: 1631)

5'-GGAUGCUUUUUAUACAUUGGUGAGG-3' (SEQ ID NO: 5227)
3'-CUCCUACGAAAAAUAUGUAACCACUCC-5' (SEQ ID NO: 226)

KRAS-638 Target: 5'-GAGGATGCTTTTTATACATTGGTGAGG-3' (SEQ ID NO: 1632)

5'-AGAUUGAAAAAAAAUCAGCAAAGAAG-3' (SEQ ID NO: 5228)
3'-UGUCUAACUUUUUUUAGUCGUUUCUUC-5' (SEQ ID NO: 227)

KRAS-678 Target: 5'-ACAGATTGAAAAAAATCAGCAAAGAAG-3' (SEQ ID NO: 1633)

5'-GAUUGAAAAAAAAUCAGCAAAGAAGA-3' (SEQ ID NO: 5229)
3'-GUCUAACUUUUUUUAGUCGUUUCUUCU-5' (SEQ ID NO: 228)

KRAS-679 Target: 5'-CAGATTGAAAAAAATCAGCAAAGAAGA-3' (SEQ ID NO: 1634)

5'-UUGAAAAAAAAUCAGCAAAGAAGAAA-3' (SEQ ID NO: 5230)
3'-CUAACUUUUUUUAGUCGUUUCUUCUUU-5' (SEQ ID NO: 229)

KRAS-681 Target: 5'-GATTGAAAAAAATCAGCAAAGAAGAAA-3' (SEQ ID NO: 1635)

5'-UGAAAAAAAAUCAGCAAAGAAGAAAA-3' (SEQ ID NO: 5231)
3'-UAACUUUUUUUAGUCGUUUCUUCUUUU-5' (SEQ ID NO: 230)

KRAS-682 Target: 5'-ATTGAAAAAAATCAGCAAAGAAGAAAA-3' (SEQ ID NO: 1636)

5'-GAAAAAAAUCAGCAAAGAAGAAAAG-3' (SEQ ID NO: 5232)
3'-AACUUUUUUUAGUCGUUUCUUCUUUUC-5' (SEQ ID NO: 231)

KRAS-683 Target: 5'-TTGAAAAAAATCAGCAAAGAAGAAAAG-3' (SEQ ID NO: 1637)

5'-AAAAAAAUCAGCAAAGAAGAAAAGA-3' (SEQ ID NO: 5233)
3'-ACUUUUUUUAGUCGUUUCUUCUUUUCU-5' (SEQ ID NO: 232)

KRAS-684 Target: 5'-TGAAAAAAATCAGCAAAGAAGAAAAGA-3' (SEQ ID NO: 1638)

5'-CUGGCUGUGUGAAAAUUAAAAAAUG-3' (SEQ ID NO: 5234)
3'-AGGACCGACACACUUUUAAUUUUUUAC-5' (SEQ ID NO: 233)

KRAS-712 Target: 5'-TCCTGGCTGTGTGAAAATTAAAAAATG-3' (SEQ ID NO: 1639)

5'-CUGUGUGAAAAUUAAAAAAUGCAUU-3' (SEQ ID NO: 5235)
3'-CCGACACACUUUUAAUUUUUUACGUAA-5' (SEQ ID NO: 234)

KRAS-716 Target: 5'-GGCTGTGTGAAAATTAAAAAATGCATT-3' (SEQ ID NO: 1640)

5'-GUGAAAAUUAAAAAAUGCAUUAUAA-3' (SEQ ID NO: 5236)
3'-CACACUUUUAAUUUUUUACGUAAUAUU-5' (SEQ ID NO: 235)

KRAS-720 Target: 5'-GTGTGAAAATTAAAAAATGCATTATAA-3' (SEQ ID NO: 1641)

5'-UGAAAAUUAAAAAAUGCAUUAUAAU-3' (SEQ ID NO: 5237)
3'-ACACUUUUAAUUUUUUACGUAAUAUUA-5' (SEQ ID NO: 236)

KRAS-721 Target: 5'-TGTGAAAATTAAAAAATGCATTATAAT-3' (SEQ ID NO: 1642)

5'-GAAAAUUAAAAAAUGCAUUAUAAUG-3' (SEQ ID NO: 5238)
3'-CACUUUUAAUUUUUUACGUAAUAUUAC-5' (SEQ ID NO: 237)

KRAS-722 Target: 5'-GTGAAAATTAAAAAATGCATTATAATG-3' (SEQ ID NO: 1643)

5'-AAAAUUAAAAAAUGCAUUAUAAUGU-3' (SEQ ID NO: 5239)
3'-ACUUUUAAUUUUUUACGUAAUAUUACA-5' (SEQ ID NO: 238)

KRAS-723 Target: 5'-TGAAAATTAAAAAATGCATTATAATGT-3' (SEQ ID NO: 1644)

5'-AAUUAAAAAAUGCAUUAUAAUGUAA-3' (SEQ ID NO: 5240)
3'-UUUUAAUUUUUUACGUAAUAUUACAUU-5' (SEQ ID NO: 239)

KRAS-725 Target: 5'-AAAATTAAAAAATGCATTATAATGTAA-3' (SEQ ID NO: 1645)

5'-AUUAAAAAAUGCAUUAUAAUGUAAU-3' (SEQ ID NO: 5241)
3'-UUUAAUUUUUUACGUAAUAUUACAUUA-5' (SEQ ID NO: 240)

KRAS-726 Target: 5'-AAATTAAAAAATGCATTATAATGTAAT-3' (SEQ ID NO: 1646)

5'-UUAAAAAAUGCAUUAUAAUGUAAUC-3' (SEQ ID NO: 5242)
3'-UUAAUUUUUUACGUAAUAUUACAUUAG-5' (SEQ ID NO: 241)

KRAS-727 Target: 5'-AATTAAAAAATGCATTATAATGTAATC-3' (SEQ ID NO: 1647)

5'-UAAAAAAUGCAUUAUAAUGUAAUCU-3' (SEQ ID NO: 5243)
3'-UAAUUUUUUACGUAAUAUUACAUUAGA-5' (SEQ ID NO: 242)

KRAS-728 Target: 5'-ATTAAAAAATGCATTATAATGTAATCT-3' (SEQ ID NO: 1648)

5'-AAAAAUGCAUUAUAAUGUAAUCUGG-3' (SEQ ID NO: 5244)
3'-AUUUUUUACGUAAUAUUACAUUAGACC-5' (SEQ ID NO: 243)

KRAS-730 Target: 5'-TAAAAAATGCATTATAATGTAATCTGG-3' (SEQ ID NO: 1649)

5'-CAUUAUAAUGUAAUCUGGGUGUUGA-3' (SEQ ID NO: 5245)
3'-ACGUAAUAUUACAUUAGACCCACAACU-5' (SEQ ID NO: 244)

KRAS-737 Target: 5'-TGCATTATAATGTAATCTGGGTGTTGA-3' (SEQ ID NO: 1650)

5'-CGAGAAAUUCGAAAACAUAAAGAAA-3' (SEQ ID NO: 5246)
3'-AAGCUCUUUAAGCUUUUGUAUUUCUUU-5' (SEQ ID NO: 245)

KRAS-784 Target: 5'-TTCGAGAAATTCGAAAACATAAAGAAA-3' (SEQ ID NO: 1651)

5'-GAGAAAUUCGAAAACAUAAAGAAAA-3' (SEQ ID NO: 5247)
3'-AGCUCUUUAAGCUUUUGUAUUUCUUUU-5' (SEQ ID NO: 246)

KRAS-785 Target: 5'-TCGAGAAATTCGAAAACATAAAGAAAA-3' (SEQ ID NO: 1652)

5'-AGAAAUUCGAAAACAUAAAGAAAAG-3' (SEQ ID NO: 5248)
3'-GCUCUUUAAGCUUUUGUAUUUCUUUUC-5' (SEQ ID NO: 247)

KRAS-786 Target: 5'-CGAGAAATTCGAAAACATAAAGAAAAG-3' (SEQ ID NO: 1653)

5'-AAUUCGAAAACAUAAAGAAAAGAUG-3' (SEQ ID NO: 5249)
3'-CUUUAAGCUUUUGUAUUUCUUUUCUAC-5' (SEQ ID NO: 248)

KRAS-789 Target: 5'-GAAATTCGAAAACATAAAGAAAAGATG-3' (SEQ ID NO: 1654)

5'-GAAAACAUAAAGAAAAGAUGAGCAA-3' (SEQ ID NO: 5250)
3'-AGCUUUUGUAUUUCUUUUCUACUCGUU-5' (SEQ ID NO: 249)

KRAS-794 Target: 5'-TCGAAAACATAAAGAAAAGATGAGCAA-3' (SEQ ID NO: 1655)

5'-AAAACAUAAAGAAAAGAUGAGCAAA-3' (SEQ ID NO: 5251)
3'-GCUUUUGUAUUUCUUUUCUACUCGUUU-5' (SEQ ID NO: 250)

KRAS-795 Target: 5'-CGAAAACATAAAGAAAAGATGAGCAAA-3' (SEQ ID NO: 1656)

5'-AGAUGGUAAAAAGAAGAAAAAGAAG-3' (SEQ ID NO: 5252)
3'-UUUCUACCAUUUUUCUUCUUUUUCUUC-5' (SEQ ID NO: 251)

KRAS-819 Target: 5'-AAAGATGGTAAAAAGAAGAAAAAGAAG-3' (SEQ ID NO: 1657)

5'-GAUGGUAAAAAGAAGAAAAAGAAGU-3' (SEQ ID NO: 5253)
3'-UUCUACCAUUUUUCUUCUUUUUCUUCA-5' (SEQ ID NO: 252)

KRAS-820 Target: 5'-AAGATGGTAAAAAGAAGAAAAAGAAGT-3' (SEQ ID NO: 1658)

5'-UGGUAAAAAGAAGAAAAAGAAGUCA-3' (SEQ ID NO: 5254)
3'-CUACCAUUUUUCUUCUUUUUCUUCAGU-5' (SEQ ID NO: 253)

KRAS-822 Target: 5'-GATGGTAAAAAGAAGAAAAAGAAGTCA-3' (SEQ ID NO: 1659)

5'-GGUAAAAAGAAGAAAAAGAAGUCAA-3' (SEQ ID NO: 5255)
3'-UACCAUUUUUCUUCUUUUUCUUCAGUU-5' (SEQ ID NO: 254)

KRAS-823 Target: 5'-ATGGTAAAAAGAAGAAAAAGAAGTCAA-3' (SEQ ID NO: 1660)

5'-AAAGAAGAAAAAGAAGUCAAAGACA-3' (SEQ ID NO: 5256)
3'-UUUUUCUUCUUUUUCUUCAGUUUCUGU-5' (SEQ ID NO: 255)

KRAS-828 Target: 5'-AAAAAGAAGAAAAAGAAGTCAAAGACA-3' (SEQ ID NO: 1661)

5'-AAGAAGAAAAAGAAGUCAAAGACAA-3' (SEQ ID NO: 5257)
3'-UUUUCUUCUUUUUCUUCAGUUUCUGUU-5' (SEQ ID NO: 256)

KRAS-829 Target: 5'-AAAAGAAGAAAAAGAAGTCAAAGACAA-3' (SEQ ID NO: 1662)

5'-AGAAGAAAAAGAAGUCAAAGACAAA-3' (SEQ ID NO: 5258)
3'-UUUCUUCUUUUUCUUCAGUUUCUGUUU-5' (SEQ ID NO: 257)

KRAS-830 Target: 5'-AAAGAAGAAAAAGAAGTCAAAGACAAA-3' (SEQ ID NO: 1663)

5'-AAAGACAAAGUGUGUAAUUAUGUAA-3' (SEQ ID NO: 5259)
3'-AGUUUCUGUUUCACACAUUAAUACAUU-5' (SEQ ID NO: 258)

KRAS-846 Target: 5'-TCAAAGACAAAGTGTGTAATTATGTAA-3' (SEQ ID NO: 1664)

5'-AAGACAAAGUGUGUAAUUAUGUAAA-3' (SEQ ID NO: 5260)
3'-GUUUCUGUUUCACACAUUAAUACAUUU-5' (SEQ ID NO: 259)

KRAS-847 Target: 5'-CAAAGACAAAGTGTGTAATTATGTAAA-3' (SEQ ID NO: 1665)

5'-CAAAGUGUGUAAUUAUGUAAAUACA-3' (SEQ ID NO: 5261)
3'-CUGUUUCACACAUUAAUACAUUUAUGU-5' (SEQ ID NO: 260)

KRAS-851 Target: 5'-GACAAAGTGTGTAATTATGTAAATACA-3' (SEQ ID NO: 1666)

5'-AAGUGUGUAAUUAUGUAAAUACAAU-3' (SEQ ID NO: 5262)
3'-GUUUCACACAUUAAUACAUUUAUGUUA-5' (SEQ ID NO: 261)

KRAS-853 Target: 5'-CAAAGTGTGTAATTATGTAAATACAAT-3' (SEQ ID NO: 1667)

5'-GUGUAAUUAUGUAAAUACAAUUUGU-3' (SEQ ID NO: 5263)
3'-CACACAUUAAUACAUUUAUGUUAAACA-5' (SEQ ID NO: 262)

KRAS-857 Target: 5'-GTGTGTAATTATGTAAATACAATTTGT-3' (SEQ ID NO: 1668)

5'-GUAAUUAUGUAAAUACAAUUUGUAC-3' (SEQ ID NO: 5264)
3'-CACAUUAAUACAUUUAUGUUAAACAUG-5' (SEQ ID NO: 263)

KRAS-859 Target: 5'-GTGTAATTATGTAAATACAATTTGTAC-3' (SEQ ID NO: 1669)

5'-AAUUAUGUAAAUACAAUUUGUACUU-3' (SEQ ID NO: 5265)
3'-CAUUAAUACAUUUAUGUUAAACAUGAA-5' (SEQ ID NO: 264)

KRAS-861 Target: 5'-GTAATTATGTAAATACAATTTGTACTT-3' (SEQ ID NO: 1670)

5'-AUUAUGUAAAUACAAUUUGUACUUU-3' (SEQ ID NO: 5266)
3'-AUUAAUACAUUUAUGUUAAACAUGAAA-5' (SEQ ID NO: 265)

KRAS-862 Target: 5'-TAATTATGTAAATACAATTTGTACTTT-3' (SEQ ID NO: 1671)

5'-UGUAAAUACAAUUUGUACUUUUUUC-3' (SEQ ID NO: 5267)
3'-AUACAUUUAUGUUAAACAUGAAAAAAG-5' (SEQ ID NO: 266)

KRAS-866 Target: 5'-TATGTAAATACAATTTGTACTTTTTTC-3' (SEQ ID NO: 1672)

5'-GUAAAUACAAUUUGUACUUUUUUCU-3' (SEQ ID NO: 5268)
3'-UACAUUUAUGUUAAACAUGAAAAAAGA-5' (SEQ ID NO: 267)

KRAS-867 Target: 5'-ATGTAAATACAATTTGTACTTTTTTCT-3' (SEQ ID NO: 1673)

5'-UAAAUACAAUUUGUACUUUUUUCUU-3' (SEQ ID NO: 5269)
3'-ACAUUUAUGUUAAACAUGAAAAAAGAA-5' (SEQ ID NO: 268)

KRAS-868 Target: 5'-TGTAAATACAATTTGTACTTTTTTCTT-3' (SEQ ID NO: 1674)

5'-AAAUACAAUUUGUACUUUUUUCUUA-3' (SEQ ID NO: 5270)
3'-CAUUUAUGUUAAACAUGAAAAAAGAAU-5' (SEQ ID NO: 269)

KRAS-869 Target: 5'-GTAAATACAATTTGTACTTTTTTCTTA-3' (SEQ ID NO: 1675)

5'-AAUUUGUACUUUUUUCUUAAGGCAU-3' (SEQ ID NO: 5271)
3'-UGUUAAACAUGAAAAAAGAAUUCCGUA-5' (SEQ ID NO: 270)

KRAS-875 Target: 5'-ACAATTTGTACTTTTTTCTTAAGGCAT-3' (SEQ ID NO: 1676)

5'-AUUUGUACUUUUUUCUUAAGGCAUA-3' (SEQ ID NO: 5272)
3'-GUUAAACAUGAAAAAAGAAUUCCGUAU-5' (SEQ ID NO: 271)

KRAS-876 Target: 5'-CAATTTGTACTTTTTTCTTAAGGCATA-3' (SEQ ID NO: 1677)

5'-CUAGUACAAGUGGUAAUUUUUGUAC-3' (SEQ ID NO: 5273)
3'-AUGAUCAUGUUCACCAUUAAAAACAUG-5' (SEQ ID NO: 272)

KRAS-901 Target: 5'-TACTAGTACAAGTGGTAATTTTTGTAC-3' (SEQ ID NO: 1678)

5'-UAGUACAAGUGGUAAUUUUUGUACA-3' (SEQ ID NO: 5274)
3'-UGAUCAUGUUCACCAUUAAAAACAUGU-5' (SEQ ID NO: 273)

KRAS-902 Target: 5'-ACTAGTACAAGTGGTAATTTTTGTACA-3' (SEQ ID NO: 1679)

5'-AAGUGGUAAUUUUUGUACAUUACAC-3' (SEQ ID NO: 5275)
3'-UGUUCACCAUUAAAAACAUGUAAUGUG-5' (SEQ ID NO: 274)

KRAS-908 Target: 5'-ACAAGTGGTAATTTTTGTACATTACAC-3' (SEQ ID NO: 1680)

5'-AGUGGUAAUUUUUGUACAUUACACU-3' (SEQ ID NO: 5276)
3'-GUUCACCAUUAAAAACAUGUAAUGUGA-5' (SEQ ID NO: 275)

KRAS-909 Target: 5'-CAAGTGGTAATTTTTGTACATTACACT-3' (SEQ ID NO: 1681)

5'-AUUUUUGUACAUUACACUAAAUUAU-3' (SEQ ID NO: 5277)
3'-AUUAAAAACAUGUAAUGUGAUUUAAUA-5' (SEQ ID NO: 276)

KRAS-916 Target: 5'-TAATTTTTGTACATTACACTAAATTAT-3' (SEQ ID NO: 1682)

5'-UUUUUGUACAUUACACUAAAUUAUU-3' (SEQ ID NO: 5278)
3'-UUAAAAACAUGUAAUGUGAUUUAAUAA-5' (SEQ ID NO: 277)

KRAS-917 Target: 5'-AATTTTTGTACATTACACTAAATTATT-3' (SEQ ID NO: 1683)

5'-UUUUGUACAUUACACUAAAUUAUUA-3' (SEQ ID NO: 5279)
3'-UAAAAACAUGUAAUGUGAUUUAAUAAU-5' (SEQ ID NO: 278)

KRAS-918 Target: 5'-ATTTTTGTACATTACACTAAATTATTA-3' (SEQ ID NO: 1684)

5'-UUUGUACAUUACACUAAAUUAUUAG-3' (SEQ ID NO: 5280)
3'-AAAAACAUGUAAUGUGAUUUAAUAAUC-5' (SEQ ID NO: 279)

KRAS-919 Target: 5'-TTTTTGTACATTACACTAAATTATTAG-3' (SEQ ID NO: 1685)

5'-UUGUACAUUACACUAAAUUAUUAGC-3' (SEQ ID NO: 5281)
3'-AAAACAUGUAAUGUGAUUUAAUAAUCG-5' (SEQ ID NO: 280)

KRAS-920 Target: 5'-TTTTGTACATTACACTAAATTATTAGC-3' (SEQ ID NO: 1686)

5'-CUAAAUUAUUAGCAUUUGUUUUAGC-3' (SEQ ID NO: 5282)
3'-GUGAUUUAAUAAUCGUAAACAAAAUCG-5' (SEQ ID NO: 281)

KRAS-932 Target: 5'-CACTAAATTATTAGCATTTGTTTTAGC-3' (SEQ ID NO: 1687)

5'-AAAUUAUUAGCAUUUGUUUUAGCAU-3' (SEQ ID NO: 5283)
3'-GAUUUAAUAAUCGUAAACAAAAUCGUA-5' (SEQ ID NO: 282)

KRAS-934 Target: 5'-CTAAATTATTAGCATTTGTTTTAGCAT-3' (SEQ ID NO: 1688)

5'-AAUUAUUAGCAUUUGUUUUAGCAUU-3' (SEQ ID NO: 5284)
3'-AUUUAAUAAUCGUAAACAAAAUCGUAA-5' (SEQ ID NO: 283)

KRAS-935 Target: 5'-TAAATTATTAGCATTTGTTTTAGCATT-3' (SEQ ID NO: 1689)

5'-UUAGCAUUUGUUUUAGCAUUACCUA-3' (SEQ ID NO: 5285)
3'-AUAAUCGUAAACAAAAUCGUAAUGGAU-5' (SEQ ID NO: 284)

KRAS-940 Target: 5'-TATTAGCATTTGTTTTAGCATTACCTA-3' (SEQ ID NO: 1690)

5'-UUUGUUUUAGCAUUACCUAAUUUUU-3' (SEQ ID NO: 5286)
3'-GUAAACAAAAUCGUAAUGGAUUAAAAA-5' (SEQ ID NO: 285)

KRAS-946 Target: 5'-CATTTGTTTTAGCATTACCTAATTTTT-3' (SEQ ID NO: 1691)

5'-UUGUUUUAGCAUUACCUAAUUUUUU-3' (SEQ ID NO: 5287)
3'-UAAACAAAAUCGUAAUGGAUUAAAAAA-5' (SEQ ID NO: 286)

KRAS-947 Target: 5'-ATTTGTTTTAGCATTACCTAATTTTTT-3' (SEQ ID NO: 1692)

5'-GUUUUAGCAUUACCUAAUUUUUUUC-3' (SEQ ID NO: 5288)
3'-AACAAAAUCGUAAUGGAUUAAAAAAAG-5' (SEQ ID NO: 287)

KRAS-949 Target: 5'-TTGTTTTAGCATTACCTAATTTTTTTC-3' (SEQ ID NO: 1693)

5'-UUUUAGCAUUACCUAAUUUUUUUCC-3' (SEQ ID NO: 5289)
3'-ACAAAAUCGUAAUGGAUUAAAAAAAGG-5' (SEQ ID NO: 288)

KRAS-950 Target: 5'-TGTTTTAGCATTACCTAATTTTTTTCC-3' (SEQ ID NO: 1694)

5'-UUUAGCAUUACCUAAUUUUUUUCCU-3' (SEQ ID NO: 5290)
3'-CAAAAUCGUAAUGGAUUAAAAAAAGGA-5' (SEQ ID NO: 289)

KRAS-951 Target: 5'-GTTTTAGCATTACCTAATTTTTTTCCT-3' (SEQ ID NO: 1695)

5'-UUAGCAUUACCUAAUUUUUUUCCUG-3' (SEQ ID NO: 5291)
3'-AAAAUCGUAAUGGAUUAAAAAAAGGAC-5' (SEQ ID NO: 290)

KRAS-952 Target: 5'-TTTTAGCATTACCTAATTTTTTTCCTG-3' (SEQ ID NO: 1696)

5'-CUGUUAGCUUUUACCUUAAAUGCUU-3' (SEQ ID NO: 5292)
3'-CUGACAAUCGAAAAUGGAAUUUACGAA-5' (SEQ ID NO: 291)

KRAS-988 Target: 5'-GACTGTTAGCTTTTACCTTAAATGCTT-3' (SEQ ID NO: 1697)

5'-UGUUAGCUUUUACCUUAAAUGCUUA-3' (SEQ ID NO: 5293)
3'-UGACAAUCGAAAAUGGAAUUUACGAAU-5' (SEQ ID NO: 292)

KRAS-989 Target: 5'-ACTGTTAGCTTTTACCTTAAATGCTTA-3' (SEQ ID NO: 1698)

5'-CUUUUACCUUAAAUGCUUAUUUUAA-3' (SEQ ID NO: 5294)
3'-UCGAAAAUGGAAUUUACGAAUAAAAUU-5' (SEQ ID NO: 293)

KRAS-995 Target: 5'-AGCTTTTACCTTAAATGCTTATTTTAA-3' (SEQ ID NO: 1699)

5'-UUUUACCUUAAAUGCUUAUUUUAAA-3' (SEQ ID NO: 5295)
3'-CGAAAAUGGAAUUUACGAAUAAAAUUU-5' (SEQ ID NO: 294)

KRAS-996 Target: 5'-GCTTTTACCTTAAATGCTTATTTTAAA-3' (SEQ ID NO: 1700)

5'-UUUACCUUAAAUGCUUAUUUUAAAA-3' (SEQ ID NO: 5296)
3'-GAAAAUGGAAUUUACGAAUAAAAUUUU-5' (SEQ ID NO: 295)

KRAS-997 Target: 5'-CTTTTACCTTAAATGCTTATTTTAAAA-3' (SEQ ID NO: 1701)

5'-UUAAAUGCUUAUUUUAAAAUGACAG-3' (SEQ ID NO: 5297)
3'-GGAAUUUACGAAUAAAAUUUUACUGUC-5' (SEQ ID NO: 296)

KRAS-1003 Target: 5'-CCTTAAATGCTTATTTTAAAATGACAG-3' (SEQ ID NO: 1702)

5'-UAAAUGCUUAUUUUAAAAUGACAGU-3' (SEQ ID NO: 5298)
3'-GAAUUUACGAAUAAAAUUUUACUGUCA-5' (SEQ ID NO: 297)

KRAS-1004 Target: 5'-CTTAAATGCTTATTTTAAAATGACAGT-3' (SEQ ID NO: 1703)

5'-CUUAUUUUAAAAUGACAGUGGAAGU-3' (SEQ ID NO: 5299)
3'-ACGAAUAAAAUUUUACUGUCACCUUCA-5' (SEQ ID NO: 298)

KRAS-1010 Target: 5'-TGCTTATTTTAAAATGACAGTGGAAGT-3' (SEQ ID NO: 1704)

5'-UAUUUUAAAAUGACAGUGGAAGUUU-3' (SEQ ID NO: 5300)
3'-GAAUAAAAUUUUACUGUCACCUUCAAA-5' (SEQ ID NO: 299)

KRAS-1012 Target: 5'-CTTATTTTAAAATGACAGTGGAAGTTT-3' (SEQ ID NO: 1705)

5'-GGAAGUUUUUUUUUCCUCUAAGUGC-3' (SEQ ID NO: 5301)
3'-CACCUUCAAAAAAAAAAGGAGAUUCACG-5' (SEQ ID NO: 300)

KRAS-1029 Target: 5'-GTGGAAGTTTTTTTTTCCTCTAAGTGC-3' (SEQ ID NO: 1706)

5'-AAGUUUUUUUUUCCUCUAAGUGCCA-3' (SEQ ID NO: 5302)
3'-CCUUCAAAAAAAAAAGGAGAUUCACGGU-5' (SEQ ID NO: 301)

KRAS-1031 Target: 5'-GGAAGTTTTTTTTTCCTCTAAGTGCCA-3' (SEQ ID NO: 1707)

5'-AGUUUUUUUUUCCUCUAAGUGCCAG-3' (SEQ ID NO: 5303)
3'-CUUCAAAAAAAAAAGGAGAUUCACGGUC-5' (SEQ ID NO: 302)

KRAS-1032 Target: 5'-GAAGTTTTTTTTTCCTCTAAGTGCCAG-3' (SEQ ID NO: 1708)

5'-UUGGUUUUUGAACUAGCAAUGCCUG-3' (SEQ ID NO: 5304)
3'-AAAACCAAAAACUUGAUCGUUACGGAC-5' (SEQ ID NO: 303)

KRAS-1070 Target: 5'-TTTTGGTTTTTGAACTAGCAATGCCTG-3' (SEQ ID NO: 1709)

5'-CUGUGAAAAAGAAACUGAAUACCUA-3' (SEQ ID NO: 5305)
3'-CGGACACUUUUUCUUUGACUUAUGGAU-5' (SEQ ID NO: 304)

KRAS-1092 Target: 5'-GCCTGTGAAAAAGAAACTGAATACCTA-3' (SEQ ID NO: 1710)

5'-AAAGAAACUGAAUACCUAAGAUUUC-3' (SEQ ID NO: 5306)
3'-UUUUUCUUUGACUUAUGGAUUCUAAAG-5' (SEQ ID NO: 305)

KRAS-1099 Target: 5'-AAAAAGAAACTGAATACCTAAGATTTC-3' (SEQ ID NO: 1711)

5'-AAGAAACUGAAUACCUAAGAUUUCU-3' (SEQ ID NO: 5307)
3'-UUUUCUUUGACUUAUGGAUUCUAAAGA-5' (SEQ ID NO: 306)

KRAS-1100 Target: 5'-AAAAGAAACTGAATACCTAAGATTTCT-3' (SEQ ID NO: 1712)

5'-CUGAAUACCUAAGAUUUCUGUCUUG-3' (SEQ ID NO: 5308)
3'-UUGACUUAUGGAUUCUAAAGACAGAAC-5' (SEQ ID NO: 307)

KRAS-1106 Target: 5'-AACTGAATACCTAAGATTTCTGTCTTG-3' (SEQ ID NO: 1713)

5'-CAGUUGAUUACUUCUUAUUUUUCUU-3' (SEQ ID NO: 5309)
3'-ACGUCAACUAAUGAAGAAUAAAAAGAA-5' (SEQ ID NO: 308)

KRAS-1147 Target: 5'-TGCAGTTGATTACTTCTTATTTTTCTT-3' (SEQ ID NO: 1714)

5'-AGUUGAUUACUUCUUAUUUUUCUUA-3' (SEQ ID NO: 5310)
3'-CGUCAACUAAUGAAGAAUAAAAAGAAU-5' (SEQ ID NO: 309)

KRAS-1148 Target: 5'-GCAGTTGATTACTTCTTATTTTTCTTA-3' (SEQ ID NO: 1715)

5'-GAUUACUUCUUAUUUUUCUUACCAA-3' (SEQ ID NO: 5311)
3'-AACUAAUGAAGAAUAAAAAGAAUGGUU-5' (SEQ ID NO: 310)

KRAS-1152 Target: 5'-TTGATTACTTCTTATTTTTCTTACCAA-3' (SEQ ID NO: 1716)

5'-CUUAUUUUUCUUACCAAUUGUGAAU-3' (SEQ ID NO: 5312)
3'-AAGAAUAAAAAGAAUGGUUAACACUUA-5' (SEQ ID NO: 311)

KRAS-1160 Target: 5'-TTCTTATTTTTCTTACCAATTGTGAAT-3' (SEQ ID NO: 1717)

5'-UUAUUUUUCUUACCAAUUGUGAAUG-3' (SEQ ID NO: 5313)
3'-AGAAUAAAAAGAAUGGUUAACACUUAC-5' (SEQ ID NO: 312)

KRAS-1161 Target: 5'-TCTTATTTTTCTTACCAATTGTGAATG-3' (SEQ ID NO: 1718)

5'-UAUUUUUCUUACCAAUUGUGAAUGU-3' (SEQ ID NO: 5314)
3'-GAAUAAAAAGAAUGGUUAACACUUACA-5' (SEQ ID NO: 313)

KRAS-1162 Target: 5'-CTTATTTTTCTTACCAATTGTGAATGT-3' (SEQ ID NO: 1719)

5'-GUUGGUGUGAAACAAAUUAAUGAAG-3' (SEQ ID NO: 5315)
3'-UACAACCACACUUUGUUUAAUUACUUC-5' (SEQ ID NO: 314)

KRAS-1185 Target: 5'-ATGTTGGTGTGAAACAAATTAATGAAG-3' (SEQ ID NO: 1720)

5'-GGUGUGAAACAAAUUAAUGAAGCUU-3' (SEQ ID NO: 5316)
3'-AACCACACUUUGUUUAAUUACUUCGAA-5' (SEQ ID NO: 315)

KRAS-1188 Target: 5'-TTGGTGTGAAACAAATTAATGAAGCTT-3' (SEQ ID NO: 1721)

5'-GUGUGAAACAAAUUAAUGAAGCUUU-3' (SEQ ID NO: 5317)
3'-ACCACACUUUGUUUAAUUACUUCGAAA-5' (SEQ ID NO: 316)

KRAS-1189 Target: 5'-TGGTGTGAAACAAATTAATGAAGCTTT-3' (SEQ ID NO: 1722)

5'-CAAAUUAAUGAAGCUUUUGAAUCAU-3' (SEQ ID NO: 5318)
3'-UUGUUUAAUUACUUCGAAAACUUAGUA-5' (SEQ ID NO: 317)

KRAS-1197 Target: 5'-AACAAATTAATGAAGCTTTTGAATCAT-3' (SEQ ID NO: 1723)

5'-AAAUUAAUGAAGCUUUUGAAUCAUC-3' (SEQ ID NO: 5319)
3'-UGUUUAAUUACUUCGAAAACUUAGUAG-5' (SEQ ID NO: 318)

KRAS-1198 Target: 5'-ACAAATTAATGAAGCTTTTGAATCATC-3' (SEQ ID NO: 1724)

5'-UGUGUUUUAUCUAGUCACAUAAAAUG-3' (SEQ ID NO: 5320)
3'-AGACACAAAAUAGAUCAGUGUAUUUAC-5' (SEQ ID NO: 319)

KRAS-1230 Target: 5'-TCTGTGTTTTATCTAGTCACATAAATG-3' (SEQ ID NO: 1725)

5'-GUGUUUUAUCUAGUCACAUAAAUGG-3' (SEQ ID NO: 5321)
3'-GACACAAAAUAGAUCAGUGUAUUUACC-5' (SEQ ID NO: 320)

KRAS-1231 Target: 5'-CTGTGTTTTATCTAGTCACATAAATGG-3' (SEQ ID NO: 1726)

5'-UUUUAUCUAGUCACAUAAAUGGAUU-3' (SEQ ID NO: 5322)
3'-ACAAAAUAGAUCAGUGUAUUUACCUAA-5' (SEQ ID NO: 321)

KRAS-1234 Target: 5'-TGTTTTATCTAGTCACATAAATGGATT-3' (SEQ ID NO: 1727)

5'-UUUAUCUAGUCACAUAAAUGGAUUA-3' (SEQ ID NO: 5323)
3'-CAAAAUAGAUCAGUGUAUUUACCUAAU-5' (SEQ ID NO: 322)

KRAS-1235 Target: 5'-GTTTTATCTAGTCACATAAATGGATTA-3' (SEQ ID NO: 1728)

5'-CUAGUCACAUAAAUGGAUUAAUUAC-3' (SEQ ID NO: 5324)
3'-UAGAUCAGUGUAUUUACCUAAUUAAUG-5' (SEQ ID NO: 323)

KRAS-1240 Target: 5'-ATCTAGTCACATAAATGGATTAATTAC-3' (SEQ ID NO: 1729)

5'-UAGUCACAUAAAUGGAUUAAUUACU-3' (SEQ ID NO: 5325)
3'-AGAUCAGUGUAUUUACCUAAUUAAUGA-5' (SEQ ID NO: 324)

KRAS-1241 Target: 5'-TCTAGTCACATAAATGGATTAATTACT-3' (SEQ ID NO: 1730)

5'-UAAAUGGAUUAAUUACUAAUUUCAG-3' (SEQ ID NO: 5326)
3'-GUAUUUACCUAAUUAAUGAUUAAAGUC-5' (SEQ ID NO: 325)

KRAS-1249 Target: 5'-CATAAATGGATTAATTACTAATTTCAG-3' (SEQ ID NO: 1731)

5'-AAAUGGAUUAAUUACUAAUUUCAGU-3' (SEQ ID NO: 5327)
3'-UAUUUACCUAAUUAAUGAUUAAAGUCA-5' (SEQ ID NO: 326)

KRAS-1250 Target: 5'-ATAAATGGATTAATTACTAATTTCAGT-3' (SEQ ID NO: 1732)

5'-GAUUAAUUACUAAUUUCAGUUGAGA-3' (SEQ ID NO: 5328)
3'-ACCUAAUUAAUGAUUAAAGUCAACUCU-5' (SEQ ID NO: 327)

KRAS-1255 Target: 5'-TGGATTAATTACTAATTTCAGTTGAGA-3' (SEQ ID NO: 1733)

5'-UUAAUUACUAAUUUCAGUUGAGACC-3' (SEQ ID NO: 5329)
3'-CUAAUUAAUGAUUAAAGUCAACUCUGG-5' (SEQ ID NO: 328)

KRAS-1257 Target: 5'-GATTAATTACTAATTTCAGTTGAGACC-3' (SEQ ID NO: 1734)

5'-UAAUUACUAAUUUCAGUUGAGACCU-3' (SEQ ID NO: 5330)
3'-UAAUUAAUGAUUAAAGUCAACUCUGGA-5' (SEQ ID NO: 329)

KRAS-1258 Target: 5'-ATTAATTACTAATTTCAGTTGAGACCT-3' (SEQ ID NO: 1735)

5'-AAUUACUAAUUUCAGUUGAGACCUU-3' (SEQ ID NO: 5331)
3'-AAUUAAUGAUUAAAGUCAACUCUGGAA-5' (SEQ ID NO: 330)

KRAS-1259 Target: 5'-TTAATTACTAATTTCAGTTGAGACCTT-3' (SEQ ID NO: 1736)

5'-AUUGGUUUUUACUGAAACAUUGAGG-3' (SEQ ID NO: 5332)
3'-AUUAACCAAAAAUGACUUUGUAACUCC-5' (SEQ ID NO: 331)

KRAS-1287 Target: 5'-TAATTGGTTTTTACTGAAACATTGAGG-3' (SEQ ID NO: 1737)

5'-GUUUUUACUGAAACAUUGAGGGAAC-3' (SEQ ID NO: 5333)
3'-ACCAAAAAAUGACUUUGUAACUCCCUUG-5' (SEQ ID NO: 332)

KRAS-1291 Target: 5'-TGGTTTTTACTGAAACATTGAGGGAAC-3' (SEQ ID NO: 1738)

5'-UUUUUACUGAAACAUUGAGGGAACA-3' (SEQ ID NO: 5334)
3'-CCAAAAAUGACUUUGUAACUCCCUUGU-5' (SEQ ID NO: 333)

KRAS-1292 Target: 5'-GGTTTTTACTGAAACATTGAGGGAACA-3' (SEQ ID NO: 1739)

5'-UGAGGGAACACAAAUUUAUGGGCUU-3' (SEQ ID NO: 5335)
3'-UAACUCCCUUGUGUUUAAAUACCCGAA-5' (SEQ ID NO: 334)

KRAS-1307 Target: 5'-ATTGAGGGAACACAAATTTATGGGCTT-3' (SEQ ID NO: 1740)

5'-GAGGGAACACAAAUUUAUGGGCUUC-3' (SEQ ID NO: 5336)
3'-AACUCCCUUGUGUUUAAAUACCCGAAG-5' (SEQ ID NO: 335)

KRAS-1308 Target: 5'-TTGAGGGAACACAAATTTATGGGCTTC-3' (SEQ ID NO: 1741)

5'-AUGAAUGUAAAGUUACACUGUUCAC-3' (SEQ ID NO: 5337)
3'-ACUACUUACAUUUCAAUGUGACAAGUG-5' (SEQ ID NO: 336)

KRAS-1381 Target: 5'-TGATGAATGTAAAGTTACACTGTTCAC-3' (SEQ ID NO: 1742)

5'-UGAAUGUAAAGUUACACUGUUCACA-3' (SEQ ID NO: 5338)
3'-CUACUUACAUUUCAAUGUGACAAGUGU-5' (SEQ ID NO: 337)

KRAS-1382 Target: 5'-GATGAATGTAAAGTTACACTGTTCACA-3' (SEQ ID NO: 1743)

5'-AAAAUAUUAUAUUUUUUCUAUAAAA-3' (SEQ ID NO: 5339)
3'-GGUUUUAUAAUAUAAAAAAGAUAUUUU-5' (SEQ ID NO: 338)

KRAS-1454 Target: 5'-CCAAAATATTATATTTTTTCTATAAAA-3' (SEQ ID NO: 1744)

5'-AAAUAUUAUAUUUUUUCUAUAAAAA-3' (SEQ ID NO: 5340)
3'-GUUUUAUAAUAUAAAAAAGAUAUUUU-5' (SEQ ID NO: 339)

KRAS-1455 Target: 5'-CAAAATATTATATTTTTTCTATAAAAA-3' (SEQ ID NO: 1745)

5'-AAUAUUAUAUUUUUUCUAUAAAAAG-3' (SEQ ID NO: 5341)
3'-UUUUAUAAUAUAAAAAAGAUAUUUUC-5' (SEQ ID NO: 340)

KRAS-1456 Target: 5'-AAAATATTATATTTTTTCTATAAAAAG-3' (SEQ ID NO: 1746)

5'-AUAUUAUAUUUUUUCUAUAAAAAGA-3' (SEQ ID NO: 5342)
3'-UUUAUAAUAUAAAAAAGAUAUUUUCU-5' (SEQ ID NO: 341)

KRAS-1457 Target: 5'-AAATATTATATTTTTTCTATAAAAAGA-3' (SEQ ID NO: 1747)

5'-AUUAUAUUUUUUCUAUAAAAAGAAA-3' (SEQ ID NO: 5343)
3'-UAUAAUAUAAAAAAGAUAUUUUUCUUU-5' (SEQ ID NO: 342)

KRAS-1459 Target: 5'-ATATTATATTTTTTCTATAAAAAGAAA-3' (SEQ ID NO: 1748)

5'-UUAUAUUUUUUCUAUAAAAAGAAAA-3' (SEQ ID NO: 5344)
3'-AUAAUAUAAAAAAGAUAUUUUUCUUUU-5' (SEQ ID NO: 343)

KRAS-1460 Target: 5'-TATTATATTTTTTCTATAAAAAGAAAA-3' (SEQ ID NO: 1749)

5'-UAUAUUUUUUCUAUAAAAAGAAAAA-3' (SEQ ID NO: 5345)
3'-UAAUAUAAAAAAGAUAUUUUUCUUUUU-5' (SEQ ID NO: 344)

KRAS-1461 Target: 5'-ATTATATTTTTTCTATAAAAAGAAAAA-3' (SEQ ID NO: 1750)

5'-AUAUUUUUUCUAUAAAAAGAAAAAA-3' (SEQ ID NO: 5346)
3'-AAUAUAAAAAAGAUAUUUUUCUUUUUU-5' (SEQ ID NO: 345)

KRAS-1462 Target: 5'-TTATATTTTTTCTATAAAAAGAAAAAA-3' (SEQ ID NO: 1751)

5'-UAUUUUUUCUAUAAAAAGAAAAAAA-3' (SEQ ID NO: 5347)
3'-AUAUAAAAAAGAUAUUUUUCUUUUUUU-5' (SEQ ID NO: 346)

KRAS-1463 Target: 5'-TATATTTTTTCTATAAAAAGAAAAAAA-3' (SEQ ID NO: 1752)

5'-AUUUUUUCUAUAAAAAGAAAAAAAU-3' (SEQ ID NO: 5348)
3'-UAUAAAAAAGAUAUUUUUCUUUUUUUA-5' (SEQ ID NO: 347)

KRAS-1464 Target: 5'-ATATTTTTTCTATAAAAAGAAAAAAAT-3' (SEQ ID NO: 1753)

5'-UUUUUUCUAUAAAAAGAAAAAAAUG-3' (SEQ ID NO: 5349)
3'-AUAAAAAAGAUAUUUUUCUUUUUUUAC-5' (SEQ ID NO: 348)

KRAS-1465 Target: 5'-TATTTTTTCTATAAAAAGAAAAAAATG-3' (SEQ ID NO: 1754)

5'-UUUUUCUAUAAAAAGAAAAAAAUGG-3' (SEQ ID NO: 5350)
3'-UAAAAAAGAUAUUUUUCUUUUUUUACC-5' (SEQ ID NO: 349)

KRAS-1466 Target: 5'-ATTTTTTCTATAAAAAGAAAAAAATGG-3' (SEQ ID NO: 1755)

5'-CUAUAAAAAGAAAAAAAUGGAAAAA-3' (SEQ ID NO: 5351)
3'-AAGAUAUUUUUCUUUUUUUACCUUUUU-5' (SEQ ID NO: 350)

KRAS-1471 Target: 5'-TTCTATAAAAAGAAAAAAATGGAAAAA-3' (SEQ ID NO: 1756)

5'-UAUAAAAAGAAAAAAAUGGAAAAAA-3' (SEQ ID NO: 5352)
3'-AGAUAUUUUUCUUUUUUUACCUUUUUU-5' (SEQ ID NO: 351)

KRAS-1472 Target: 5'-TCTATAAAAAGAAAAAAATGGAAAAAA-3' (SEQ ID NO: 1757)

5'-UAAAAAGAAAAAAAUGGAAAAAAAU-3' (SEQ ID NO: 5353)
3'-AUAUUUUUCUUUUUUUACCUUUUUUUA-5' (SEQ ID NO: 352)

KRAS-1474 Target: 5'-TATAAAAAGAAAAAAATGGAAAAAAAT-3' (SEQ ID NO: 1758)

5'-AAAAAGAAAAAAAAUGGAAAAAAAUU-3' (SEQ ID NO: 5354)
3'-UAUUUUUCUUUUUUUACCUUUUUUUAA-5' (SEQ ID NO: 353)

KRAS-1475 Target: 5'-ATAAAAAGAAAAAAATGGAAAAAAATT-3' (SEQ ID NO: 1759)

5'-AAAAGAAAAAAAUGGAAAAAAAUUA-3' (SEQ ID NO: 5355)
3'-AUUUUUCUUUUUUUACCUUUUUUUAAU-5' (SEQ ID NO: 354)

KRAS-1476 Target: 5'-TAAAAAGAAAAAAATGGAAAAAAATTA-3' (SEQ ID NO: 1760)

5'-AAAGAAAAAAAUGGAAAAAAAUUAC-3' (SEQ ID NO: 5356)
3'-UUUUUCUUUUUUUACCUUUUUUUAAUG-5' (SEQ ID NO: 355)

KRAS-1477 Target: 5'-AAAAAGAAAAAAATGGAAAAAAATTAC-3' (SEQ ID NO: 1761)

5'-AAGAAAAAAAUGGAAAAAAAUUACA-3' (SEQ ID NO: 5357)
3'-UUUUCUUUUUUUACCUUUUUUUAAUGU-5' (SEQ ID NO: 356)

KRAS-1478 Target: 5'-AAAAGAAAAAAATGGAAAAAAATTACA-3' (SEQ ID NO: 1762)

5'-AGAAAAAAAUGGAAAAAAAUUACAA-3' (SEQ ID NO: 5358)
3'-UUUCUUUUUUUACCUUUUUUUAAUGUU-5' (SEQ ID NO: 357)

KRAS-1479 Target: 5'-AAAGAAAAAAATGGAAAAAAATTACAA-3' (SEQ ID NO: 1763)

5'-GAAAAAAAUGGAAAAAAAUUACAAG-3' (SEQ ID NO: 5359)
3'-UUCUUUUUUUACCUUUUUUUAAUGUUC-5' (SEQ ID NO: 358)

KRAS-1480 Target: 5'-AAGAAAAAAATGGAAAAAAATTACAAG-3' (SEQ ID NO: 1764)

5'-AAAAUGGAAAAAAAUUACAAGGCAA-3' (SEQ ID NO: 5360)
3'-UUUUUUACCUUUUUUUAAUGUUCCGUU-5' (SEQ ID NO: 359)

KRAS-1484 Target: 5'-AAAAAATGGAAAAAAATTACAAGGCAA-3' (SEQ ID NO: 1765)

5'-AAAUGGAAAAAAAUUACAAGGCAAU-3' (SEQ ID NO: 5361)
3'-UUUUUACCUUUUUUUAAUGUUCCGUUA-5' (SEQ ID NO: 360)

KRAS-1485 Target: 5'-AAAAATGGAAAAAAATTACAAGGCAAT-3' (SEQ ID NO: 1766)

5'-GAAAAAAAUUACAAGGCAAUGGAAA-3' (SEQ ID NO: 5362)
3'-ACCUUUUUUUAAUGUUCCGUUACCUUU-5' (SEQ ID NO: 361)

KRAS-1490 Target: 5'-TGGAAAAAAATTACAAGGCAATGGAAA-3' (SEQ ID NO: 1767)

5'-AAAAAAAUUACAAGGCAAUGGAAAC-3' (SEQ ID NO: 5363)
3'-CCUUUUUUUAAUGUUCCGUUACCUUUG-5' (SEQ ID NO: 362)

KRAS-1491 Target: 5'-GGAAAAAAATTACAAGGCAATGGAAAC-3' (SEQ ID NO: 1768)

5'-AAAAAAUUACAAGGCAAUGGAAACU-3' (SEQ ID NO: 5364)
3'-CUUUUUUUAAUGUUCCGUUACCUUUGA-5' (SEQ ID NO: 363)

KRAS-1492 Target: 5'-GAAAAAAATTACAAGGCAATGGAAACT-3' (SEQ ID NO: 1769)

5'-CAUUUCCUUUUCACAUUAGAUAAAU-3' (SEQ ID NO: 5365)
3'-CGGUAAAGGAAAAGUGUAAUCUAUUUA-5' (SEQ ID NO: 364)

KRAS-1527 Target: 5'-GCCATTTCCTTTTCACATTAGATAAAT-3' (SEQ ID NO: 1770)

5'-CUUUUCACAUUAGAUAAAUUACUAU-3' (SEQ ID NO: 5366)
3'-AGGAAAAGUGUAAUCUAUUUAAUGAUA-5' (SEQ ID NO: 365)

KRAS-1533 Target: 5'-TCCTTTTCACATTAGATAAATTACTAT-3' (SEQ ID NO: 1771)

5'-CAUUAGAUAAAUUACUAUAAAGACU-3' (SEQ ID NO: 5367)
3'-GUGUAAUCUAUUUAAUGAUAUUUCUGA-5' (SEQ ID NO: 366)

KRAS-1540 Target: 5'-CACATTAGATAAATTACTATAAAGACT-3' (SEQ ID NO: 1772)

5'-AUUAGAUAAAUUACUAUAAAGACUC-3' (SEQ ID NO: 5368)
3'-UGUAAUCUAUUUAAUGAUAUUUCUGAG-5' (SEQ ID NO: 367)

KRAS-1541 Target: 5'-ACATTAGATAAATTACTATAAAGACTC-3' (SEQ ID NO: 1773)

5'-UUAGAUAAAUUACUAUAAAGACUCC-3' (SEQ ID NO: 5369)
3'-GUAAUCUAUUUAAUGAUAUUUCUGAGG-5' (SEQ ID NO: 368)

KRAS-1542 Target: 5'-CATTAGATAAATTACTATAAAGACTCC-3' (SEQ ID NO: 1774)

5'-UAUGAAAUGGGGAUUAUUAUAGCAA-3' (SEQ ID NO: 5370)
3'-UCAUACUUUACCCCUAAUAAUAUCGUU-5' (SEQ ID NO: 369)

KRAS-1597 Target: 5'-AGTATGAAATGGGGATTATTATAGCAA-3' (SEQ ID NO: 1775)

5'-GGGAUUAUUAUAGCAACCAUUUUGG-3' (SEQ ID NO: 5371)
3'-ACCCCUAAUAAUAUCGUUGGUAAAACC-5' (SEQ ID NO: 370)

KRAS-1606 Target: 5'-TGGGGATTATTATAGCAACCATTTTGG-3' (SEQ ID NO: 1776)

5'-CUAUAUUUACAUGCUACUAAAUUUU-3' (SEQ ID NO: 5372)
3'-CCGAUAUAAAUGUACGAUGAUUUAAAA-5' (SEQ ID NO: 371)

KRAS-1633 Target: 5'-GGCTATATTTACATGCTACTAAATTTT-3' (SEQ ID NO: 1777)

5'-UAUAUUUACAUGCUACUAAAUUUUU-3' (SEQ ID NO: 5373)
3'-CGAUAUAAAUGUACGAUGAUUUAAAAA-5' (SEQ ID NO: 372)

KRAS-1634 Target: 5'-GCTATATTTACATGCTACTAAATTTTT-3' (SEQ ID NO: 1778)

5'-AUAUUUACAUGCUACUAAAUUUUUA-3' (SEQ ID NO: 5374)
3'-GAUAUAAAUGUACGAUGAUUUAAAAAU-5' (SEQ ID NO: 373)

KRAS-1635 Target: 5'-CTATATTTACATGCTACTAAATTTTTA-3' (SEQ ID NO: 1779)

5'-UAUUUACAUGCUACUAAAUUUUUAU-3' (SEQ ID NO: 5375)
3'-AUAUAAAUGUACGAUGAUUUAAAAAUA-5' (SEQ ID NO: 374)

KRAS-1636 Target: 5'-TATATTTACATGCTACTAAATTTTTAT-3' (SEQ ID NO: 1780)

5'-AUUUACAUGCUACUAAAUUUUUAUA-3' (SEQ ID NO: 5376)
3'-UAUAAAUGUACGAUGAUUUAAAAAUAU-5' (SEQ ID NO: 375)

KRAS-1637 Target: 5'-ATATTTACATGCTACTAAATTTTTATA-3' (SEQ ID NO: 1781)

5'-CAUGCUACUAAAUUUUUAUAAUAAU-3' (SEQ ID NO: 5377)
3'-AUGUACGAUGAUUUAAAAAUAUUAUUA-5' (SEQ ID NO: 376)

KRAS-1642 Target: 5'-TACATGCTACTAAATTTTTATAATAAT-3' (SEQ ID NO: 1782)

5'-CUAAAUUUUUAUAAUAAUUGAAAAG-3' (SEQ ID NO: 5378)
3'-AUGAUUUAAAAAUAUUAUUAACUUUUC-5' (SEQ ID NO: 377)

KRAS-1649 Target: 5'-TACTAAATTTTTATAATAATTGAAAAG-3' (SEQ ID NO: 1783)

5'-UAAAUUUUUAUAAUAAUUGAAAAGA-3' (SEQ ID NO: 5379)
3'-UGAUUUAAAAAUAUUAUUAACUUUUCU-5' (SEQ ID NO: 378)

KRAS-1650 Target: 5'-ACTAAATTTTTATAATAATTGAAAAGA-3' (SEQ ID NO: 1784)

5'-AAUUUUUAUAAUAAUUGAAAAGAUU-3' (SEQ ID NO: 5380)
3'-AUUUAAAAAUAUUAUUAACUUUUCUAA-5' (SEQ ID NO: 379)

KRAS-1652 Target: 5'-TAAATTTTTATAATAATTGAAAAGATT-3' (SEQ ID NO: 1785)

5'-AUUUUUAUAAUAAUUGAAAAGAUUU-3' (SEQ ID NO: 5381)
3'-UUUAAAAAUAUUAUUAACUUUUCUAAA-5' (SEQ ID NO: 380)

KRAS-1653 Target: 5'-AAATTTTTATAATAATTGAAAAGATTT-3' (SEQ ID NO: 1786)

5'-UUUUUAUAAUAAUUGAAAAGAUUUU-3' (SEQ ID NO: 5382)
3'-UUAAAAAUAUUAUUAACUUUUCUAAAA-5' (SEQ ID NO: 381)

KRAS-1654 Target: 5'-AATTTTTATAATAATTGAAAAGATTTT-3' (SEQ ID NO: 1787)

5'-UUUUAUAAUAAUUGAAAAGAUUUUA-3' (SEQ ID NO: 5383)
3'-UAAAAAUAUUAUUAACUUUUCUAAAAU-5' (SEQ ID NO: 382)

KRAS-1655 Target: 5'-ATTTTTATAATAATTGAAAAGATTTTA-3' (SEQ ID NO: 1788)

5'-UUUAUAAUAAUUGAAAAGAUUUUAA-3' (SEQ ID NO: 5384)
3'-AAAAAUAUUAUUAACUUUUCUAAAAUU-5' (SEQ ID NO: 383)

KRAS-1656 Target: 5'-TTTTTATAATAATTGAAAAGATTTTAA-3' (SEQ ID NO: 1789)

5'-UUAUAAUAAUUGAAAAGAUUUUAAC-3' (SEQ ID NO: 5385)
3'-AAAAUAUUAUUAACUUUUCUAAAAUUG-5' (SEQ ID NO: 384)

KRAS-1657 Target: 5'-TTTTATAATAATTGAAAAGATTTTAAC-3' (SEQ ID NO: 1790)

5'-UAUAAUAAUUGAAAAGAUUUUAACA-3' (SEQ ID NO: 5386)
3'-AAAUAUUAUUAACUUUUCUAAAAUUGU-5' (SEQ ID NO: 385)

KRAS-1658 Target: 5'-TTTATAATAATTGAAAAGATTTTAACA-3' (SEQ ID NO: 1791)

5'-AUAAUAAUUGAAAAGAUUUUAACAA-3' (SEQ ID NO: 5387)
3'-AAUAUUAUUAACUUUUCUAAAAUUGUU-5' (SEQ ID NO: 386)

KRAS-1659 Target: 5'-TTATAATAATTGAAAAGATTTTAACAA-3' (SEQ ID NO: 1792)

5'-UAAUAAUUGAAAAGAUUUUAACAAG-3' (SEQ ID NO: 5388)
3'-AUAUUAUUAACUUUUCUAAAAUUGUUC-5' (SEQ ID NO: 387)

KRAS-1660 Target: 5'-TATAATAATTGAAAAGATTTTAACAAG-3' (SEQ ID NO: 1793)

5'-AAUUGAAAAGAUUUUAACAAGUAUA-3' (SEQ ID NO: 5389)
3'-UAUUAACUUUUCUAAAAUUGUUCAUAU-5' (SEQ ID NO: 388)

KRAS-1664 Target: 5'-ATAATTGAAAAGATTTTAACAAGTATA-3' (SEQ ID NO: 1794)

5'-AUUGAAAAGAUUUUAACAAGUAUAA-3' (SEQ ID NO: 5390)
3'-AUUAACUUUUCUAAAAUUGUUCAUAUU-5' (SEQ ID NO: 389)

KRAS-1665 Target: 5'-TAATTGAAAAGATTTTAACAAGTATAA-3' (SEQ ID NO: 1795)

5'-UGAAAAGAUUUUAACAAGUAUAAAA-3' (SEQ ID NO: 5391)
3'-UAACUUUUCUAAAAUUGUUCAUAUUUU-5' (SEQ ID NO: 390)

KRAS-1667 Target: 5'-ATTGAAAAGATTTTAACAAGTATAAAA-3' (SEQ ID NO: 1796)

5'-GAAAAGAUUUUAACAAGUAUAAAAA-3' (SEQ ID NO: 5392)
3'-AACUUUUCUAAAAUUGUUCAUAUUUUU-5' (SEQ ID NO: 391)

KRAS-1668 Target: 5'-TTGAAAAGATTTTAACAAGTATAAAAA-3' (SEQ ID NO: 1797)

5'-AAAAGAUUUUAACAAGUAUAAAAAA-3' (SEQ ID NO: 5393)
3'-ACUUUUCUAAAAUUGUUCAUAUUUUUU-5' (SEQ ID NO: 392)

KRAS-1669 Target: 5'-TGAAAAGATTTTAACAAGTATAAAAAA-3' (SEQ ID NO: 1798)

5'-AAAGAUUUUAACAAGUAUAAAAAAU-3' (SEQ ID NO: 5394)
3'-CUUUUCUAAAAUUGUUCAUAUUUUUUA-5' (SEQ ID NO: 393)

KRAS-1670 Target: 5'-GAAAAGATTTTAACAAGTATAAAAAAT-3' (SEQ ID NO: 1799)

5'-AAGAUUUUAACAAGUAUAAAAAAUU-3' (SEQ ID NO: 5395)
3'-UUUUCUAAAAUUGUUCAUAUUUUUUAA-5' (SEQ ID NO: 394)

KRAS-1671 Target: 5'-AAAAGATTTTAACAAGTATAAAAAATT-3' (SEQ ID NO: 1800)

5'-AGAUUUUAACAAGUAUAAAAAAUUC-3' (SEQ ID NO: 5396)
3'-UUUCUAAAAUUGUUCAUAUUUUUUAAG-5' (SEQ ID NO: 395)

KRAS-1672 Target: 5'-AAAGATTTTAACAAGTATAAAAAATTC-3' (SEQ ID NO: 1801)

5'-GAUUUUAACAAGUAUAAAAAAUUCU-3' (SEQ ID NO: 5397)
3'-UUCUAAAAUUGUUCAUAUUUUUUAAGA-5' (SEQ ID NO: 396)

KRAS-1673 Target: 5'-AAGATTTTAACAAGTATAAAAAATTCT-3' (SEQ ID NO: 1802)

5'-AUUUUAACAAGUAUAAAAAAUUCUC-3' (SEQ ID NO: 5398)
3'-UCUAAAAUUGUUCAUAUUUUUUAAGAG-5' (SEQ ID NO: 397)

KRAS-1674 Target: 5'-AGATTTTAACAAGTATAAAAAATTCTC-3' (SEQ ID NO: 1803)

5'-UUUUAACAAGUAUAAAAAAUUCUCA-3' (SEQ ID NO: 5399)
3'-CUAAAAUUGUUCAUAUUUUUUAAGAGU-5' (SEQ ID NO: 398)

KRAS-1675 Target: 5'-GATTTTAACAAGTATAAAAAATTCTCA-3' (SEQ ID NO: 1804)

5'-AAGUAUAAAAAAUUCUCAUAGGAAU-3' (SEQ ID NO: 5400)
3'-UGUUCAUAUUUUUUAAGAGUAUCCUUA-5' (SEQ ID NO: 399)

KRAS-1682 Target: 5'-ACAAGTATAAAAAATTCTCATAGGAAT-3' (SEQ ID NO: 1805)

5'-AGUAUAAAAAAUUCUCAUAGGAAUU-3' (SEQ ID NO: 5401)
3'-GUUCAUAUUUUUUAAGAGUAUCCUUAA-5' (SEQ ID NO: 400)

KRAS-1683 Target: 5'-CAAGTATAAAAAATTCTCATAGGAATT-3' (SEQ ID NO: 1806)

5'-GUAUAAAAAAUUCUCAUAGGAAUUA-3' (SEQ ID NO: 5402)
3'-UUCAUAUUUUUUAAGAGUAUCCUUAAU-5' (SEQ ID NO: 401)

KRAS-1684 Target: 5'-AAGTATAAAAAATTCTCATAGGAATTA-3' (SEQ ID NO: 1807)

5'-UAUAAAAAAUUCUCAUAGGAAUUAA-3' (SEQ ID NO: 5403)
3'-UCAUAUUUUUUAAGAGUAUCCUUAAUU-5' (SEQ ID NO: 402)

KRAS-1685 Target: 5'-AGTATAAAAAATTCTCATAGGAATTAA-3' (SEQ ID NO: 1808)

5'-AUAAAAAAUUCUCAUAGGAAUUAAA-3' (SEQ ID NO: 5404)
3'-CAUAUUUUUUAAGAGUAUCCUUAAUUU-5' (SEQ ID NO: 403)

KRAS-1686 Target: 5'-GTATAAAAAATTCTCATAGGAATTAAA-3' (SEQ ID NO: 1809)

5'-UAAAAAAUUCUCAUAGGAAUUAAAU-3' (SEQ ID NO: 5405)
3'-AUAUUUUUUAAGAGUAUCCUUAAUUUA-5' (SEQ ID NO: 404)

KRAS-1687 Target: 5'-TATAAAAAATTCTCATAGGAATTAAAT-3' (SEQ ID NO: 1810)

5'-AAAAAAUUCUCAUAGGAAUUAAAUG-3' (SEQ ID NO: 5406)
3'-UAUUUUUUAAGAGUAUCCUUAAUUUAC-5' (SEQ ID NO: 405)

KRAS-1688 Target: 5'-ATAAAAAATTCTCATAGGAATTAAATG-3' (SEQ ID NO: 1811)

5'-AAAAAUUCUCAUAGGAAUUAAAUGU-3' (SEQ ID NO: 5407)
3'-AUUUUUUAAGAGUAUCCUUAAUUUACA-5' (SEQ ID NO: 406)

KRAS-1689 Target: 5'-TAAAAAATTCTCATAGGAATTAAATGT-3' (SEQ ID NO: 1812)

5'-AAAUUCUCAUAGGAAUUAAAUGUAG-3' (SEQ ID NO: 5408)
3'-UUUUUAAGAGUAUCCUUAAUUUACAUC-5' (SEQ ID NO: 407)

KRAS-1691 Target: 5'-AAAAATTCTCATAGGAATTAAATGTAG-3' (SEQ ID NO: 1813)

5'-AAUUCUCAUAGGAAUUAAAUGUAGU-3' (SEQ ID NO: 5409)
3'-UUUUAAGAGUAUCCUUAAUUUACAUCA-5' (SEQ ID NO: 408)

KRAS-1692 Target: 5'-AAAATTCTCATAGGAATTAAATGTAGT-3' (SEQ ID NO: 1814)

5'-CUUUCAUAGUAUAACUUUAAAUCUU-3' (SEQ ID NO: 5410)
3'-GAGAAAGUAUCAUAUUGAAAUUUAGAA-5' (SEQ ID NO: 409)

KRAS-1736 Target: 5'-CTCTTTCATAGTATAACTTTAAATCTT-3' (SEQ ID NO: 1815)

5'-AUAGUAUAACUUUAAAUCUUUUCUU-3' (SEQ ID NO: 5411)
3'-AGUAUCAUAUUGAAAUUUAGAAAAGAA-5' (SEQ ID NO: 410)

KRAS-1741 Target: 5'-TCATAGTATAACTTTAAATCTTTTCTT-3' (SEQ ID NO: 1816)

5'-UAGUAUAACUUUAAAUCUUUUCUUC-3' (SEQ ID NO: 5412)
3'-GUAUCAUAUUGAAAUUUAGAAAAGAAG-5' (SEQ ID NO: 411)

KRAS-1742 Target: 5'-CATAGTATAACTTTAAATCTTTTCTTC-3' (SEQ ID NO: 1817)

5'-UAAAUCUUUUCUUCAACUUGAGUCU-3' (SEQ ID NO: 5413)
3'-AAAUUUAGAAAAGAAGUUGAACUCAGA-5' (SEQ ID NO: 412)

KRAS-1753 Target: 5'-TTTAAATCTTTTCTTCAACTTGAGTCT-3' (SEQ ID NO: 1818)

5'-AAAUCUUUUCUUCAACUUGAGUCUU-3' (SEQ ID NO: 5414)
3'-AAUUUAGAAAAGAAGUUGAACUCAGAA-5' (SEQ ID NO: 413)

KRAS-1754 Target: 5'-TTAAATCTTTTCTTCAACTTGAGTCTT-3' (SEQ ID NO: 1819)

5'-CUUGAGUCUUUGAAGAUAGUUUUAA-3' (SEQ ID NO: 5415)
3'-UUGAACUCAGAAACUUCUAUCAAAAUU-5' (SEQ ID NO: 414)

KRAS-1769 Target: 5'-AACTTGAGTCTTTGAAGATAGTTTTAA-3' (SEQ ID NO: 1820)

5'-UGAGUCUUUGAAGAUAGUUUUAAUU-3' (SEQ ID NO: 5416)
3'-GAACUCAGAAACUUCUAUCAAAAUUAA-5' (SEQ ID NO: 415)

KRAS-1771 Target: 5'-CTTGAGTCTTTGAAGATAGTTTTAATT-3' (SEQ ID NO: 1821)

5'-GAGUCUUUGAAGAUAGUUUUAAUUC-3' (SEQ ID NO: 5417)
3'-AACUCAGAAACUUCUAUCAAAAUUAAG-5' (SEQ ID NO: 416)

KRAS-1772 Target: 5'-TTGAGTCTTTGAAGATAGTTTTAATTC-3' (SEQ ID NO: 1822)

5'-GAUAGUUUUAAUUCUGCUUGUGACA-3' (SEQ ID NO: 5418)
3'-UUCUAUCAAAAUUAAGACGAACACUGU-5' (SEQ ID NO: 417)

KRAS-1783 Target: 5'-AAGATAGTTTTAATTCTGCTTGTGACA-3' (SEQ ID NO: 1823)

5'-AUAGUUUUAAUUCUGCUUGUGACAU-3' (SEQ ID NO: 5419)
3'-UCUAUCAAAAUUAAGACGAACACUGUA-5' (SEQ ID NO: 418)

KRAS-1784 Target: 5'-AGATAGTTTTAATTCTGCTTGTGACAT-3' (SEQ ID NO: 1824)

5'-UAGUUUUAAUUCUGCUUGUGACAUU-3' (SEQ ID NO: 5420)
3'-CUAUCAAAAUUAAGACGAACACUGUAA-5' (SEQ ID NO: 419)

KRAS-1785 Target: 5'-GATAGTTTTAATTCTGCTTGTGACATT-3' (SEQ ID NO: 1825)

5'-CUUGUGACAUUAAAAGAUUAUUUGG-3' (SEQ ID NO: 5421)
3'-ACGAACACUGUAAUUUUCUAAUAAACC-5' (SEQ ID NO: 420)

KRAS-1799 Target: 5'-TGCTTGTGACATTAAAAGATTATTTGG-3' (SEQ ID NO: 1826)

5'-CAUUGCUUUUGUUUCUUAAGAAAAC-3' (SEQ ID NO: 5422)
3'-UCGUAACGAAAACAAAGAAUUCUUUUG-5' (SEQ ID NO: 421)

KRAS-2047 Target: 5'-AGCATTGCTTTTGTTTCTTAAGAAAAC-3' (SEQ ID NO: 1827)

5'-AUUGCUUUUGUUUCUUAAGAAAACA-3' (SEQ ID NO: 5423)
3'-CGUAACGAAAACAAAGAAUUCUUUUGU-5' (SEQ ID NO: 422)

KRAS-2048 Target: 5'-GCATTGCTTTTGTTTCTTAAGAAAACA-3' (SEQ ID NO: 1828)

5'-UUUGUUUCUUAAGAAAACAAACUCU-3' (SEQ ID NO: 5424)
3'-GAAAACAAAGAAUUCUUUUGUUUGAGA-5' (SEQ ID NO: 423)

KRAS-2054 Target: 5'-CTTTTGTTTCTTAAGAAAACAAACTCT-3' (SEQ ID NO: 1829)

5'-CUUAAGAAAACAAACUCUUUUUUAA-3' (SEQ ID NO: 5425)
3'-AAGAAUUCUUUUGUUUGAGAAAAAAUU-5' (SEQ ID NO: 424)

KRAS-2061 Target: 5'-TTCTTAAGAAAACAAACTCTTTTTTAA-3' (SEQ ID NO: 1830)

5'-UUAAGAAAACAAACUCUUUUUUUAAA-3' (SEQ ID NO: 5426)
3'-AGAAUUCUUUUGUUUGAGAAAAAAUUU-5' (SEQ ID NO: 425)

KRAS-2062 Target: 5'-TCTTAAGAAAACAAACTCTTTTTTAAA-3' (SEQ ID NO: 1831)

5'-UAAGAAAACAAACUCUUUUUUUAAAA-3' (SEQ ID NO: 5427)
3'-GAAUUCUUUUGUUUGAGAAAAAAUUUU-5' (SEQ ID NO: 426)

KRAS-2063 Target: 5'-CTTAAGAAAACAAACTCTTTTTTAAAA-3' (SEQ ID NO: 1832)

5'-AAGAAAACAAACUCUUUUUUUAAAAA-3' (SEQ ID NO: 5428)
3'-AAUUCUUUUGUUUGAGAAAAAAUUUUU-5' (SEQ ID NO: 427)

KRAS-2064 Target: 5'-TTAAGAAAACAAACTCTTTTTTAAAAA-3' (SEQ ID NO: 1833)

5'-AGAAAACAAACUCUUUUUUUAAAAAU-3' (SEQ ID NO: 5429)
3'-AUUCUUUUGUUUGAGAAAAAAUUUUUA-5' (SEQ ID NO: 428)

KRAS-2065 Target: 5'-TAAGAAAACAAACTCTTTTTTAAAAAT-3' (SEQ ID NO: 1834)

5'-GAAAACAAACUCUUUUUUUAAAAAUU-3' (SEQ ID NO: 5430)
3'-UUCUUUUGUUUGAGAAAAAAUUUUUAA-5' (SEQ ID NO: 429)

KRAS-2066 Target: 5'-AAGAAAACAAACTCTTTTTTAAAAATT-3' (SEQ ID NO: 1835)

5'-AAAACAAACUCUUUUUUUAAAAAUUA-3' (SEQ ID NO: 5431)
3'-UCUUUUGUUUGAGAAAAAAUUUUUAAU-5' (SEQ ID NO: 430)

KRAS-2067 Target: 5'-AGAAAACAAACTCTTTTTTAAAAATTA-3' (SEQ ID NO: 1836)

5'-CAAACUCUUUUUUAAAAAUUACUUU-3' (SEQ ID NO: 5432)
3'-UUGUUUGAGAAAAAAUUUUUAAUGAAA-5' (SEQ ID NO: 431)

KRAS-2071 Target: 5'-AACAAACTCTTTTTTAAAAATTACTTT-3' (SEQ ID NO: 1837)

5'-CUUUUUUAAAAAUUACUUUUAAAUA-3' (SEQ ID NO: 5433)
3'-GAGAAAAAAUUUUUAAUGAAAAUUUAU-5' (SEQ ID NO: 432)

KRAS-2077 Target: 5'-CTCTTTTTTAAAAATTACTTTTAAATA-3' (SEQ ID NO: 1838)

5'-UUUUUUAAAAAUUACUUUUAAAUAU-3' (SEQ ID NO: 5434)
3'-AGAAAAAAUUUUUAAUGAAAAUUUAUA-5' (SEQ ID NO: 433)

KRAS-2078 Target: 5'-TCTTTTTTAAAAATTACTTTTAAATAT-3' (SEQ ID NO: 1839)

5'-UUUUUAAAAAUUACUUUUAAAUAUU-3' (SEQ ID NO: 5435)
3'-GAAAAAAUUUUUAAUGAAAAUUUAUAA-5' (SEQ ID NO: 434)

KRAS-2079 Target: 5'-CTTTTTTAAAAATTACTTTTAAATATT-3' (SEQ ID NO: 1840)

5'-UUUUAAAAAUUACUUUUAAAUAUUA-3' (SEQ ID NO: 5436)
3'-AAAAAAUUUUUAAUGAAAAUUUAUAAU-5' (SEQ ID NO: 435)

KRAS-2080 Target: 5'-TTTTTTAAAAATTACTTTTAAATATTA-3' (SEQ ID NO: 1841)

5'-UUUAAAAAUUACUUUUAAAUAUUAA-3' (SEQ ID NO: 5437)
3'-AAAAAUUUUUAAUGAAAAUUUAUAAUU-5' (SEQ ID NO: 436)

KRAS-2081 Target: 5'-TTTTTAAAAATTACTTTTAAATATTAA-3' (SEQ ID NO: 1842)

5'-UUAAAAAUUACUUUUAAAUAUUAAC-3' (SEQ ID NO: 5438)
3'-AAAAUUUUUAAUGAAAAUUUAUAAUUG-5' (SEQ ID NO: 437)

KRAS-2082 Target: 5'-TTTTAAAAATTACTTTTAAATATTAAC-3' (SEQ ID NO: 1843)

5'-UAAAAAUUACUUUUAAAUAUUAACU-3' (SEQ ID NO: 5439)
3'-AAAUUUUUAAUGAAAAUUUAUAAUUGA-5' (SEQ ID NO: 438)

KRAS-2083 Target: 5'-TTTAAAAATTACTTTTAAATATTAACT-3' (SEQ ID NO: 1844)

5'-AAAAAUUACUUUUAAAUAUUAACUC-3' (SEQ ID NO: 5440)
3'-AAUUUUUAAUGAAAAUUUAUAAUUGAG-5' (SEQ ID NO: 439)

KRAS-2084 Target: 5'-TTAAAAATTACTTTTAAATATTAACTC-3' (SEQ ID NO: 1845)

5'-AAAAUUACUUUUAAAUAUUAACUCA-3' (SEQ ID NO: 5441)
3'-AUUUUUAAUGAAAAUUUAUAAUUGAGU-5' (SEQ ID NO: 440)

KRAS-2085 Target: 5'-TAAAAATTACTTTTAAATATTAACTCA-3' (SEQ ID NO: 1846)

5'-CUUUUAAAUAUUAACUCAAAAGUUG-3' (SEQ ID NO: 5442)
3'-AUGAAAAUUUAUAAUUGAGUUUUCAAC-5' (SEQ ID NO: 441)

KRAS-2092 Target: 5'-TACTTTTAAATATTAACTCAAAAGTTG-3' (SEQ ID NO: 1847)

5'-UUUUAAAUAUUAACUCAAAAGUUGA-3' (SEQ ID NO: 5443)
3'-UGAAAAUUUAUAAUUGAGUUUUCAACU-5' (SEQ ID NO: 442)

KRAS-2093 Target: 5'-ACTTTTAAATATTAACTCAAAAGTTGA-3' (SEQ ID NO: 1848)

5'-UUAAAUAUUAACUCAAAAGUUGAGA-3' (SEQ ID NO: 5444)
3'-AAAAUUUAUAAUUGAGUUUUCAACUCU-5' (SEQ ID NO: 443)

KRAS-2095 Target: 5'-TTTTAAATATTAACTCAAAAGTTGAGA-3' (SEQ ID NO: 1849)

5'-AAAUAUUAACUCAAAAGUUGAGAUU-3' (SEQ ID NO: 5445)
3'-AAUUUAUAAUUGAGUUUUCAACUCUAA-5' (SEQ ID NO: 444)

KRAS-2097 Target: 5'-TTAAATATTAACTCAAAAGTTGAGATT-3' (SEQ ID NO: 1850)

5'-AAUAUUAACUCAAAAGUUGAGAUUU-3' (SEQ ID NO: 5446)
3'-AUUUAUAAUUGAGUUUUCAACUCUAAA-5' (SEQ ID NO: 445)

KRAS-2098 Target: 5'-TAAATATTAACTCAAAAGTTGAGATTT-3' (SEQ ID NO: 1851)

5'-AUAUUAACUCAAAAGUUGAGAUUUU-3' (SEQ ID NO: 5447)
3'-UUUAUAAUUGAGUUUUCAACUCUAAAA-5' (SEQ ID NO: 446)

KRAS-2099 Target: 5'-AAATATTAACTCAAAAGTTGAGATTTT-3' (SEQ ID NO: 1852)

5'-UAUUAACUCAAAAGUUGAGAUUUUG-3' (SEQ ID NO: 5448)
3'-UUAUAAUUGAGUUUUCAACUCUAAAAC-5' (SEQ ID NO: 447)

KRAS-2100 Target: 5'-AATATTAACTCAAAAGTTGAGATTTTG-3' (SEQ ID NO: 1853)

5'-UGUGCCAAGACAUUAAUUUUUUUUU-3' (SEQ ID NO: 5449)
3'-CCACACGGUUCUGUAAUUAAAAAAAAA-5' (SEQ ID NO: 448)

KRAS-2134 Target: 5'-GGTGTGCCAAGACATTAATTTTTTTTT-3' (SEQ ID NO: 1854)

5'-CAAGACAUUAAUUUUUUUUUUAAAC-3' (SEQ ID NO: 5450)
3'-CGGUUCUGUAAUUAAAAAAAAAAUUUG-5' (SEQ ID NO: 449)

KRAS-2139 Target: 5'-GCCAAGACATTAATTTTTTTTTTAAAC-3' (SEQ ID NO: 1855)

5'-AAGACAUUAAUUUUUUUUUUAAACA-3' (SEQ ID NO: 5451)
3'-GGUUCUGUAAUUAAAAAAAAAAUUUGU-5' (SEQ ID NO: 450)

KRAS-2140 Target: 5'-CCAAGACATTAATTTTTTTTTTAAACA-3' (SEQ ID NO: 1856)

5'-UUAAUUUUUUUUUUAAACAAUGAAG-3' (SEQ ID NO: 5452)
3'-GUAAUUAAAAAAAAAAUUUGUUACUUC-5' (SEQ ID NO: 451)

KRAS-2146 Target: 5'-CATTAATTTTTTTTTTAAACAATGAAG-3' (SEQ ID NO: 1857)

5'-UAAUUUUUUUUUUAAACAAUGAAGU-3' (SEQ ID NO: 5453)
3'-UAAUUAAAAAAAAAAUUUGUUACUUCA-5' (SEQ ID NO: 452)

KRAS-2147 Target: 5'-ATTAATTTTTTTTTTAAACAATGAAGT-3' (SEQ ID NO: 1858)

5'-AUUUUUUUUUUAAACAAUGAAGUGA-3' (SEQ ID NO: 5454)
3'-AUUAAAAAAAAAAUUUGUUACUUCACU-5' (SEQ ID NO: 453)

KRAS-2149 Target: 5'-TAATTTTTTTTTTAAACAATGAAGTGA-3' (SEQ ID NO: 1859)

5'-UUUUUUUUUAAACAAUGAAGUGAAA-3' (SEQ ID NO: 5455)
3'-UAAAAAAAAAAUUUGUUACUUCACUUU-5' (SEQ ID NO: 454)

KRAS-2151 Target: 5'-ATTTTTTTTTTAAACAATGAAGTGAAA-3' (SEQ ID NO: 1860)

5'-UUUUUUUUAAACAAUGAAGUGAAAA-3' (SEQ ID NO: 5456)
3'-AAAAAAAAAAUUUGUUACUUCACUUUU-5' (SEQ ID NO: 455)

KRAS-2152 Target: 5'-TTTTTTTTTTAAACAATGAAGTGAAAA-3' (SEQ ID NO: 1861)

5'-UUUUUUUAAACAAUGAAGUGAAAAA-3' (SEQ ID NO: 5457)
3'-AAAAAAAAAUUUGUUACUUCACUUUUU-5' (SEQ ID NO: 456)

KRAS-2153 Target: 5'-TTTTTTTTTAAACAATGAAGTGAAAAA-3' (SEQ ID NO: 1862)

5'-UUUUUUAAACAAUGAAGUGAAAAAG-3' (SEQ ID NO: 5458)
3'-AAAAAAAAUUUGUUACUUCACUUUUUC-5' (SEQ ID NO: 457)

KRAS-2154 Target: 5'-TTTTTTTTAAACAATGAAGTGAAAAAG-3' (SEQ ID NO: 1863)

5'-UUUUUAAACAAUGAAGUGAAAAAGU-3' (SEQ ID NO: 5459)
3'-AAAAAAAUUUGUUACUUCACUUUUUCA-5' (SEQ ID NO: 458)

KRAS-2155 Target: 5'-TTTTTTTAAACAATGAAGTGAAAAAGT-3' (SEQ ID NO: 1864)

5'-UUUAAACAAUGAAGUGAAAAAGUUU-3' (SEQ ID NO: 5460)
3'-AAAAAUUUGUUACUUCACUUUUUCAAA-5' (SEQ ID NO: 459)

KRAS-2157 Target: 5'-TTTTTAAACAATGAAGTGAAAAAGTTT-3' (SEQ ID NO: 1865)

5'-UUAAACAAUGAAGUGAAAAAGUUUU-3' (SEQ ID NO: 5461)
3'-AAAAUUUGUUACUUCACUUUUUCAAAA-5' (SEQ ID NO: 460)

KRAS-2158 Target: 5'-TTTTAAACAATGAAGTGAAAAAGTTTT-3' (SEQ ID NO: 1866)

5'-UAAACAAUGAAGUGAAAAAGUUUUA-3' (SEQ ID NO: 5462)
3'-AAAUUUGUUACUUCACUUUUUCAAAAU-5' (SEQ ID NO: 461)

KRAS-2159 Target: 5'-TTTAAACAATGAAGTGAAAAAGTTTTA-3' (SEQ ID NO: 1867)

5'-GAAGUGAAAAAGUUUUACAAUCUCU-3' (SEQ ID NO: 5463)
3'-UACUUCACUUUUUCAAAAUGUUAGAGA-5' (SEQ ID NO: 462)

KRAS-2167 Target: 5'-ATGAAGTGAAAAAGTTTTACAATCTCT-3' (SEQ ID NO: 1868)

5'-AAAAAGUUUUACAAUCUCUAGGUUU-3' (SEQ ID NO: 5464)
3'-ACUUUUUCAAAAUGUUAGAGAUCCAAA-5' (SEQ ID NO: 463)

KRAS-2173 Target: 5'-TGAAAAAGTTTTACAATCTCTAGGTTT-3' (SEQ ID NO: 1869)

5'-AAAAGUUUUACAAUCUCUAGGUUUG-3' (SEQ ID NO: 5465)
3'-CUUUUUCAAAAUGUUAGAGAUCCAAAC-5' (SEQ ID NO: 464)

KRAS-2174 Target: 5'-GAAAAAGTTTTACAATCTCTAGGTTTG-3' (SEQ ID NO: 1870)

5'-AAAGUUUUACAAUCUCUAGGUUUGG-3' (SEQ ID NO: 5466)
3'-UUUUUCAAAAUGUUAGAGAUCCAAACC-5' (SEQ ID NO: 465)

KRAS-2175 Target: 5'-AAAAAGTTTTACAATCTCTAGGTTTGG-3' (SEQ ID NO: 1871)

5'-UGGUUAAAUUAACAUUGCAUAAACA-3' (SEQ ID NO: 5467)
3'-UGACCAAUUUAAUUGUAACGUAUUUGU-5' (SEQ ID NO: 466)

KRAS-2216 Target: 5'-ACTGGTTAAATTAACATTGCATAAACA-3' (SEQ ID NO: 1872)

5'-GGUUAAAUUAACAUUGCAUAAACAC-3' (SEQ ID NO: 5468)
3'-GACCAAUUUAAUUGUAACGUAUUUGUG-5' (SEQ ID NO: 467)

KRAS-2217 Target: 5'-CTGGTTAAATTAACATTGCATAAACAC-3' (SEQ ID NO: 1873)

5'-GUUAAAUUAACAUUGCAUAAACACU-3' (SEQ ID NO: 5469)
3'-ACCAAUUUAAUUGUAACGUAUUUGUGA-5' (SEQ ID NO: 468)

KRAS-2218 Target: 5'-TGGTTAAATTAACATTGCATAAACACT-3' (SEQ ID NO: 1874)

5'-AUUGCAUAAACACUUUUCAAGUCUG-3' (SEQ ID NO: 5470)
3'-UGUAACGUAUUUGUGAAAAGUUCAGAC-5' (SEQ ID NO: 469)

KRAS-2229 Target: 5'-ACATTGCATAAACACTTTTCAAGTCTG-3' (SEQ ID NO: 1875)

5'-AAGUCUGAUCCAUAUUUAAUAAUGC-3' (SEQ ID NO: 5471)
3'-AGUUCAGACUAGGUAUAAAUUAUUACG-5' (SEQ ID NO: 470)

KRAS-2247 Target: 5'-TCAAGTCTGATCCATATTTAATAATGC-3' (SEQ ID NO: 1876)

5'-CAUAUUUAAUAAUGCUUUAAAAUAA-3' (SEQ ID NO: 5472)
3'-AGGUAUAAAUUAUUACGAAAUUUUAUU-5' (SEQ ID NO: 471)

KRAS-2257 Target: 5'-TCCATATTTAATAATGCTTTAAAATAA-3' (SEQ ID NO: 1877)

5'-AUAUUUAAUAAUGCUUUAAAAUAAA-3' (SEQ ID NO: 5473)
3'-GGUAUAAAUUAUUACGAAAUUUUAUUU-5' (SEQ ID NO: 472)

KRAS-2258 Target: 5'-CCATATTTAATAATGCTTTAAAATAAA-3' (SEQ ID NO: 1878)

5'-UAUUUAAUAAUGCUUUAAAAUAAAA-3' (SEQ ID NO: 5474)
3'-GUAUAAAUUAUUACGAAAUUUUAUUUU-5' (SEQ ID NO: 473)

KRAS-2259 Target: 5'-CATATTTAATAATGCTTTAAAATAAAA-3' (SEQ ID NO: 1879)

5'-AUUUAAUAAUGCUUUAAAAUAAAAA-3' (SEQ ID NO: 5475)
3'-UAUAAAUUAUUACGAAAUUUUAUUUUU-5' (SEQ ID NO: 474)

KRAS-2260 Target: 5'-ATATTTAATAATGCTTTAAAATAAAAA-3' (SEQ ID NO: 1880)

5'-UUUAAUAAUGCUUUAAAAUAAAAAU-3' (SEQ ID NO: 5476)
3'-AUAAAUUAUUACGAAAUUUUAUUUUUA-5' (SEQ ID NO: 475)

KRAS-2261 Target: 5'-TATTTAATAATGCTTTAAAATAAAAAT-3' (SEQ ID NO: 1881)

5'-UUAAUAAUGCUUUAAAAUAAAAAUA-3' (SEQ ID NO: 5477)
3'-UAAAUUAUUACGAAAUUUUAUUUUUAU-5' (SEQ ID NO: 476)

KRAS-2262 Target: 5'-ATTTAATAATGCTTTAAAATAAAAATA-3' (SEQ ID NO: 1882)

5'-AAUAAUGCUUUAAAAUAAAAAUAAA-3' (SEQ ID NO: 5478)
3'-AAUUAUUACGAAAUUUUAUUUUUAUUU-5' (SEQ ID NO: 477)

KRAS-2264 Target: 5'-TTAATAATGCTTTAAAATAAAAATAAA-3' (SEQ ID NO: 1883)

5'-AUAAUGCUUUAAAAUAAAAAUAAAA-3' (SEQ ID NO: 5479)
3'-AUUAUUACGAAAUUUUAUUUUUAUUUU-5' (SEQ ID NO: 478)

KRAS-2265 Target: 5'-TAATAATGCTTTAAAATAAAAATAAAA-3' (SEQ ID NO: 1884)

5'-UAAUGCUUUAAAAUAAAAAUAAAAA-3' (SEQ ID NO: 5480)
3'-UUAUUACGAAAUUUUAUUUUUAUUUUU-5' (SEQ ID NO: 479)

KRAS-2266 Target: 5'-AATAATGCTTTAAAATAAAAATAAAAA-3' (SEQ ID NO: 1885)

5'-AAUGCUUUAAAAUAAAAAUAAAAAC-3' (SEQ ID NO: 5481)
3'-UAUUACGAAAUUUUAUUUUUAUUUUUG-5' (SEQ ID NO: 480)

KRAS-2267 Target: 5'-ATAATGCTTTAAAATAAAAATAAAAAC-3' (SEQ ID NO: 1886)

5'-UAAAAUAAAAAUAAAAACAAUCCUU-3' (SEQ ID NO: 5482)
3'-AAAUUUUAUUUUUAUUUUUGUUAGGAA-5' (SEQ ID NO: 481)

KRAS-2274 Target: 5'-TTTAAAATAAAAATAAAAACAATCCTT-3' (SEQ ID NO: 1887)

5'-AAAAAUAAAAACAAUCCUUUUGAUA-3' (SEQ ID NO: 5483)
3'-UAUUUUUAUUUUUGUUAGGAAAACUAU-5' (SEQ ID NO: 482)

KRAS-2280 Target: 5'-ATAAAAATAAAAACAATCCTTTTGATA-3' (SEQ ID NO: 1888)

5'-AAAAUAAAAACAAUCCUUUUGAUAA-3' (SEQ ID NO: 5484)
3'-AUUUUUAUUUUUGUUAGGAAAACUAUU-5' (SEQ ID NO: 483)

KRAS-2281 Target: 5'-TAAAAATAAAAACAATCCTTTTGATAA-3' (SEQ ID NO: 1889)

5'-AAAUAAAAACAAUCCUUUUGAUAAA-3' (SEQ ID NO: 5485)
3'-UUUUUAUUUUUGUUAGGAAAACUAUUU-5' (SEQ ID NO: 484)

KRAS-2282 Target: 5'-AAAAATAAAAACAATCCTTTTGATAAA-3' (SEQ ID NO: 1890)

5'-AAUAAAAACAAUCCUUUUGAUAAAU-3' (SEQ ID NO: 5486)
3'-UUUUAUUUUUGUUAGGAAAACUAUUUA-5' (SEQ ID NO: 485)

KRAS-2283 Target: 5'-AAAATAAAAACAATCCTTTTGATAAAT-3' (SEQ ID NO: 1891)

5'-AUAAAAACAAUCCUUUUGAUAAAUU-3' (SEQ ID NO: 5487)
3'-UUUAUUUUUGUUAGGAAAACUAUUUAA-5' (SEQ ID NO: 486)

KRAS-2284 Target: 5'-AAATAAAAACAATCCTTTTGATAAATT-3' (SEQ ID NO: 1892)

5'-UAAAAACAAUCCUUUUGAUAAAUUU-3' (SEQ ID NO: 5488)
3'-UUAUUUUUGUUAGGAAAACUAUUUAAA-5' (SEQ ID NO: 487)

KRAS-2285 Target: 5'-AATAAAAACAATCCTTTTGATAAATTT-3' (SEQ ID NO: 1893)

5'-AAAAACAAUCCUUUUGAUAAAUUUA-3' (SEQ ID NO: 5489)
3'-UAUUUUUGUUAGGAAAACUAUUUAAAU-5' (SEQ ID NO: 488)

KRAS-2286 Target: 5'-ATAAAAACAATCCTTTTGATAAATTTA-3' (SEQ ID NO: 1894)

5'-AAAACAAUCCUUUUGAUAAAUUUAA-3' (SEQ ID NO: 5490)
3'-AUUUUUGUUAGGAAAACUAUUUAAAUU-5' (SEQ ID NO: 489)

KRAS-2287 Target: 5'-TAAAAACAATCCTTTTGATAAATTTAA-3' (SEQ ID NO: 1895)

5'-CAAUCCUUUUGAUAAAUUUAAAAUG-3' (SEQ ID NO: 5491)
3'-UUGUUAGGAAAACUAUUUAAAUUUUAC-5' (SEQ ID NO: 490)

KRAS-2291 Target: 5'-AACAATCCTTTTGATAAATTTAAAATG-3' (SEQ ID NO: 1896)

5'-CUUUUGAUAAAUUUAAAAUGUUACU-3' (SEQ ID NO: 5492)
3'-AGGAAAACUAUUUAAAUUUUACAAUGA-5' (SEQ ID NO: 491)

KRAS-2296 Target: 5'-TCCTTTTGATAAATTTAAAATGTTACT-3' (SEQ ID NO: 1897)

5'-UUUUGAUAAAUUUAAAAUGUUACUU-3' (SEQ ID NO: 5493)
3'-GGAAAACUAUUUAAAUUUUACAAUGAA-5' (SEQ ID NO: 492)

KRAS-2297 Target: 5'-CCTTTTGATAAATTTAAAATGTTACTT-3' (SEQ ID NO: 1898)

5'-UUUGAUAAAUUUAAAAUGUUACUUA-3' (SEQ ID NO: 5494)
3'-GAAAACUAUUUAAAUUUUACAAUGAAU-5' (SEQ ID NO: 493)

KRAS-2298 Target: 5'-CTTTTGATAAATTTAAAATGTTACTTA-3' (SEQ ID NO: 1899)

5'-AUAAAUUUAAAAUGUUACUUAUUUU-3' (SEQ ID NO: 5495)
3'-ACUAUUUAAAUUUUACAAUGAAUAAAA-5' (SEQ ID NO: 494)

KRAS-2302 Target: 5'-TGATAAATTTAAAATGTTACTTATTTT-3' (SEQ ID NO: 1900)

5'-UAAAUUUAAAAUGUUACUUAUUUUA-3' (SEQ ID NO: 5496)
3'-CUAUUUAAAUUUUACAAUGAAUAAAAU-5' (SEQ ID NO: 495)

KRAS-2303 Target: 5'-GATAAATTTAAAATGTTACTTATTTTA-3' (SEQ ID NO: 1901)

5'-AAAUUUAAAAUGUUACUUAUUUUAA-3' (SEQ ID NO: 5497)
3'-UAUUUAAAUUUUACAAUGAAUAAAAUU-5' (SEQ ID NO: 496)

KRAS-2304 Target: 5'-ATAAATTTAAAATGTTACTTATTTTAA-3' (SEQ ID NO: 1902)

5'-AAUUUAAAAUGUUACUUAUUUUAAA-3' (SEQ ID NO: 5498)
3'-AUUUAAAUUUUACAAUGAAUAAAAUUU-5' (SEQ ID NO: 497)

KRAS-2305 Target: 5'-TAAATTTAAAATGTTACTTATTTTAAA-3' (SEQ ID NO: 1903)

5'-AUUUAAAAUGUUACUUAUUUUAAAA-3' (SEQ ID NO: 5499)
3'-UUUAAAUUUUACAAUGAAUAAAAUUUU-5' (SEQ ID NO: 498)

KRAS-2306 Target: 5'-AAATTTAAAATGTTACTTATTTTAAAA-3' (SEQ ID NO: 1904)

5'-UUUAAAAUGUUACUUAUUUUAAAAU-3' (SEQ ID NO: 5500)
3'-UUAAAUUUUACAAUGAAUAAAAUUUUA-5' (SEQ ID NO: 499)

KRAS-2307 Target: 5'-AATTTAAAATGTTACTTATTTTAAAAT-3' (SEQ ID NO: 1905)

5'-UAAAAUGUUACUUAUUUUAAAAUAA-3' (SEQ ID NO: 5501)
3'-AAAUUUUACAAUGAAUAAAAUUUUAUU-5' (SEQ ID NO: 500)

KRAS-2309 Target: 5'-TTTAAAATGTTACTTATTTTAAAATAA-3' (SEQ ID NO: 1906)

5'-AAAAUGUUACUUAUUUUAAAAUAAA-3' (SEQ ID NO: 5502)
3'-AAUUUUACAAUGAAUAAAAUUUUAUU-5' (SEQ ID NO: 501)

KRAS-2310 Target: 5'-TTAAAATGTTACTTATTTTAAAATAAA-3' (SEQ ID NO: 1907)

5'-AAAUGUUACUUAUUUUAAAAUAAAU-3' (SEQ ID NO: 5503)
3'-AUUUUACAAUGAAUAAAAUUUUAUUUA-5' (SEQ ID NO: 502)

KRAS-2311 Target: 5'-TAAAATGTTACTTATTTTAAAATAAAT-3' (SEQ ID NO: 1908)

5'-AAUGUUACUUAUUUUAAAAUAAAUG-3' (SEQ ID NO: 5504)
3'-UUUUACAAUGAAUAAAAUUUUAUUUAC-5' (SEQ ID NO: 503)

KRAS-2312 Target: 5'-AAAATGTTACTTATTTTAAAATAAATG-3' (SEQ ID NO: 1909)

5'-AUGUUACUUAUUUUAAAAUAAAUGA-3' (SEQ ID NO: 5505)
3'-UUUACAAUGAAUAAAAUUUUAUUUACU-5' (SEQ ID NO: 504)

KRAS-2313 Target: 5'-AAATGTTACTTATTTTAAAATAAATGA-3' (SEQ ID NO: 1910)

5'-GUUACUUAUUUUAAAAUAAAUGAAG-3' (SEQ ID NO: 5506)
3'-UACAAUGAAUAAAAUUUUAUUUACUUC-5' (SEQ ID NO: 505)

KRAS-2315 Target: 5'-ATGTTACTTATTTTAAAATAAATGAAG-3' (SEQ ID NO: 1911)

5'-UUAUUUUAAAAUAAAUGAAGUGAGA-3' (SEQ ID NO: 5507)
3'-UGAAUAAAAUUUUAUUUACUUCACUCU-5' (SEQ ID NO: 506)

KRAS-2320 Target: 5'-ACTTATTTTAAAATAAATGAAGTGAGA-3' (SEQ ID NO: 1912)

5'-AUUUUAAAAUAAAUGAAGUGAGAUG-3' (SEQ ID NO: 5508)
3'-AAUAAAAUUUUAUUUACUUCACUCUAC-5' (SEQ ID NO: 507)

KRAS-2322 Target: 5'-TTATTTTAAAATAAATGAAGTGAGATG-3' (SEQ ID NO: 1913)

5'-UUUUAAAAUAAAUGAAGUGAGAUGG-3' (SEQ ID NO: 5509)
3'-AUAAAAUUUUAUUUACUUCACUCUACC-5' (SEQ ID NO: 508)

KRAS-2323 Target: 5'-TATTTTAAAATAAATGAAGTGAGATGG-3' (SEQ ID NO: 1914)

5'-UAAAAUAAAUGAAGUGAGAUGGCAU-3' (SEQ ID NO: 5510)
3'-AAAUUUUAUUUACUUCACUCUACCGUA-5' (SEQ ID NO: 509)

KRAS-2326 Target: 5'-TTTAAAATAAATGAAGTGAGATGGCAT-3' (SEQ ID NO: 1915)

5'-AAAAUAAAUGAAGUGAGAUGGCAUG-3' (SEQ ID NO: 5511)
3'-AAUUUUAUUUACUUCACUCUACCGUAC-5' (SEQ ID NO: 510)

KRAS-2327 Target: 5'-TTAAAATAAATGAAGTGAGATGGCATG-3' (SEQ ID NO: 1916)

5'-CAUUUCUUCAUGUUAAAAGAAGUCA-3' (SEQ ID NO: 5512)
3'-AGGUAAAGAAGUACAAUUUUCUUCAGU-5' (SEQ ID NO: 511)

KRAS-2447 Target: 5'-TCCATTTCTTCATGTTAAAAGAAGTCA-3' (SEQ ID NO: 1917)

5'-AUUUCUUCAUGUUAAAAGAAGUCAU-3' (SEQ ID NO: 5513)
3'-GGUAAAGAAGUACAAUUUUCUUCAGUA-5' (SEQ ID NO: 512)

KRAS-2448 Target: 5'-CCATTTCTTCATGTTAAAAGAAGTCAT-3' (SEQ ID NO: 1918)

5'-CAAACUCUUAGUUUUUUUUUUUUAC-3' (SEQ ID NO: 5514)
3'-GAGUUUGAGAAUCAAAAAAAAAAAAAUG-5' (SEQ ID NO: 513)

KRAS-2475 Target: 5'-CTCAAACTCTTAGTTTTTTTTTTTTAC-3' (SEQ ID NO: 1919)

5'-GUUUUUUUUUUUUACAACUAUGUAA-3' (SEQ ID NO: 5515)
3'-AUCAAAAAAAAAAAAAUGUUGAUACAUU-5' (SEQ ID NO: 514)

KRAS-2485 Target: 5'-TAGTTTTTTTTTTTTACAACTATGTAA-3' (SEQ ID NO: 1920)

5'-UUUUUUUUUUUUUACAACUAUGUAAU-3' (SEQ ID NO: 5516)
3'-UCAAAAAAAAAAAAAUGUUGAUACAUUA-5' (SEQ ID NO: 515)

KRAS-2486 Target: 5'-AGTTTTTTTTTTTTACAACTATGTAAT-3' (SEQ ID NO: 1921)

5'-UUUUUUUUUUUUACAACUAUGUAAUU-3' (SEQ ID NO: 5517)
3'-CAAAAAAAAAAAAUGUUGAUACAUUAA-5' (SEQ ID NO: 516)

KRAS-2487 Target: 5'-GTTTTTTTTTTTTACAACTATGTAATT-3' (SEQ ID NO: 1922)

5'-UUUUUUUUUUACAACUAUGUAAUUU-3' (SEQ ID NO: 5518)
3'-AAAAAAAAAAAAUGUUGAUACAUUAAA-5' (SEQ ID NO: 517)

KRAS-2488 Target: 5'-TTTTTTTTTTTTACAACTATGTAATTT-3' (SEQ ID NO: 1923)

5'-UUUUUUUUUACAACUAUGUAAUUUA-3' (SEQ ID NO: 5519)
3'-AAAAAAAAAAAUGUUGAUACAUUAAAU-5' (SEQ ID NO: 518)

KRAS-2489 Target: 5'-TTTTTTTTTTTACAACTATGTAATTTA-3' (SEQ ID NO: 1924)

5'-UUUUUUUUACAACUAUGUAAUUUAU-3' (SEQ ID NO: 5520)
3'-AAAAAAAAAAUGUUGAUACAUUAAAUA-5' (SEQ ID NO: 519)

KRAS-2490 Target: 5'-TTTTTTTTTTACAACTATGTAATTTAT-3' (SEQ ID NO: 1925)

5'-UUUUUUUACAACUAUGUAAUUUAUA-3' (SEQ ID NO: 5521)
3'-AAAAAAAAAUGUUGAUACAUUAAAUAU-5' (SEQ ID NO: 520)

KRAS-2491 Target: 5'-TTTTTTTTTACAACTATGTAATTTATA-3' (SEQ ID NO: 1926)

5'-UUUUUUACAACUAUGUAAUUUAUAU-3' (SEQ ID NO: 5522)
3'-AAAAAAAAUGUUGAUACAUUAAAUAUA-5' (SEQ ID NO: 521)

KRAS-2492 Target: 5'-TTTTTTTTACAACTATGTAATTTATAT-3' (SEQ ID NO: 1927)

5'-UUUUUACAACUAUGUAAUUUAUAUU-3' (SEQ ID NO: 5523)
3'-AAAAAAAUGUUGAUACAUUAAAUAUAA-5' (SEQ ID NO: 522)

KRAS-2493 Target: 5'-TTTTTTTACAACTATGTAATTTATATT-3' (SEQ ID NO: 1928)

5'-UUUUACAACUAUGUAAUUUAUAUUC-3' (SEQ ID NO: 5524)
3'-AAAAAAUGUUGAUACAUUAAAUAUAAG-5' (SEQ ID NO: 523)

KRAS-2494 Target: 5'-TTTTTTACAACTATGTAATTTATATTC-3' (SEQ ID NO: 1929)

5'-UUUACAACUAUGUAAUUUAUAUUCC-3' (SEQ ID NO: 5525)
3'-AAAAAUGUUGAUACAUUAAAUAUAAGG-5' (SEQ ID NO: 524)

KRAS-2495 Target: 5'-TTTTTACAACTATGTAATTTATATTCC-3' (SEQ ID NO: 1930)

5'-CUAUGUAAUUUAUAUUCCAUUUACA-3' (SEQ ID NO: 5526)
3'-UUGAUACAUUAAAUAUAAGGUAAAUGU-5' (SEQ ID NO: 525)

KRAS-2502 Target: 5'-AACTATGTAATTTATATTCCATTTACA-3' (SEQ ID NO: 1931)

5'-UAUGUAAUUUAUAUUCCAUUUACAU-3' (SEQ ID NO: 5527)
3'-UGAUACAUUAAAUAUAAGGUAAAUGUA-5' (SEQ ID NO: 526)

KRAS-2503 Target: 5'-ACTATGTAATTTATATTCCATTTACAT-3' (SEQ ID NO: 1932)

5'-AUGUAAUUUAUAUUCCAUUUACAUA-3' (SEQ ID NO: 5528)
3'-GAUACAUUAAAUAUAAGGUAAAUGUAU-5' (SEQ ID NO: 527)

KRAS-2504 Target: 5'-CTATGTAATTTATATTCCATTTACATA-3' (SEQ ID NO: 1933)

5'-UUUAUAUUCCAUUUACAUAAGGAUA-3' (SEQ ID NO: 5529)
3'-UUAAAUAUAAGGUAAAUGUAUUCCUAU-5' (SEQ ID NO: 528)

KRAS-2510 Target: 5'-AATTTATATTCCATTTACATAAGGATA-3' (SEQ ID NO: 1934)

5'-UUAUAUUCCAUUUACAUAAGGAUAC-3' (SEQ ID NO: 5530)
3'-UAAAUAUAAGGUAAAUGUAUUCCUAUG-5' (SEQ ID NO: 529)

KRAS-2511 Target: 5'-ATTTATATTCCATTTACATAAGGATAC-3' (SEQ ID NO: 1935)

5'-UAUAUUCCAUUUACAUAAGGAUACA-3' (SEQ ID NO: 5531)
3'-AAAUAUAAGGUAAAUGUAUUCCUAUGU-5' (SEQ ID NO: 530)

KRAS-2512 Target: 5'-TTTATATTCCATTTACATAAGGATACA-3' (SEQ ID NO: 1936)

5'-AUAUUCCAUUUACAUAAGGAUACAC-3' (SEQ ID NO: 5532)
3'-AAUAUAAGGUAAAUGUAUUCCUAUGUG-5' (SEQ ID NO: 531)

KRAS-2513 Target: 5'-TTATATTCCATTTACATAAGGATACAC-3' (SEQ ID NO: 1937)

5'-CAUAAGGAUACACUUAUUUGUCAAG-3' (SEQ ID NO: 5533)
3'-AUGUAUUCCUAUGUGAAUAAACAGUUC-5' (SEQ ID NO: 532)

KRAS-2525 Target: 5'-TACATAAGGATACACTTATTTGTCAAG-3' (SEQ ID NO: 1938)

5'-AGGAUACACUUAUUUGUCAAGCUCA-3' (SEQ ID NO: 5534)
3'-AUUCCUAUGUGAAUAAACAGUUCGAGU-5' (SEQ ID NO: 533)

KRAS-2529 Target: 5'-TAAGGATACACTTATTTGTCAAGCTCA-3' (SEQ ID NO: 1939)

5'-CUGUAAAUUUUUAACCUAUGUUACA-3' (SEQ ID NO: 5535)
3'-UAGACAUUUAAAAAUUGGAUACAAUGU-5' (SEQ ID NO: 534)

KRAS-2561 Target: 5'-ATCTGTAAATTTTTAACCTATGTTACA-3' (SEQ ID NO: 1940)

5'-UGUAAAUUUUUAACCUAUGUUACAC-3' (SEQ ID NO: 5536)
3'-AGACAUUUAAAAAUUGGAUACAAUGUG-5' (SEQ ID NO: 535)

KRAS-2562 Target: 5'-TCTGTAAATTTTTAACCTATGTTACAC-3' (SEQ ID NO: 1941)

5'-GUAAAUUUUUAACCUAUGUUACACC-3' (SEQ ID NO: 5537)
3'-GACAUUUAAAAAUUGGAUACAAUGUGG-5' (SEQ ID NO: 536)

KRAS-2563 Target: 5'-CTGTAAATTTTTAACCTATGTTACACC-3' (SEQ ID NO: 1942)

5'-CAAGAGGUGAAGUUUAUAUUUGAAU-3' (SEQ ID NO: 5538)
3'-ACGUUCUCCACUUCAAAUAUAAACUUA-5' (SEQ ID NO: 537)

KRAS-2619 Target: 5'-TGCAAGAGGTGAAGTTTATATTTGAAT-3' (SEQ ID NO: 1943)

5'-AGAGGUGAAGUUUAUAUUUGAAUAU-3' (SEQ ID NO: 5539)
3'-GUUCUCCACUUCAAAUAUAAACUUAUA-5' (SEQ ID NO: 538)

KRAS-2621 Target: 5'-CAAGAGGTGAAGTTTATATTTGAATAT-3' (SEQ ID NO: 1944)

5'-GAGGUGAAGUUUAUAUUUGAAUAUC-3' (SEQ ID NO: 5540)
3'-UUCUCCACUUCAAAUAUAAACUUAUAG-5' (SEQ ID NO: 539)

KRAS-2622 Target: 5'-AAGAGGTGAAGTTTATATTTGAATATC-3' (SEQ ID NO: 1945)

5'-GGUGAAGUUUAUAUUUGAAUAUCCA-3' (SEQ ID NO: 5541)
3'-CUCCACUUCAAAUAUAAACUUAUAGGU-5' (SEQ ID NO: 540)

KRAS-2624 Target: 5'-GAGGTGAAGTTTATATTTGAATATCCA-3' (SEQ ID NO: 1946)

5'-GUGAAGUUUAUAUUUGAAUAUCCAU-3' (SEQ ID NO: 5542)
3'-UCCACUUCAAAUAUAAACUUAUAGGUA-5' (SEQ ID NO: 541)

KRAS-2625 Target: 5'-AGGTGAAGTTTATATTTGAATATCCAT-3' (SEQ ID NO: 1947)

5'-GUUUAUAUUUGAAUAUCCAUUCUCG-3' (SEQ ID NO: 5543)
3'-UUCAAAUAUAAACUUAUAGGUAAGAGC-5' (SEQ ID NO: 542)

KRAS-2630 Target: 5'-AAGTTTATATTTGAATATCCATTCTCG-3' (SEQ ID NO: 1948)

5'-UUGAUGCAGUUUUAAUACUUGUAAU-3' (SEQ ID NO: 5544)
3'-UGAACUACGUCAAAAUUAUGAACAUUA-5' (SEQ ID NO: 543)

KRAS-2718 Target: 5'-ACTTGATGCAGTTTTAATACTTGTAAT-3' (SEQ ID NO: 1949)

5'-GAUGCAGUUUUAAUACUUGUAAUUC-3' (SEQ ID NO: 5545)
3'-AACUACGUCAAAAUUAUGAACAUUAAG-5' (SEQ ID NO: 544)

KRAS-2720 Target: 5'-TTGATGCAGTTTTAATACTTGTAATTC-3' (SEQ ID NO: 1950)

5'-UUUGACCUAAUCACUAAUUUUCAGG-3' (SEQ ID NO: 5546)
3'-CUAAACUGGAUUAGUGAUUAAAAGUCC-5' (SEQ ID NO: 545)

KRAS-2871 Target: 5'-GATTTGACCTAATCACTAATTTTCAGG-3' (SEQ ID NO: 1951)

5'-CUAAUCACUAAUUUUCAGGUGGUGG-3' (SEQ ID NO: 5547)
3'-UGGAUUAGUGAUUAAAAGUCCACCACC-5' (SEQ ID NO: 546)

KRAS-2877 Target: 5'-ACCTAATCACTAATTTTCAGGTGGTGG-3' (SEQ ID NO: 1952)

5'-GUAGGAUUUUUCAAACCUGGUAUGA-3' (SEQ ID NO: 5548)
3'-GUCAUCCUAAAAAGUUUGGACCAUACU-5' (SEQ ID NO: 547)

KRAS-2946 Target: 5'-CAGTAGGATTTTTCAAACCTGGTATGA-3' (SEQ ID NO: 1953)

5'-UGGAAGGAGAAUUUAAUAAAGAUAG-3' (SEQ ID NO: 5549)
3'-UCACCUUCCUCUUAAAUUAUUUCUAUC-5' (SEQ ID NO: 548)

KRAS-2991 Target: 5'-AGTGGAAGGAGAATTTAATAAAGATAG-3' (SEQ ID NO: 1954)

5'-AAGGAGAAUUUAAUAAAGAUAGUGC-3' (SEQ ID NO: 5550)
3'-CCUUCCUCUUAAAUUAUUUCUAUCACG-5' (SEQ ID NO: 549)

KRAS-2994 Target: 5'-GGAAGGAGAATTTAATAAAGATAGTGC-3' (SEQ ID NO: 1955)

5'-GGAGAAUUUAAUAAAGAUAGUGCUG-3' (SEQ ID NO: 5551)
3'-UUCCUCUUAAAUUAUUUCUAUCACGAC-5' (SEQ ID NO: 550)

KRAS-2996 Target: 5'-AAGGAGAATTTAATAAAGATAGTGCTG-3' (SEQ ID NO: 1956)

5'-GAGAAUUUAAUAAAGAUAGUGCUGA-3' (SEQ ID NO: 5552)
3'-UCCUCUUAAAUUAUUUCUAUCACGACU-5' (SEQ ID NO: 551)

KRAS-2997 Target: 5'-AGGAGAATTTAATAAAGATAGTGCTGA-3' (SEQ ID NO: 1957)

5'-AUUUAAUAAAGAUAGUGCUGAAAGA-3' (SEQ ID NO: 5553)
3'-CUUAAAUUAUUUCUAUCACGACUUUCU-5' (SEQ ID NO: 552)

KRAS-3001 Target: 5'-GAATTTAATAAAGATAGTGCTGAAAGA-3' (SEQ ID NO: 1958)

5'-CUUAGGUAAUCUAUAACUAGGACUA-3' (SEQ ID NO: 5554)
3'-AGGAAUCCAUUAGAUAUUGAUCCUGAU-5' (SEQ ID NO: 553)

KRAS-3030 Target: 5'-TCCTTAGGTAATCTATAACTAGGACTA-3' (SEQ ID NO: 1959)

5'-UUAGGUAAUCUAUAACUAGGACUAC-3' (SEQ ID NO: 5555)
3'-GGAAUCCAUUAGAUAUUGAUCCUGAUG-5' (SEQ ID NO: 554)

KRAS-3031 Target: 5'-CCTTAGGTAATCTATAACTAGGACTAC-3' (SEQ ID NO: 1960)

5'-CAGUAAUACAUUCCAUUGUUUUAGU-3' (SEQ ID NO: 5556)
3'-UUGUCAUUAUGUAAGGUAACAAAAUCA-5' (SEQ ID NO: 555)

KRAS-3065 Target: 5'-AACAGTAATACATTCCATTGTTTTAGT-3' (SEQ ID NO: 1961)

5'-GUAAUACAUUCCAUUGUUUUAGUAA-3' (SEQ ID NO: 5557)
3'-GUCAUUAUGUAAGGUAACAAAAUCAUU-5' (SEQ ID NO: 556)

KRAS-3067 Target: 5'-CAGTAATACATTCCATTGTTTTAGTAA-3' (SEQ ID NO: 1962)

5'-UAAUACAUUCCAUUGUUUUAGUAAC-3' (SEQ ID NO: 5558)
3'-UCAUUAUGUAAGGUAACAAAAUCAUUG-5' (SEQ ID NO: 557)

KRAS-3068 Target: 5'-AGTAATACATTCCATTGTTTTAGTAAC-3' (SEQ ID NO: 1963)

5'-AAUACAUUCCAUUGUUUUAGUAACC-3' (SEQ ID NO: 5559)
3'-CAUUAUGUAAGGUAACAAAAUCAUUGG-5' (SEQ ID NO: 558)

KRAS-3069 Target: 5'-GTAATACATTCCATTGTTTTAGTAACC-3' (SEQ ID NO: 1964)

5'-AUUGUUUUAGUAACCAGAAAUCUUC-3' (SEQ ID NO: 5560)
3'-GGUAACAAAAUCAUUGGUCUUUAGAAG-5' (SEQ ID NO: 559)

KRAS-3079 Target: 5'-CCATTGTTTTAGTAACCAGAAATCTTC-3' (SEQ ID NO: 1965)

5'-CAGAAAUCUUCAUGCAAUGAAAAAU-3' (SEQ ID NO: 5561)
3'-UGGUCUUUAGAAGUACGUUACUUUUUA-5' (SEQ ID NO: 560)

KRAS-3093 Target: 5'-ACCAGAAATCTTCATGCAATGAAAAAT-3' (SEQ ID NO: 1966)

5'-CAUGCAAUGAAAAAUACUUUAAUUC-3' (SEQ ID NO: 5562)
3'-AAGUACGUUACUUUUUAUGAAAUUAAG-5' (SEQ ID NO: 561)

KRAS-3103 Target: 5'-TTCATGCAATGAAAAATACTTTAATTC-3' (SEQ ID NO: 1967)

5'-UGAAAAAUACUUUAAUUCAUGAAGC-3' (SEQ ID NO: 5563)
3'-UUACUUUUUAUGAAAUUAAGUACUUCG-5' (SEQ ID NO: 562)

KRAS-3110 Target: 5'-AATGAAAAATACTTTAATTCATGAAGC-3' (SEQ ID NO: 1968)

5'-AAAAAUACUUUAAUUCAUGAAGCUU-3' (SEQ ID NO: 5564)
3'-ACUUUUUAUGAAAUUAAGUACUUCGAA-5' (SEQ ID NO: 563)

KRAS-3112 Target: 5'-TGAAAAATACTTTAATTCATGAAGCTT-3' (SEQ ID NO: 1969)

5'-AAAAUACUUUAAUUCAUGAAGCUUA-3' (SEQ ID NO: 5565)
3'-CUUUUUAUGAAAUUAAGUACUUCGAAU-5' (SEQ ID NO: 564)

KRAS-3113 Target: 5'-GAAAAATACTTTAATTCATGAAGCTTA-3' (SEQ ID NO: 1970)

5'-CAUGAAGCUUACUUUUUUUUUUUGG-3' (SEQ ID NO: 5566)
3'-AAGUACUUCGAAUGAAAAAAAAAAACC-5' (SEQ ID NO: 565)

KRAS-3127 Target: 5'-TTCATGAAGCTTACTTTTTTTTTTTGG-3' (SEQ ID NO: 1971)

5'-GAAGCUUACUUUUUUUUUUUGGUGU-3' (SEQ ID NO: 5567)
3'-UACUUCGAAUGAAAAAAAAAAACCACA-5' (SEQ ID NO: 566)

KRAS-3130 Target: 5'-ATGAAGCTTACTTTTTTTTTTTGGTGT-3' (SEQ ID NO: 1972)

5'-CUUACUUUUUUUUUUUGGUGUCAGA-3' (SEQ ID NO: 5568)
3'-UCGAAUGAAAAAAAAAAACCACAGUCU-5' (SEQ ID NO: 567)

KRAS-3134 Target: 5'-AGCTTACTTTTTTTTTTTGGTGTCAGA-3' (SEQ ID NO: 1973)

5'-CUUUUUUUUUUUGGUGUCAGAGUCU-3' (SEQ ID NO: 5569)
3'-AUGAAAAAAAAAAACCACAGUCUCAGA-5' (SEQ ID NO: 568)

KRAS-3138 Target: 5'-TACTTTTTTTTTTTGGTGTCAGAGTCT-3' (SEQ ID NO: 1974)

5'-UUUUUUUUUUUGGUGUCAGAGUCUC-3' (SEQ ID NO: 5570)
3'-UGAAAAAAAAAAACCACAGUCUCAGAG-5' (SEQ ID NO: 569)

KRAS-3139 Target: 5'-ACTTTTTTTTTTTGGTGTCAGAGTCTC-3' (SEQ ID NO: 1975)

5'-CUAAUUUUUGUAUUUUUAGGAGAGA-3' (SEQ ID NO: 5571)
3'-UUGAUUAAAAACAUAAAAAUCCUCUCU-5' (SEQ ID NO: 570)

KRAS-3297 Target: 5'-AACTAATTTTTGTATTTTTAGGAGAGA-3' (SEQ ID NO: 1976)

5'-AUUUUUGUAUUUUUAGGAGAGACGG-3' (SEQ ID NO: 5572)
3'-AUUAAAAAACAUAAAAAUCCUCUCUGCC-5' (SEQ ID NO: 571)

KRAS-3300 Target: 5'-TAATTTTTGTATTTTTAGGAGAGACGG-3' (SEQ ID NO: 1977)

5'-CAUUUAUUCAGCAAAUAUUUAUUGA-3' (SEQ ID NO: 5573)
3'-GAGUAAAUAAGUCGUUUAUAAAUAACU-5' (SEQ ID NO: 572)

KRAS-3413 Target: 5'-CTCATTTATTCAGCAAATATTTATTGA-3' (SEQ ID NO: 1978)

5'-UUUAUUCAGCAAAUAUUUAUUGAGU-3' (SEQ ID NO: 5574)
3'-GUAAAUAAGUCGUUUAUAAAUAACUCA-5' (SEQ ID NO: 573)

KRAS-3415 Target: 5'-CATTTATTCAGCAAATATTTATTGAGT-3' (SEQ ID NO: 1979)

5'-UAUUCAGCAAAUAUUUAUUGAGUGC-3' (SEQ ID NO: 5575)
3'-AAAUAAGUCGUUUAUAAAUAACUCACG-5' (SEQ ID NO: 574)

KRAS-3417 Target: 5'-TTTATTCAGCAAATATTTATTGAGTGC-3' (SEQ ID NO: 1980)

5'-UUUUAGUUUUGCAAAGAAGGGGUUU-3' (SEQ ID NO: 5576)
3'-AUAAAAUCAAAACGUUUCUUCCCCAAA-5' (SEQ ID NO: 575)

KRAS-3589 Target: 5'-TATTTTAGTTTTGCAAAGAAGGGGTTT-3' (SEQ ID NO: 1981)

5'-CUAUAAUUGUUUUGCUACGAUUCCA-3' (SEQ ID NO: 5577)
3'-GAGAUAUUAACAAAACGAUGCUAAGGU-5' (SEQ ID NO: 576)

KRAS-3630 Target: 5'-CTCTATAATTGTTTTGCTACGATTCCA-3' (SEQ ID NO: 1982)

5'-CUUUAUGUAAAUCACUUCAUUGUUU-3' (SEQ ID NO: 5578)
3'-AUGAAAUACAUUUAGUGAAGUAACAAA-5' (SEQ ID NO: 577)

KRAS-3677 Target: 5'-TACTTTATGTAAATCACTTCATTGTTT-3' (SEQ ID NO: 1983)

5'-UUUAUGUAAAUCACUUCAUUGUUUU-3' (SEQ ID NO: 5579)
3'-UGAAAUACAUUUAGUGAAGUAACAAAA-5' (SEQ ID NO: 578)

KRAS-3678 Target: 5'-ACTTTATGTAAATCACTTCATTGTTTT-3' (SEQ ID NO: 1984)

5'-UUAUGUAAAUCACUUCAUUGUUUUA-3' (SEQ ID NO: 5580)
3'-GAAAUACAUUUAGUGAAGUAACAAAAU-5' (SEQ ID NO: 579)

KRAS-3679 Target: 5'-CTTTATGTAAATCACTTCATTGTTTTA-3' (SEQ ID NO: 1985)

5'-UAUGUAAAUCACUUCAUUGUUUUAA-3' (SEQ ID NO: 5581)
3'-AAAUACAUUUAGUGAAGUAACAAAAUU-5' (SEQ ID NO: 580)

KRAS-3680 Target: 5'-TTTATGTAAATCACTTCATTGTTTTAA-3' (SEQ ID NO: 1986)

5'-AUGUAAAUCACUUCAUUGUUUUAAA-3' (SEQ ID NO: 5582)
3'-AAUACAUUUAGUGAAGUAACAAAAUUU-5' (SEQ ID NO: 581)

KRAS-3681 Target: 5'-TTATGTAAATCACTTCATTGTTTTAAA-3' (SEQ ID NO: 1987)

5'-UGUAAAUCACUUCAUUGUUUUAAAG-3' (SEQ ID NO: 5583)
3'-AUACAUUUAGUGAAGUAACAAAAUUUC-5' (SEQ ID NO: 582)

KRAS-3682 Target: 5'-TATGTAAATCACTTCATTGTTTTAAAG-3' (SEQ ID NO: 1988)

5'-GUAAAUCACUUCAUUGUUUUAAAGG-3' (SEQ ID NO: 5584)
3'-UACAUUUAGUGAAGUAACAAAAUUUCC-5' (SEQ ID NO: 583)

KRAS-3683 Target: 5'-ATGTAAATCACTTCATTGTTTTAAAGG-3' (SEQ ID NO: 1989)

5'-UGUUUUAAAGGAAUAAACUUGAUUA-3' (SEQ ID NO: 5585)
3'-UAACAAAAUUUCCUUAUUUGAACUAAU-5' (SEQ ID NO: 584)

KRAS-3697 Target: 5'-ATTGTTTTAAAGGAATAAACTTGATTA-3' (SEQ ID NO: 1990)

5'-GUUUUAAAGGAAUAAACUUGAUUAU-3' (SEQ ID NO: 5586)
3'-AACAAAAUUUCCUUAUUUGAACUAAUA-5' (SEQ ID NO: 585)

KRAS-3698 Target: 5'-TTGTTTTAAAGGAATAAACTTGATTAT-3' (SEQ ID NO: 1991)

5'-UUAAAGGAAUAAACUUGAUUAUAUU-3' (SEQ ID NO: 5587)
3'-AAAAUUUCCUUAUUUGAACUAAUAUAA-5' (SEQ ID NO: 586)

KRAS-3701 Target: 5'-TTTTAAAGGAATAAACTTGATTATATT-3' (SEQ ID NO: 1992)

5'-UAAAGGAAUAAACUUGAUUAUAUUG-3' (SEQ ID NO: 5588)
3'-AAAUUUCCUUAUUUGAACUAAUAUAAC-5' (SEQ ID NO: 587)

KRAS-3702 Target: 5'-TTTAAAGGAATAAACTTGATTATATTG-3' (SEQ ID NO: 1993)

5'-AAAGGAAUAAACUUGAUUAUAUUGU-3' (SEQ ID NO: 5589)
3'-AAUUUCCUUAUUUGAACUAAUAUAACA-5' (SEQ ID NO: 588)

KRAS-3703 Target: 5'-TTAAAGGAATAAACTTGATTATATTGT-3' (SEQ ID NO: 1994)

5'-AGGAAUAAACUUGAUUAUAUUGUUU-3' (SEQ ID NO: 5590)
3'-UUUCCUUAUUUGAACUAAUAUAACAAA-5' (SEQ ID NO: 589)

KRAS-3705 Target: 5'-AAAGGAATAAACTTGATTATATTGTTT-3' (SEQ ID NO: 1995)

5'-GGAAUAAACUUGAUUAUAUUGUUUU-3' (SEQ ID NO: 5591)
3'-UUCCUUAUUUGAACUAAUAUAACAAAA-5' (SEQ ID NO: 590)

KRAS-3706 Target: 5'-AAGGAATAAACTTGATTATATTGTTTT-3' (SEQ ID NO: 1996)

5'-GAAUAAACUUGAUUAUAUUGUUUUU-3' (SEQ ID NO: 5592)
3'-UCCUUAUUUGAACUAAUAUAACAAAAA-5' (SEQ ID NO: 591)

KRAS-3707 Target: 5'-AGGAATAAACTTGATTATATTGTTTTT-3' (SEQ ID NO: 1997)

5'-AAUAAACUUGAUUAUAUUGUUUUUU-3' (SEQ ID NO: 5593)
3'-CCUUAUUUGAACUAAUAUAACAAAAAA-5' (SEQ ID NO: 592)

KRAS-3708 Target: 5'-GGAATAAACTTGATTATATTGTTTTTT-3' (SEQ ID NO: 1998)

5'-AUAAACUUGAUUAUAUUGUUUUUUU-3' (SEQ ID NO: 5594)
3'-CUUAUUUGAACUAAUAUAACAAAAAAA-5' (SEQ ID NO: 593)

KRAS-3709 Target: 5'-GAATAAACTTGATTATATTGTTTTTTT-3' (SEQ ID NO: 1999)

5'-CUUGAUUAUAUUGUUUUUUUAUUUG-3' (SEQ ID NO: 5595)
3'-UUGAACUAAUAUAACAAAAAAAUAAAC-5' (SEQ ID NO: 594)

KRAS-3714 Target: 5'-AACTTGATTATATTGTTTTTTTATTTG-3' (SEQ ID NO: 2000)

5'-UUGAUUAUAUUGUUUUUUUAUUUGG-3' (SEQ ID NO: 5596)
3'-UGAACUAAUAUAACAAAAAAAUAAACC-5' (SEQ ID NO: 595)

KRAS-3715 Target: 5'-ACTTGATTATATTGTTTTTTTATTTGG-3' (SEQ ID NO: 2001)

5'-AUUAUAUUGUUUUUUUAUUUGGCAU-3' (SEQ ID NO: 5597)
3'-ACUAAUAUAACAAAAAAAUAAACCGUA-5' (SEQ ID NO: 596)

KRAS-3718 Target: 5'-TGATTATATTGTTTTTTTATTTGGCAT-3' (SEQ ID NO: 2002)

5'-AUUGUUUUUUUAUUUGGCAUAACUG-3' (SEQ ID NO: 5598)
3'-UAUAACAAAAAAAUAAACCGUAUUGAC-5' (SEQ ID NO: 597)

KRAS-3723 Target: 5'-ATATTGTTTTTTTATTTGGCATAACTG-3' (SEQ ID NO: 2003)

5'-UUGUUUUUUUAUUUGGCAUAACUGU-3' (SEQ ID NO: 5599)
3'-AUAACAAAAAAAUAAACCGUAUUGACA-5' (SEQ ID NO: 598)

KRAS-3724 Target: 5'-TATTGTTTTTTTATTTGGCATAACTGT-3' (SEQ ID NO: 2004)

5'-UUUUUUAUUUGGCAUAACUGUGAUU-3' (SEQ ID NO: 5600)
3'-CAAAAAAAUAAACCGUAUUGACACUAA-5' (SEQ ID NO: 599)

KRAS-3728 Target: 5'-GTTTTTTTATTTGGCATAACTGTGATT-3' (SEQ ID NO: 2005)

5'-UUUUUAUUUGGCAUAACUGUGAUUC-3' (SEQ ID NO: 5601)
3'-AAAAAAAUAAACCGUAUUGACACUAAG-5' (SEQ ID NO: 600)

KRAS-3729 Target: 5'-TTTTTTTATTTGGCATAACTGTGATTC-3' (SEQ ID NO: 2006)

5'-AUAACUGUGAUUCUUUUAGGACAAU-3' (SEQ ID NO: 5602)
3'-CGUAUUGACACUAAGAAAAUCCUGUUA-5' (SEQ ID NO: 601)

KRAS-3741 Target: 5'-GCATAACTGTGATTCTTTTAGGACAAT-3' (SEQ ID NO: 2007)

5'-UGUGAUUCUUUUAGGACAAUUACUG-3' (SEQ ID NO: 5603)
3'-UGACACUAAGAAAAUCCUGUUAAUGAC-5' (SEQ ID NO: 602)

KRAS-3746 Target: 5'-ACTGTGATTCTTTTAGGACAATTACTG-3' (SEQ ID NO: 2008)

5'-GUGAUUCUUUUAGGACAAUUACUGU-3' (SEQ ID NO: 5604)
3'-GACACUAAGAAAAUCCUGUUAAUGACA-5' (SEQ ID NO: 603)

KRAS-3747 Target: 5'-CTGTGATTCTTTTAGGACAATTACTGT-3' (SEQ ID NO: 2009)

5'-UGUAUGUCAGAUAUUCAUAUUGACC-3' (SEQ ID NO: 5605)
3'-CCACAUACAGUCUAUAAGUAUAACUGG-5' (SEQ ID NO: 604)

KRAS-3783 Target: 5'-GGTGTATGTCAGATATTCATATTGACC-3' (SEQ ID NO: 2010)

5'-GUAUGUCAGAUAUUCAUAUUGACCC-3' (SEQ ID NO: 5606)
3'-CACAUACAGUCUAUAAGUAUAACUGGG-5' (SEQ ID NO: 605)

KRAS-3784 Target: 5'-GTGTATGTCAGATATTCATATTGACCC-3' (SEQ ID NO: 2011)

5'-AAUGUGUAAUAUUCCAGUUUUCUCU-3' (SEQ ID NO: 5607)
3'-GUUUACACAUUAUAAGGUCAAAAGAGA-5' (SEQ ID NO: 606)

KRAS-3810 Target: 5'-CAAATGTGTAATATTCCAGTTTTCTCT-3' (SEQ ID NO: 2012)

5'-UAAGUAAUUAAAAUAUACUUAAAAA-3' (SEQ ID NO: 5608)
3'-GUAUUCAUUAAUUUUAUAUGAAUUUUU-5' (SEQ ID NO: 607)

KRAS-3838 Target: 5'-CATAAGTAATTAAAATATACTTAAAAA-3' (SEQ ID NO: 2013)

5'-AAGUAAUUAAAAUAUACUUAAAAAU-3' (SEQ ID NO: 5609)
3'-UAUUCAUUAAUUUUAUAUGAAUUUUUA-5' (SEQ ID NO: 608)

KRAS-3839 Target: 5'-ATAAGTAATTAAAATATACTTAAAAAT-3' (SEQ ID NO: 2014)

5'-AGUAAUUAAAAUAUACUUAAAAAUU-3' (SEQ ID NO: 5610)
3'-AUUCAUUAAUUUUAUAUGAAUUUUUAA-5' (SEQ ID NO: 609)

KRAS-3840 Target: 5'-TAAGTAATTAAAATATACTTAAAAATT-3' (SEQ ID NO: 2015)

5'-GUAAUUAAAAUAUACUUAAAAAUUA-3' (SEQ ID NO: 5611)
3'-UUCAUUAAUUUUAUAUGAAUUUUUAAU-5' (SEQ ID NO: 610)

KRAS-3841 Target: 5'-AAGTAATTAAAATATACTTAAAAATTA-3' (SEQ ID NO: 2016)

5'-UAAUUAAAAUAUACUUAAAAAUUAA-3' (SEQ ID NO: 5612)
3'-UCAUUAAUUUUAUAUGAAUUUUUAAUU-5' (SEQ ID NO: 611)

KRAS-3842 Target: 5'-AGTAATTAAAATATACTTAAAAATTAA-3' (SEQ ID NO: 2017)

5'-AAUUAAAAUAUACUUAAAAAUUAAU-3' (SEQ ID NO: 5613)
3'-CAUUAAUUUUAUAUGAAUUUUUAAUUA-5' (SEQ ID NO: 612)

KRAS-3843 Target: 5'-GTAATTAAAATATACTTAAAAATTAAT-3' (SEQ ID NO: 2018)

5'-AUUAAAAUAUACUUAAAAAUUAAUA-3' (SEQ ID NO: 5614)
3'-AUUAAUUUUAUAUGAAUUUUUAAUUAU-5' (SEQ ID NO: 613)

KRAS-3844 Target: 5'-TAATTAAAATATACTTAAAAATTAATA-3' (SEQ ID NO: 2019)

5'-UUAAAAUAUACUUAAAAAUUAAUAG-3' (SEQ ID NO: 5615)
3'-UUAAUUUUAUAUGAAUUUUUAAUUAUC-5' (SEQ ID NO: 614)

KRAS-3845 Target: 5'-AATTAAAATATACTTAAAAATTAATAG-3' (SEQ ID NO: 2020)

5'-UAAAAUAUACUUAAAAAUUAAUAGU-3' (SEQ ID NO: 5616)
3'-UAAUUUUAUAUGAAUUUUUAAUUAUCA-5' (SEQ ID NO: 615)

KRAS-3846 Target: 5'-ATTAAAATATACTTAAAAATTAATAGT-3' (SEQ ID NO: 2021)

5'-AAAUAUACUUAAAAAUUAAUAGUUU-3' (SEQ ID NO: 5617)
3'-AUUUUAUAUGAAUUUUUAAUUAUCAAA-5' (SEQ ID NO: 616)

KRAS-3848 Target: 5'-TAAAATATACTTAAAAATTAATAGTTT-3' (SEQ ID NO: 2022)

5'-AAUAUACUUAAAAAUUAAUAGUUUU-3' (SEQ ID NO: 5618)
3'-UUUUAUAUGAAUUUUUAAUUAUCAAAA-5' (SEQ ID NO: 617)

KRAS-3849 Target: 5'-AAAATATACTTAAAAATTAATAGTTTT-3' (SEQ ID NO: 2023)

5'-AUAUACUUAAAAAUUAAUAGUUUUA-3' (SEQ ID NO: 5619)
3'-UUUAUAUGAAUUUUUAAUUAUCAAAAU-5' (SEQ ID NO: 618)

KRAS-3850 Target: 5'-AAATATACTTAAAAATTAATAGTTTTA-3' (SEQ ID NO: 2024)

5'-UAUACUUAAAAAUUAAUAGUUUUAU-3' (SEQ ID NO: 5620)
3'-UUAUAUGAAUUUUUAAUUAUCAAAAUA-5' (SEQ ID NO: 619)

KRAS-3851 Target: 5'-AATATACTTAAAAATTAATAGTTTTAT-3' (SEQ ID NO: 2025)

5'-CUUAAAAAUUAAUAGUUUUAUCUGG-3' (SEQ ID NO: 5621)
3'-AUGAAUUUUUAAUUAUCAAAAUAGACC-5' (SEQ ID NO: 620)

KRAS-3855 Target: 5'-TACTTAAAAATTAATAGTTTTATCTGG-3' (SEQ ID NO: 2026)

5'-AAAAUUAAUAGUUUUAUCUGGGUAC-3' (SEQ ID NO: 5622)
3'-AUUUUUAAUUAUCAAAAUAGACCCAUG-5' (SEQ ID NO: 621)

KRAS-3859 Target: 5'-TAAAAATTAATAGTTTTATCTGGGTAC-3' (SEQ ID NO: 2027)

5'-AAAUUAAUAGUUUUAUCUGGGUACA-3' (SEQ ID NO: 5623)
3'-UUUUUAAUUAUCAAAAUAGACCCAUGU-5' (SEQ ID NO: 622)

KRAS-3860 Target: 5'-AAAAATTAATAGTTTTATCTGGGTACA-3' (SEQ ID NO: 2028)

5'-AAUUAAUAGUUUUAUCUGGGUACAA-3' (SEQ ID NO: 5624)
3'-UUUUAAUUAUCAAAAUAGACCCAUGUU-5' (SEQ ID NO: 623)

KRAS-3861 Target: 5'-AAAATTAATAGTTTTATCTGGGTACAA-3' (SEQ ID NO: 2029)

5'-CUGGGUACAAAUAAACAGGUGCCUG-3' (SEQ ID NO: 5625)
3'-UAGACCCAUGUUUAUUUGUCCACGGAC-5' (SEQ ID NO: 624)

KRAS-3876 Target: 5'-ATCTGGGTACAAATAAACAGGTGCCTG-3' (SEQ ID NO: 2030)

5'-CAAGGAAACUUCUAUGUAAAAAUCA-3' (SEQ ID NO: 5626)
3'-CUGUUCCUUUGAAGAUACAUUUUUAGU-5' (SEQ ID NO: 625)

KRAS-3915 Target: 5'-GACAAGGAAACTTCTATGTAAAAATCA-3' (SEQ ID NO: 2031)

5'-AAGGAAACUUCUAUGUAAAAAUCAC-3' (SEQ ID NO: 5627)
3'-UGUUCCUUUGAAGAUACAUUUUUAGUG-5' (SEQ ID NO: 626)

KRAS-3916 Target: 5'-ACAAGGAAACTTCTATGTAAAAATCAC-3' (SEQ ID NO: 2032)

5'-AGGAAACUUCUAUGUAAAAAUCACU-3' (SEQ ID NO: 5628)
3'-GUUCCUUUGAAGAUACAUUUUUAGUGA-5' (SEQ ID NO: 627)

KRAS-3917 Target: 5'-CAAGGAAACTTCTATGTAAAAATCACT-3' (SEQ ID NO: 2033)

5'-CUAUGUAAAAAUCACUAUGAUUUCU-3' (SEQ ID NO: 5629)
3'-AAGAUACAUUUUUAGUGAUACUAAAGA-5' (SEQ ID NO: 628)

KRAS-3926 Target: 5'-TTCTATGTAAAAATCACTATGATTTCT-3' (SEQ ID NO: 2034)

5'-UAUGUAAAAAUCACUAUGAUUUCUG-3' (SEQ ID NO: 5630)
3'-AGAUACAUUUUUAGUGAUACUAAAGAC-5' (SEQ ID NO: 629)

KRAS-3927 Target: 5'-TCTATGTAAAAATCACTATGATTTCTG-3' (SEQ ID NO: 2035)

5'-AUGUAAAAAUCACUAUGAUUUCUGA-3' (SEQ ID NO: 5631)
3'-GAUACAUUUUUAGUGAUACUAAAGACU-5' (SEQ ID NO: 630)

KRAS-3928 Target: 5'-CTATGTAAAAATCACTATGATTTCTGA-3' (SEQ ID NO: 2036)

5'-AAAAAUCACUAUGAUUUCUGAAUUG-3' (SEQ ID NO: 5632)
3'-CAUUUUUAGUGAUACUAAAGACUUAAC-5' (SEQ ID NO: 631)

KRAS-3932 Target: 5'-GTAAAAATCACTATGATTTCTGAATTG-3' (SEQ ID NO: 2037)

5'-AAAAUCACUAUGAUUUCUGAAUUGC-3' (SEQ ID NO: 5633)
3'-AUUUUUAGUGAUACUAAAGACUUAACG-5' (SEQ ID NO: 632)

KRAS-3933 Target: 5'-TAAAAATCACTATGATTTCTGAATTGC-3' (SEQ ID NO: 2038)

5'-AUGAUUUCUGAAUUGCUAUGUGAAA-3' (SEQ ID NO: 5634)
3'-GAUACUAAAGACUUAACGAUACACUUU-5' (SEQ ID NO: 633)

KRAS-3942 Target: 5'-CTATGATTTCTGAATTGCTATGTGAAA-3' (SEQ ID NO: 2039)

5'-UGAUUUCUGAAUUGCUAUGUGAAAC-3' (SEQ ID NO: 5635)
3'-AUACUAAAGACUUAACGAUACACUUUG-5' (SEQ ID NO: 634)

KRAS-3943 Target: 5'-TATGATTTCTGAATTGCTATGTGAAAC-3' (SEQ ID NO: 2040)

5'-UGUGAAACUACAGAUCUUUGGAACA-3' (SEQ ID NO: 5636)
3'-AUACACUUUGAUGUCUAGAAACCUUGU-5' (SEQ ID NO: 635)

KRAS-3960 Target: 5'-TATGTGAAACTACAGATCTTTGGAACA-3' (SEQ ID NO: 2041)

5'-GUGAAACUACAGAUCUUUGGAACAC-3' (SEQ ID NO: 5637)
3'-UACACUUUGAUGUCUAGAAACCUUGUG-5' (SEQ ID NO: 636)

KRAS-3961 Target: 5'-ATGTGAAACTACAGATCTTTGGAACAC-3' (SEQ ID NO: 2042)

5'-GGUGUUAAGACUUACACAGUACCUC-3' (SEQ ID NO: 5638)
3'-UCCCACAAUUCUGAAUGUGUCAUGGAG-5' (SEQ ID NO: 637)

KRAS-3997 Target: 5'-AGGGTGTTAAGACTTACACAGTACCTC-3' (SEQ ID NO: 2043)

5'-UAGGCCUCUUGAAUUUUUGAUGUAG-3' (SEQ ID NO: 5639)
3'-AAAUCCGGAGAACUUAAAAACUACAUC-5' (SEQ ID NO: 638)

KRAS-4084 Target: 5'-TTTAGGCCTCTTGAATTTTTGATGTAG-3' (SEQ ID NO: 2044)

5'-UUGAAUUUUUGAUGUAGAUGGGCAU-3' (SEQ ID NO: 5640)
3'-AGAACUUAAAAACUACAUCUACCCGUA-5' (SEQ ID NO: 639)

KRAS-4092 Target: 5'-TCTTGAATTTTTGATGTAGATGGGCAT-3' (SEQ ID NO: 2045)

5'-UGAAUUUUUGAUGUAGAUGGGCAUU-3' (SEQ ID NO: 5641)
3'-GAACUUAAAAACUACAUCUACCCGUAA-5' (SEQ ID NO: 640)

KRAS-4093 Target: 5'-CTTGAATTTTTGATGTAGATGGGCATT-3' (SEQ ID NO: 2046)

5'-GAUGGGCAUUUUUUUAAGGUAGUGG-3' (SEQ ID NO: 5642)
3'-AUCUACCCGUAAAAAAAUUCCAUCACC-5' (SEQ ID NO: 641)

KRAS-4108 Target: 5'-TAGATGGGCATTTTTTTAAGGTAGTGG-3' (SEQ ID NO: 2047)

5'-CAUUUUUUUAAGGUAGUGGUUAAUU-3' (SEQ ID NO: 5643)
3'-CCGUAAAAAAAAUUCCAUCACCAAUUAA-5' (SEQ ID NO: 642)

KRAS-4114 Target: 5'-GGCATTTTTTTAAGGTAGTGGTTAATT-3' (SEQ ID NO: 2048)

5'-GUAGUGGUUAAUUACCUUUAUGUGA-3' (SEQ ID NO: 5644)
3'-UCCAUCACCAAUUAAUGGAAAUACACU-5' (SEQ ID NO: 643)

KRAS-4126 Target: 5'-AGGTAGTGGTTAATTACCTTTATGTGA-3' (SEQ ID NO: 2049)

5'-AGUGGUUAAUUACCUUUAUGUGAAC-3' (SEQ ID NO: 5645)
3'-CAUCACCAAUUAAUGGAAAUACACUUG-5' (SEQ ID NO: 644)

KRAS-4128 Target: 5'-GTAGTGGTTAATTACCTTTATGTGAAC-3' (SEQ ID NO: 2050)

5'-GUGGUUAAUUACCUUUAUGUGAACU-3' (SEQ ID NO: 5646)
3'-AUCACCAAUUAAUGGAAAUACACUUGA-5' (SEQ ID NO: 645)

KRAS-4129 Target: 5'-TAGTGGTTAATTACCTTTATGTGAACT-3' (SEQ ID NO: 2051)

5'-UGGUUAAUUACCUUUAUGUGAACUU-3' (SEQ ID NO: 5647)
3'-UCACCAAUUAAUGGAAAUACACUUGAA-5' (SEQ ID NO: 646)

KRAS-4130 Target: 5'-AGTGGTTAATTACCTTTATGTGAACTT-3' (SEQ ID NO: 2052)

5'-GGUUAAUUACCUUUAUGUGAACUUU-3' (SEQ ID NO: 5648)
3'-CACCAAUUAAUGGAAAUACACUUGAAA-5' (SEQ ID NO: 647)

KRAS-4131 Target: 5'-GTGGTTAATTACCTTTATGTGAACTTT-3' (SEQ ID NO: 2053)

5'-CUUUAUGUGAACUUUGAAUGGUUUA-3' (SEQ ID NO: 5649)
3'-UGGAAAUACACUUGAAACUUACCAAAU-5' (SEQ ID NO: 648)

KRAS-4141 Target: 5'-ACCTTTATGTGAACTTTGAATGGTTTA-3' (SEQ ID NO: 2054)

5'-UGUGAACUUUGAAUGGUUUAACAAA-3' (SEQ ID NO: 5650)
3'-AUACACUUGAAACUUACCAAAUUGUUU-5' (SEQ ID NO: 649)

KRAS-4146 Target: 5'-TATGTGAACTTTGAATGGTTTAACAAA-3' (SEQ ID NO: 2055)

5'-CUUUGAAUGGUUUAACAAAAGAUUU-3' (SEQ ID NO: 5651)
3'-UUGAAACUUACCAAAUUGUUUUCUAAA-5' (SEQ ID NO: 650)

KRAS-4152 Target: 5'-AACTTTGAATGGTTTAACAAAAGATTT-3' (SEQ ID NO: 2056)

5'-GAAUGGUUUAACAAAAGAUUUGUUU-3' (SEQ ID NO: 5652)
3'-AACUUACCAAAUUGUUUUCUAAACAAA-5' (SEQ ID NO: 651)

KRAS-4156 Target: 5'-TTGAATGGTTTAACAAAAGATTTGTTT-3' (SEQ ID NO: 2057)

5'-AAUGGUUUAACAAAAGAUUUGUUUU-3' (SEQ ID NO: 5653)
3'-ACUUACCAAAUUGUUUUCUAAACAAAA-5' (SEQ ID NO: 652)

KRAS-4157 Target: 5'-TGAATGGTTTAACAAAAGATTTGTTTT-3' (SEQ ID NO: 2058)

5'-AUGGUUUAACAAAACAUUUGUUUUU-3' (SEQ ID NO: 5654)
3'-CUUACCAAAUUGUUUUCUAAACAAAAA-5' (SEQ ID NO: 653)

KRAS-4158 Target: 5'-GAATGGTTTAACAAAAGATTTGTTTTT-3' (SEQ ID NO: 2059)

5'-UGGUUUAACAAAAGAUUUGUUUUUG-3' (SEQ ID NO: 5655)
3'-UUACCAAAUUGUUUUCUAAACAAAAAC-5' (SEQ ID NO: 654)

KRAS-4159 Target: 5'-AATGGTTTAACAAAAGATTTGTTTTTG-3' (SEQ ID NO: 2060)

5'-GGUUUAACAAAAGAUUUGUUUUUGU-3' (SEQ ID NO: 5656)
3'-UACCAAAUUGUUUUCUAAACAAAAACA-5' (SEQ ID NO: 655)

KRAS-4160 Target: 5'-ATGGTTTAACAAAAGATTTGTTTTTGT-3' (SEQ ID NO: 2061)

5'-UUUAACAAAAGAUUUGUUUUUGUAG-3' (SEQ ID NO: 5657)
3'-CCAAAUUGUUUUCUAAACAAAAACAUC-5' (SEQ ID NO: 656)

KRAS-4162 Target: 5'-GGTTTAACAAAAGATTTGTTTTTGTAG-3' (SEQ ID NO: 2062)

5'-UUAACAAAAGAUUUGUUUUUGUAGA-3' (SEQ ID NO: 5658)
3'-CAAAUUGUUUUCUAAACAAAAACAUCU-5' (SEQ ID NO: 657)

KRAS-4163 Target: 5'-GTTTAACAAAAGATTTGTTTTTGTAGA-3' (SEQ ID NO: 2063)

5'-CAAAAGAUUUGUUUUUGUAGAGAUU-3' (SEQ ID NO: 5659)
3'-UUGUUUUCUAAACAAAAACAUCUCUAA-5' (SEQ ID NO: 658)

KRAS-4167 Target: 5'-AACAAAAGATTTGTTTTTGTAGAGATT-3' (SEQ ID NO: 2064)

5'-AAAAGAUUUGUUUUUGUAGAGAUUU-3' (SEQ ID NO: 5660)
3'-UGUUUUCUAAACAAAAACAUCUCUAAA-5' (SEQ ID NO: 659)

KRAS-4168 Target: 5'-ACAAAAGATTTGTTTTTGTAGAGATTT-3' (SEQ ID NO: 2065)

5'-AAAGAUUUGUUUUUGUAGAGAUUUU-3' (SEQ ID NO: 5661)
3'-GUUUUCUAAACAAAAACAUCUCUAAAA-5' (SEQ ID NO: 660)

KRAS-4169 Target: 5'-CAAAAGATTTGTTTTTGTAGAGATTTT-3' (SEQ ID NO: 2066)

5'-AGAUUUGUUUUUGUAGAGAUUUUAA-3' (SEQ ID NO: 5662)
3'-UUUCUAAACAAAAACAUCUCUAAAAUU-5' (SEQ ID NO: 661)

KRAS-4171 Target: 5'-AAAGATTTGTTTTTGTAGAGATTTTAA-3' (SEQ ID NO: 2067)

5'-GAUUUGUUUUUGUAGAGAUUUUAAA-3' (SEQ ID NO: 5663)
3'-UUCUAAACAAAAACAUCUCUAAAAUUU-5' (SEQ ID NO: 662)

KRAS-4172 Target: 5'-AAGATTTGTTTTTGTAGAGATTTTAAA-3' (SEQ ID NO: 2068)

5'-AUUUGUUUUUGUAGAGAUUUUAAAG-3' (SEQ ID NO: 5664)
3'-UCUAAACAAAAACAUCUCUAAAAUUUC-5' (SEQ ID NO: 663)

KRAS-4173 Target: 5'-AGATTTGTTTTTGTAGAGATTTTAAAG-3' (SEQ ID NO: 2069)

5'-UUUGUUUUUGUAGAGAUUUUAAAGG-3' (SEQ ID NO: 5665)
3'-CUAAACAAAAACAUCUCUAAAAUUUCC-5' (SEQ ID NO: 664)

KRAS-4174 Target: 5'-GATTTGTTTTTGTAGAGATTTTAAAGG-3' (SEQ ID NO: 2070)

5'-UUUGUAGAGAUUUUAAAGGGGGAGA-3' (SEQ ID NO: 5666)
3'-AAAAACAUCUCUAAAAUUUCCCCCUCU-5' (SEQ ID NO: 665)

KRAS-4180 Target: 5'-TTTTTGTAGAGATTTTAAAGGGGGAGA-3' (SEQ ID NO: 2071)

5'-GGGGGAGAAUUCUAGAAAUAAAUGU-3' (SEQ ID NO: 5667)
3'-UUCCCCCUCUUAAGAUCUUUAUUUACA-5' (SEQ ID NO: 666)

KRAS-4197 Target: 5'-AAGGGGGAGAATTCTAGAAATAAATGT-3' (SEQ ID NO: 2072)

5'-GGGAGAAUUCUAGAAAUAAAUGUUA-3' (SEQ ID NO: 5668)
3'-CCCCCUCUUAAGAUCUUUAUUUACAAU-5' (SEQ ID NO: 667)

KRAS-4199 Target: 5'-GGGGGAGAATTCTAGAAATAAATGTTA-3' (SEQ ID NO: 2073)

5'-GGAGAAUUCUAGAAAUAAAUGUUAC-3' (SEQ ID NO: 5669)
3'-CCCCUCUUAAGAUCUUUAUUUACAAUG-5' (SEQ ID NO: 668)

KRAS-4200 Target: 5'-GGGGAGAATTCTAGAAATAAATGTTAC-3' (SEQ ID NO: 2074)

5'-GAGAAUUCUAGAAAUAAAUGUUACC-3' (SEQ ID NO: 5670)
3'-CCCUCUUAAGAUCUUUAUUUACAAUGG-5' (SEQ ID NO: 669)

KRAS-4201 Target: 5'-GGGAGAATTCTAGAAATAAATGTTACC-3' (SEQ ID NO: 2075)

5'-AGAAUUCUAGAAAUAAAUGUUACCU-3' (SEQ ID NO: 5671)
3'-CCUCUUAAGAUCUUUAUUUACAAUGGA-5' (SEQ ID NO: 670)

KRAS-4202 Target: 5'-GGAGAATTCTAGAAATAAATGTTACCT-3' (SEQ ID NO: 2076)

5'-GAAUUCUAGAAAUAAAUGUUACCUA-3' (SEQ ID NO: 5672)
3'-CUCUUAAGAUCUUUAUUUACAAUGGAU-5' (SEQ ID NO: 671)

KRAS-4203 Target: 5'-GAGAATTCTAGAAATAAATGTTACCTA-3' (SEQ ID NO: 2077)

5'-CUAGAAAUAAAUGUUACCUAAUUAU-3' (SEQ ID NO: 5673)
3'-AAGAUCUUUAUUUACAAUGGAUUAAUA-5' (SEQ ID NO: 672)

KRAS-4208 Target: 5'-TTCTAGAAATAAATGTTACCTAATTAT-3' (SEQ ID NO: 2078)

5'-UAGAAAUAAAUGUUACCUAAUUAUU-3' (SEQ ID NO: 5674)
3'-AGAUCUUUAUUUACAAUGGAUUAAUAA-5' (SEQ ID NO: 673)

KRAS-4209 Target: 5'-TCTAGAAATAAATGTTACCTAATTATT-3' (SEQ ID NO: 2079)

5'-AGAAAUAAAUGUUACCUAAUUAUUA-3' (SEQ ID NO: 5675)
3'-GAUCUUUAUUUACAAUGGAUUAAUAAU-5' (SEQ ID NO: 674)

KRAS-4210 Target: 5'-CTAGAAATAAATGTTACCTAATTATTA-3' (SEQ ID NO: 2080)

5'-GAAAUAAAUGUUACCUAAUUAUUAC-3' (SEQ ID NO: 5676)
3'-AUCUUUAUUUACAAUGGAUUAAUAAUG-5' (SEQ ID NO: 675)

KRAS-4211 Target: 5'-TAGAAATAAATGTTACCTAATTATTAC-3' (SEQ ID NO: 2081)

5'-AAAUAAAUGUUACCUAAUUAUUACA-3' (SEQ ID NO: 5677)
3'-UCUUUAUUUACAAUGGAUUAAUAAUGU-5' (SEQ ID NO: 676)

KRAS-4212 Target: 5'-AGAAATAAATGTTACCTAATTATTACA-3' (SEQ ID NO: 2082)

5'-AUAAAUGUUACCUAAUUAUUACAGC-3' (SEQ ID NO: 5678)
3'-UUUAUUUACAAUGGAUUAAUAAUGUCG-5' (SEQ ID NO: 677)

KRAS-4214 Target: 5'-AAATAAATGTTACCTAATTATTACAGC-3' (SEQ ID NO: 2083)

5'-CUAAUUAUUACAGCCUUAAAGACAA-3' (SEQ ID NO: 5679)
3'-UGGAUUAAUAAUGUCGGAAUUUCUGUU-5' (SEQ ID NO: 678)

KRAS-4225 Target: 5'-ACCTAATTATTACAGCCTTAAAGACAA-3' (SEQ ID NO: 2084)

5'-UAAUUAUUACAGCCUUAAAGACAAA-3' (SEQ ID NO: 5680)
3'-GGAUUAAUAAUGUCGGAAUUUCUGUUU-5' (SEQ ID NO: 679)

KRAS-4226 Target: 5'-CCTAATTATTACAGCCTTAAAGACAAA-3' (SEQ ID NO: 2085)

5'-UUAAAGACAAAAAUCCUUGUUGAAG-3' (SEQ ID NO: 5681)
3'-GGAAUUUCUGUUUUUAGGAACAACUUC-5' (SEQ ID NO: 680)

KRAS-4240 Target: 5'-CCTTAAAGACAAAAATCCTTGTTGAAG-3' (SEQ ID NO: 2086)

5'-AAGACAAAAAUCCUUGUUGAAGUUU-3' (SEQ ID NO: 5682)
3'-AUUUCUGUUUUUAGGAACAACUUCAAA-5' (SEQ ID NO: 681)

KRAS-4243 Target: 5'-TAAAGACAAAAATCCTTGTTGAAGTTT-3' (SEQ ID NO: 2087)

5'-CUUGUUGAAGUUUUUUUAAAAAAAG-3' (SEQ ID NO: 5683)
3'-AGGAACAACUUCAAAAAAAAUUUUUUUC-5' (SEQ ID NO: 682)

KRAS-4255 Target: 5'-TCCTTGTTGAAGTTTTTTTAAAAAAAG-3' (SEQ ID NO: 2088)

5'-UUGUUGAAGUUUUUUUAAAAAAAGC-3' (SEQ ID NO: 5684)
3'-GGAACAACUUCAAAAAAAUUUUUUUCG-5' (SEQ ID NO: 683)

KRAS-4256 Target: 5'-CCTTGTTGAAGTTTTTTTAAAAAAAGC-3' (SEQ ID NO: 2089)

5'-GUUGAAGUUUUUUUAAAAAAAGCUA-3' (SEQ ID NO: 5685)
3'-AACAACUUCAAAAAAAUUUUUUUCGAU-5' (SEQ ID NO: 684)

KRAS-4258 Target: 5'-TTGTTGAAGTTTTTTTAAAAAAAGCTA-3' (SEQ ID NO: 2090)

5'-UUGAAGUUUUUUUAAAAAAAGCUAA-3' (SEQ ID NO: 5686)
3'-ACAACUUCAAAAAAAUUUUUUUCGAUU-5' (SEQ ID NO: 685)

KRAS-4259 Target: 5'-TGTTGAAGTTTTTTTAAAAAAAGCTAA-3' (SEQ ID NO: 2091)

5'-AGUUUUUUUAAAAAAAGCUAAAUUA-3' (SEQ ID NO: 5687)
3'-CUUCAAAAAAAUUUUUUUCGAUUUAAU-5' (SEQ ID NO: 686)

KRAS-4263 Target: 5'-GAAGTTTTTTTAAAAAAAGCTAAATTA-3' (SEQ ID NO: 2092)

5'-GUUUUUUUAAAAAAAGCUAAAUUAC-3' (SEQ ID NO: 5688)
3'-UUCAAAAAAAUUUUUUUCGAUUUAAUG-5' (SEQ ID NO: 687)

KRAS-4264 Target: 5'-AAGTTTTTTTAAAAAAAGCTAAATTAC-3' (SEQ ID NO: 2093)

5'-UUUUUUUAAAAAAAGCUAAAUUACA-3' (SEQ ID NO: 5689)
3'-UCAAAAAAAUUUUUUUCGAUUUAAUGU-5' (SEQ ID NO: 688)

KRAS-4265 Target: 5'-AGTTTTTTTAAAAAAAGCTAAATTACA-3' (SEQ ID NO: 2094)

5'-UUUUUUAAAAAAAAGCUAAAUUACAU-3' (SEQ ID NO: 5690)
3'-CAAAAAAAUUUUUUUCGAUUUAAUGUA-5' (SEQ ID NO: 689)

KRAS-4266 Target: 5'-GTTTTTTTAAAAAAAGCTAAATTACAT-3' (SEQ ID NO: 2095)

5'-UUUUUAAAAAAAAGCUAAAUUACAUA-3' (SEQ ID NO: 5691)
3'-AAAAAAAUUUUUUUCGAUUUAAUGUAU-5' (SEQ ID NO: 690)

KRAS-4267 Target: 5'-TTTTTTTAAAAAAAGCTAAATTACATA-3' (SEQ ID NO: 2096)

5'-UAAAAAAAGCUAAAUUACAUAGACU-3' (SEQ ID NO: 5692)
3'-AAAUUUUUUUCGAUUUAAUGUAUCUGA-5' (SEQ ID NO: 691)

KRAS-4271 Target: 5'-TTTAAAAAAAGCTAAATTACATAGACT-3' (SEQ ID NO: 2097)

5'-AAAAAAGCUAAAUUACAUAGACUUA-3' (SEQ ID NO: 5693)
3'-AUUUUUUUCGAUUUAAUGUAUCUGAAU-5' (SEQ ID NO: 692)

KRAS-4273 Target: 5'-TAAAAAAAGCTAAATTACATAGACTTA-3' (SEQ ID NO: 2098)

5'-UUAGGCAUUAACAUGUUUGUGGAAG-3' (SEQ ID NO: 5694)
3'-UGAAUCCGUAAUUGUACAAACACCUUC-5' (SEQ ID NO: 693)

KRAS-4295 Target: 5'-ACTTAGGCATTAACATGTTTGTGGAAG-3' (SEQ ID NO: 2099)

5'-UAGGCAUUAACAUGUUUGUGGAAGA-3' (SEQ ID NO: 5695)
3'-GAAUCCGUAAUUGUACAAACACCUUCU-5' (SEQ ID NO: 694)

KRAS-4296 Target: 5'-CTTAGGCATTAACATGTTTGTGGAAGA-3' (SEQ ID NO: 2100)

5'-CAGACGUAUAUUGUAUCAUUUGAGU-3' (SEQ ID NO: 5696)
3'-UCGUCUGCAUAUAACAUAGUAAACUCA-5' (SEQ ID NO: 695)

KRAS-4327 Target: 5'-AGCAGACGTATATTGTATCATTTGAGT-3' (SEQ ID NO: 2101)

5'-CGUAUAUUGUAUCAUUUGAGUGAAU-3' (SEQ ID NO: 5697)
3'-CUGCAUAUAACAUAGUAAACUCACUUA-5' (SEQ ID NO: 696)

KRAS-4331 Target: 5'-GACGTATATTGTATCATTTGAGTGAAT-3' (SEQ ID NO: 2102)

5'-UAUAUUGUAUCAUUUGAGUGAAUGU-3' (SEQ ID NO: 5698)
3'-GCAUAUAACAUAGUAAACUCACUUACA-5' (SEQ ID NO: 697)

KRAS-4333 Target: 5'-CGTATATTGTATCATTTGAGTGAATGT-3' (SEQ ID NO: 2103)

5'-AUUGUAUCAUUUGAGUGAAUGUUCC-3' (SEQ ID NO: 5699)
3'-UAUAACAUAGUAAACUCACUUACAAGG-5' (SEQ ID NO: 698)

KRAS-4336 Target: 5'-ATATTGTATCATTTGAGTGAATGTTCC-3' (SEQ ID NO: 2104)

5'-UUGUAUCAUUUGAGUGAAUGUUCCC-3' (SEQ ID NO: 5700)
3'-AUAACAUAGUAAACUCACUUACAAGGG-5' (SEQ ID NO: 699)

KRAS-4337 Target: 5'-TATTGTATCATTTGAGTGAATGTTCCC-3' (SEQ ID NO: 2105)

5'-UGUAUCAUUUGAGUGAAUGUUCCCA-3' (SEQ ID NO: 5701)
3'-UAACAUAGUAAACUCACUUACAAGGGU-5' (SEQ ID NO: 700)

KRAS-4338 Target: 5'-ATTGTATCATTTGAGTGAATGTTCCCA-3' (SEQ ID NO: 2106)

5'-AGGAAUUUAGAACCUAACUUUUAUA-3' (SEQ ID NO: 5702)
3'-UAUCCUUAAAUCUUGGAUUGAAAAUAU-5' (SEQ ID NO: 701)

KRAS-4404 Target: 5'-ATAGGAATTTAGAACCTAACTTTTATA-3' (SEQ ID NO: 2107)

5'-GGAAUUUAGAACCUAACUUUUAUAG-3' (SEQ ID NO: 5703)
3'-AUCCUUAAAUCUUGGAUUGAAAAUAUC-5' (SEQ ID NO: 702)

KRAS-4405 Target: 5'-TAGGAATTTAGAACCTAACTTTTATAG-3' (SEQ ID NO: 2108)

5'-UUUAGAACCUAACUUUUAUAGGUUA-3' (SEQ ID NO: 5704)
3'-UUAAAUCUUGGAUUGAAAAUAUCCAAU-5' (SEQ ID NO: 703)

KRAS-4409 Target: 5'-AATTTAGAACCTAACTTTTATAGGTTA-3' (SEQ ID NO: 2109)

5'-UUAGAACCUAACUUUUAUAGGUUAU-3' (SEQ ID NO: 5705)
3'-UAAAUCUUGGAUUGAAAAUAUCCAAUA-5' (SEQ ID NO: 704)

KRAS-4410 Target: 5'-ATTTAGAACCTAACTTTTATAGGTTAT-3' (SEQ ID NO: 2110)

5'-UAGAACCUAACUUUUAUAGGUUAUC-3' (SEQ ID NO: 5706)
3'-AAAUCUUGGAUUGAAAAUAUCCAAUAG-5' (SEQ ID NO: 705)

KRAS-4411 Target: 5'-TTTAGAACCTAACTTTTATAGGTTATC-3' (SEQ ID NO: 2111)

5'-AGAACCUAACUUUUAUAGGUUAUCA-3' (SEQ ID NO: 5707)
3'-AAUCUUGGAUUGAAAAUAUCCAAUAGU-5' (SEQ ID NO: 706)

KRAS-4412 Target: 5'-TTAGAACCTAACTTTTATAGGTTATCA-3' (SEQ ID NO: 2112)

5'-UUAUAGGUUAUCAAAACUGUUGUCA-3' (SEQ ID NO: 5708)
3'-AAAAUAUCCAAUAGUUUUGACAACAGU-5' (SEQ ID NO: 707)

KRAS-4424 Target: 5'-TTTTATAGGTTATCAAAACTGTTGTCA-3' (SEQ ID NO: 2113)

5'-AUAGGUUAUCAAAACUGUUGUCACC-3' (SEQ ID NO: 5709)
3'-AAUAUCCAAUAGUUUUGACAACAGUGG-5' (SEQ ID NO: 708)

KRAS-4426 Target: 5'-TTATAGGTTATCAAAACTGTTGTCACC-3' (SEQ ID NO: 2114)

5'-UUUUGUCCUAAUAUAUACAUAGAAA-3' (SEQ ID NO: 5710)
3'-UUAAAACAGGAUUAUAUAUGUAUCUUU-5' (SEQ ID NO: 709)

KRAS-4460 Target: 5'-AATTTTGTCCTAATATATACATAGAAA-3' (SEQ ID NO: 2115)

5'-UUUGUCCUAAUAUAUACAUAGAAAC-3' (SEQ ID NO: 5711)
3'-UAAAACAGGAUUAUAUAUGUAUCUUUG-5' (SEQ ID NO: 710)

KRAS-4461 Target: 5'-ATTTTGTCCTAATATATACATAGAAAC-3' (SEQ ID NO: 2116)

5'-UUGUCCUAAUAUAUACAUAGAAACU-3' (SEQ ID NO: 5712)
3'-AAAACAGGAUUAUAUAUGUAUCUUUGA-5' (SEQ ID NO: 711)

KRAS-4462 Target: 5'-TTTTGTCCTAATATATACATAGAAACT-3' (SEQ ID NO: 2117)

5'-UAAUAUAUACAUAGAAACUUUGUGG-3' (SEQ ID NO: 5713)
3'-GGAUUAUAUAUGUAUCUUUGAAACACC-5' (SEQ ID NO: 712)

KRAS-4468 Target: 5'-CCTAATATATACATAGAAACTTTGTGG-3' (SEQ ID NO: 2118)

5'-UAUACAUAGAAACUUUGUGGGGCAU-3' (SEQ ID NO: 5714)
3'-AUAUAUGUAUCUUUGAAACACCCCGUA-5' (SEQ ID NO: 713)

KRAS-4473 Target: 5'-TATATACATAGAAACTTTGTGGGGCAT-3' (SEQ ID NO: 2119)

5'-CAAGUUCAUCUCAUUUGUAUUCCAU-3' (SEQ ID NO: 5715)
3'-GUGUUCAAGUAGAGUAAACAUAAGGUA-5' (SEQ ID NO: 714)

KRAS-4516 Target: 5'-CACAAGTTCATCTCATTTGTATTCCAT-3' (SEQ ID NO: 2120)

5'-CAUUUGUAUUCCAUUGAUUUUUUUU-3' (SEQ ID NO: 5716)
3'-GAGUAAACAUAAGGUAACUAAAAAAAA-5' (SEQ ID NO: 715)

KRAS-4527 Target: 5'-CTCATTTGTATTCCATTGATTTTTTT-3' (SEQ ID NO: 2121)

5'-AUUUGUAUUCCAUUGAUUUUUUUUU-3' (SEQ ID NO: 5717)
3'-AGUAAACAUAAGGUAACUAAAAAAAAA-5' (SEQ ID NO: 716)

KRAS-4528 Target: 5'-TCATTTGTATTCCATTGATTTTTTTT-3' (SEQ ID NO: 2122)

5'-UUUGUAUUCCAUUGAUUUUUUUUUU-3' (SEQ ID NO: 5718)
3'-GUAAACAUAAGGUAACUAAAAAAAAAA-5' (SEQ ID NO: 717)

KRAS-4529 Target: 5'-CATTTGTATTCCATTGATTTTTTTTT-3' (SEQ ID NO: 2123)

5'-UUGUAUUCCAUUGAUUUUUUUUUUC-3' (SEQ ID NO: 5719)
3'-UAAACAUAAGGUAACUAAAAAAAAAAG-5' (SEQ ID NO: 718)

KRAS-4530 Target: 5'-ATTTGTATTCCATTGATTTTTTTTTC-3' (SEQ ID NO: 2124)

5'-UGUAUUCCAUUGAUUUUUUUUUUCU-3' (SEQ ID NO: 5720)
3'-AAACAUAAGGUAACUAAAAAAAAAAGA-5' (SEQ ID NO: 719)

KRAS-4531 Target: 5'-TTTGTATTCCATTGATTTTTTTTTTCT-3' (SEQ ID NO: 2125)

5'-GUAUUCCAUUGAUUUUUUUUUUCUU-3' (SEQ ID NO: 5721)
3'-AACAUAAGGUAACUAAAAAAAAAAGAA-5' (SEQ ID NO: 720)

KRAS-4532 Target: 5'-TTGTATTCCATTGATTTTTTTTTTCTT-3' (SEQ ID NO: 2126)

5'-UAUUCCAUUGAUUUUUUUUUUCUUC-3' (SEQ ID NO: 5722)
3'-ACAUAAGGUAACUAAAAAAAAAAGAAG-5' (SEQ ID NO: 721)

KRAS-4533 Target: 5'-TGTATTCCATTGATTTTTTTTTTCTTC-3' (SEQ ID NO: 2127)

5'-UUGAUUUUUUUUUUCUUCUAAACAU-3' (SEQ ID NO: 5723)
3'-GUAACUAAAAAAAAAAGAAGAUUUGUA-5' (SEQ ID NO: 722)

KRAS-4540 Target: 5'-CATTGATTTTTTTTTTCTTCTAAACAT-3' (SEQ ID NO: 2128)

5'-UGAUUUUUUUUUUCUUCUAAACAUU-3' (SEQ ID NO: 5724)
3'-UAACUAAAAAAAAAAGAAGAUUUGUAA-5' (SEQ ID NO: 723)

KRAS-4541 Target: 5'-ATTGATTTTTTTTTTCTTCTAAACATT-3' (SEQ ID NO: 2129)

5'-UUUUUUUUUCUUCUAAACAUUUUUU-3' (SEQ ID NO: 5725)
3'-UAAAAAAAAAAGAAGAUUUGUAAAAAA-5' (SEQ ID NO: 724)

KRAS-4545 Target: 5'-ATTTTTTTTTTCTTCTAAACATTTTTT-3' (SEQ ID NO: 2130)

5'-UUUUUUUUCUUCUAAACAUUUUUUC-3' (SEQ ID NO: 5726)
3'-AAAAAAAAAAGAAGAUUUGUAAAAAAG-5' (SEQ ID NO: 725)

KRAS-4546 Target: 5'-TTTTTTTTTTCTTCTAAACATTTTTTC-3' (SEQ ID NO: 2131)

5'-UUUUUUUCUUCUAAACAUUUUUUCU-3' (SEQ ID NO: 5727)
3'-AAAAAAAAAGAAGAUUUGUAAAAAAGA-5' (SEQ ID NO: 726)

KRAS-4547 Target: 5'-TTTTTTTTTCTTCTAAACATTTTTTCT-3' (SEQ ID NO: 2132)

5'-UUUUUUCUUCUAAACAUUUUUUCUU-3' (SEQ ID NO: 5728)
3'-AAAAAAAAGAAGAUUUGUAAAAAAGAA-5' (SEQ ID NO: 727)

KRAS-4548 Target: 5'-TTTTTTTTCTTCTAAACATTTTTTCTT-3' (SEQ ID NO: 2133)

5'-UUUUUCUUCUAAACAUUUUUUCUUC-3' (SEQ ID NO: 5729)
3'-AAAAAAAGAAGAUUUGUAAAAAAGAAG-5' (SEQ ID NO: 728)

KRAS-4549 Target: 5'-TTTTTTTCTTCTAAACATTTTTTCTTC-3' (SEQ ID NO: 2134)

5'-CAUUUUUUCUUCAAACAGUAUAUAA-3' (SEQ ID NO: 5730)
3'-UUGUAAAAAAAGAAGUUUGUCAUAUAUU-5' (SEQ ID NO: 729)

KRAS-4562 Target: 5'-AACATTTTTTCTTCAAACAGTATATAA-3' (SEQ ID NO: 2135)

5'-AUUUUUUCUUCAAACAGUAUAUAAC-3' (SEQ ID NO: 5731)
3'-UGUAAAAAAAGAAGUUUGUCAUAUAUUG-5' (SEQ ID NO: 730)

KRAS-4563 Target: 5'-ACATTTTTTCTTCAAACAGTATATAAC-3' (SEQ ID NO: 2136)

5'-UUUUUUCUUCAAACAGUAUAUAACU-3' (SEQ ID NO: 5732)
3'-GUAAAAAAAGAAGUUUGUCAUAUAUUGA-5' (SEQ ID NO: 731)

KRAS-4564 Target: 5'-CATTTTTTCTTCAAACAGTATATAACT-3' (SEQ ID NO: 2137)

5'-UUUUUCUUCAAACAGUAUAUAACUU-3' (SEQ ID NO: 5733)
3'-UAAAAAAAGAAGUUUGUCAUAUAUUGAA-5' (SEQ ID NO: 732)

KRAS-4565 Target: 5'-ATTTTTTCTTCAAACAGTATATAACTT-3' (SEQ ID NO: 2138)

5'-UUUUCUUCAAACAGUAUAUAACUUU-3' (SEQ ID NO: 5734)
3'-AAAAAAGAAGUUUGUCAUAUAUUGAAA-5' (SEQ ID NO: 733)

KRAS-4566 Target: 5'-TTTTTTCTTCAAACAGTATATAACTTT-3' (SEQ ID NO: 2139)

5'-CAAACAGUAUAUAACUUUUUUUAGG-3' (SEQ ID NO: 5735)
3'-AAGUUUGUCAUAUAUUGAAAAAAAUCC-5' (SEQ ID NO: 734)

KRAS-4573 Target: 5'-TTCAAACAGTATATAACTTTTTTTAGG-3' (SEQ ID NO: 2140)

5'-AGUAUAUAACUUUUUUUAGGGGAUU-3' (SEQ ID NO: 5736)
3'-UGUCAUAUAUUGAAAAAAAUCCCCUAA-5' (SEQ ID NO: 735)

KRAS-4578 Target: 5'-ACAGTATATAACTTTTTTTAGGGGATT-3' (SEQ ID NO: 2141)

5'-GUAUAUAACUUUUUUUAGGGGAUUU-3' (SEQ ID NO: 5737)
3'-GUCAUAUAUUGAAAAAAAUCCCCUAAA-5' (SEQ ID NO: 736)

KRAS-4579 Target: 5'-CAGTATATAACTTTTTTTAGGGGATTT-3' (SEQ ID NO: 2142)

5'-UAUAUAACUUUUUUUAGGGGAUUUU-3' (SEQ ID NO: 5738)
3'-UCAUAUAUUGAAAAAAAUCCCCUAAAA-5' (SEQ ID NO: 737)

KRAS-4580 Target: 5'-AGTATATAACTTTTTTTAGGGGATTTT-3' (SEQ ID NO: 2143)

5'-AUAUAACUUUUUUUAGGGGAUUUUU-3' (SEQ ID NO: 5739)
3'-CAUAUAUUGAAAAAAAUCCCCUAAAAA-5' (SEQ ID NO: 738)

KRAS-4581 Target: 5'-GTATATAACTTTTTTTAGGGGATTTTT-3' (SEQ ID NO: 2144)

5'-CUUUUUUUAGGGGAUUUUUUUUUAG-3' (SEQ ID NO: 5740)
3'-UUGAAAAAAAAUCCCCUAAAAAAAAAUC-5' (SEQ ID NO: 739)

KRAS-4587 Target: 5'-AACTTTTTTTTAGGGGATTTTTTTTTAG-3' (SEQ ID NO: 2145)

5'-UUUUUUUAGGGGAUUUUUUUUUAGA-3' (SEQ ID NO: 5741)
3'-UGAAAAAAAAUCCCCUAAAAAAAAAUCU-5' (SEQ ID NO: 740)

KRAS-4588 Target: 5'-ACTTTTTTTAGGGGATTTTTTTTTAGA-3' (SEQ ID NO: 2146)

5'-GAUUUUUUUUUAGACAGCAAAAACU-3' (SEQ ID NO: 5742)
3'-CCCUAAAAAAAAAUCUGUCGUUUUUGA-5' (SEQ ID NO: 741)

KRAS-4599 Target: 5'-GGGATTTTTTTTTAGACAGCAAAAACT-3' (SEQ ID NO: 2147)

5'-AUUUUUUUUUAGACAGCAAAAACUA-3' (SEQ ID NO: 5743)
3'-CCUAAAAAAAAAAUCUGUCGUUUUUGAU-5' (SEQ ID NO: 742)

KRAS-4600 Target: 5'-GGATTTTTTTTTAGACAGCAAAAACTA-3' (SEQ ID NO: 2148)

5'-UUUUUUUUUAGACAGCAAAAACUAU-3' (SEQ ID NO: 5744)
3'-CUAAAAAAAAAAUCUGUCGUUUUUGAUA-5' (SEQ ID NO: 743)

KRAS-4601 Target: 5'-GATTTTTTTTTAGACAGCAAAAACTAT-3' (SEQ ID NO: 2149)

5'-AAGAUUUCCAUUUGUCAAAAAGUAA-3' (SEQ ID NO: 5745)
3'-ACUUCUAAAGGUAAACAGUUUUUCAUU-5' (SEQ ID NO: 744)

KRAS-4629 Target: 5'-TGAAGATTTCCATTTGTCAAAAAGTAA-3' (SEQ ID NO: 2150)

5'-AGAUUUCCAUUUGUCAAAAAGUAAU-3' (SEQ ID NO: 5746)
3'-CUUCUAAAGGUAAACAGUUUUUCAUUA-5' (SEQ ID NO: 745)

KRAS-4630 Target: 5'-GAAGATTTCCATTTGTCAAAAAGTAAT-3' (SEQ ID NO: 2151)

5'-GAUUUCCAUUUGUCAAAAAGUAAUG-3' (SEQ ID NO: 5747)
3'-UUCUAAAGGUAAACAGUUUUUCAUUAC-5' (SEQ ID NO: 746)

KRAS-4631 Target: 5'-AAGATTTCCATTTGTCAAAAAGTAATG-3' (SEQ ID NO: 2152)

5'-AUUUCCAUUUGUCAAAAAGUAAUGA-3' (SEQ ID NO: 5748)
3'-UCUAAAGGUAAACAGUUUUUCAUUACU-5' (SEQ ID NO: 747)

KRAS-4632 Target: 5'-AGATTTCCATTTGTCAAAAAGTAATGA-3' (SEQ ID NO: 2153)

5'-CAUUUGUCAAAAAGUAAUGAUUUCU-3' (SEQ ID NO: 5749)
3'-AGGUAAACAGUUUUUCAUUACUAAAGA-5' (SEQ ID NO: 748)

KRAS-4637 Target: 5'-TCCATTTGTCAAAAAGTAATGATTTCT-3' (SEQ ID NO: 2154)

5'-AUUUGUCAAAAAGUAAUGAUUUCUU-3' (SEQ ID NO: 5750)
3'-GGUAAACAGUUUUUCAUUACUAAAGAA-5' (SEQ ID NO: 749)

KRAS-4638 Target: 5'-CCATTTGTCAAAAAGTAATGATTTCTT-3' (SEQ ID NO: 2155)

5'-UUUGUCAAAAAGUAAUGAUUUCUUG-3' (SEQ ID NO: 5751)
3'-GUAAACAGUUUUUCAUUACUAAAGAAC-5' (SEQ ID NO: 750)

KRAS-4639 Target: 5'-CATTTGTCAAAAAGTAATGATTTCTTG-3' (SEQ ID NO: 2156)

5'-CAAAAAGUAAUGAUUUCUUGAUAAU-3' (SEQ ID NO: 5752)
3'-CAGUUUUUCAUUACUAAAGAACUAUUA-5' (SEQ ID NO: 751)

KRAS-4644 Target: 5'-GTCAAAAAGTAATGATTTCTTGATAAT-3' (SEQ ID NO: 2157)

5'-AAAAAGUAAUGAUUUCUUGAUAAUU-3' (SEQ ID NO: 5753)
3'-AGUUUUUCAUUACUAAAGAACUAUUAA-5' (SEQ ID NO: 752)

KRAS-4645 Target: 5'-TCAAAAAGTAATGATTTCTTGATAATT-3' (SEQ ID NO: 2158)

5'-AAAAGUAAUGAUUUCUUGAUAAUUG-3' (SEQ ID NO: 5754)
3'-GUUUUUCAUUACUAAAGAACUAUUAAC-5' (SEQ ID NO: 753)

KRAS-4646 Target: 5'-CAAAAAGTAATGATTTCTTGATAATTG-3' (SEQ ID NO: 2159)

5'-AAAGUAAUGAUUUCUUGAUAAUUGU-3' (SEQ ID NO: 5755)
3'-UUUUUCAUUACUAAAGAACUAUUAACA-5' (SEQ ID NO: 754)

KRAS-4647 Target: 5'-AAAAAGTAATGATTTCTTGATAATTGT-3' (SEQ ID NO: 2160)

5'-AGUAAUGAUUUCUUGAUAAUUGUGU-3' (SEQ ID NO: 5756)
3'-UUUCAUUACUAAAGAACUAUUAACACA-5' (SEQ ID NO: 755)

KRAS-4649 Target: 5'-AAAGTAATGATTTCTTGATAATTGTGT-3' (SEQ ID NO: 2161)

5'-UAAUGAUUUCUUGAUAAUUGUGUAG-3' (SEQ ID NO: 5757)
3'-UCAUUACUAAAGAACUAUUAACACAUC-5' (SEQ ID NO: 756)

KRAS-4651 Target: 5'-AGTAATGATTTCTTGATAATTGTGTAG-3' (SEQ ID NO: 2162)

5'-AAUGAUUUCUUGAUAAUUGUGUAGU-3' (SEQ ID NO: 5758)
3'-CAUUACUAAAGAACUAUUAACACAUCA-5' (SEQ ID NO: 757)

KRAS-4652 Target: 5'-GTAATGATTTCTTGATAATTGTGTAGT-3' (SEQ ID NO: 2163)

5'-UGAUUUCUUGAUAAUUGUGUAGUAA-3' (SEQ ID NO: 5759)
3'-UUACUAAAGAACUAUUAACACAUCAUU-5' (SEQ ID NO: 758)

KRAS-4654 Target: 5'-AATGATTTCTTGATAATTGTGTAGTAA-3' (SEQ ID NO: 2164)

5'-GAUUUCUUGAUAAUUGUGUAGUAAU-3' (SEQ ID NO: 5760)
3'-UACUAAAGAACUAUUAACACAUCAUUA-5' (SEQ ID NO: 759)

KRAS-4655 Target: 5'-ATGATTTCTTGATAATTGTGTAGTAAT-3' (SEQ ID NO: 2165)

5'-CUUGAUAAUUGUGUAGUAAUGUUUU-3' (SEQ ID NO: 5761)
3'-AAGAACUAUUAACACAUCAUUACAAAA-5' (SEQ ID NO: 760)

KRAS-4660 Target: 5'-TTCTTGATAATTGTGTAGTAATGTTTT-3' (SEQ ID NO: 2166)

5'-UUGAUAAUUGUGUAGUAAUGUUUUU-3' (SEQ ID NO: 5762)
3'-AGAACUAUUAACACAUCAUUACAAAAA-5' (SEQ ID NO: 761)

KRAS-4661 Target: 5'-TCTTGATAATTGTGTAGTAATGTTTTT-3' (SEQ ID NO: 2167)

5'-UGAUAAUUGUGUAGUAAUGUUUUUU-3' (SEQ ID NO: 5763)
3'-GAACUAUUAACACAUCAUUACAAAAAA-5' (SEQ ID NO: 762)

KRAS-4662 Target: 5'-CTTGATAATTGTGTAGTAATGTTTTTT-3' (SEQ ID NO: 2168)

5'-AUAAUUGUGUAGUAAUGUUUUUUAG-3' (SEQ ID NO: 5764)
3'-ACUAUUAACACAUCAUUACAAAAAAUC-5' (SEQ ID NO: 763)

KRAS-4664 Target: 5'-TGATAATTGTGTAGTAATGTTTTTTAG-3' (SEQ ID NO: 2169)

5'-AUUGUGUAGUAAUGUUUUUUAGAAC-3' (SEQ ID NO: 5765)
3'-AUUAACACAUCAUUACAAAAAAUCUUG-5' (SEQ ID NO: 764)

KRAS-4667 Target: 5'-TAATTGTGTAGTAATGTTTTTTAGAAC-3' (SEQ ID NO: 2170)

5'-UGUGUAGUAAUGUUUUUUAGAACCC-3' (SEQ ID NO: 5766)
3'-UAACACAUCAUUACAAAAAAUCUUGGG-5' (SEQ ID NO: 765)

KRAS-4669 Target: 5'-ATTGTGTAGTAATGTTTTTTAGAACCC-3' (SEQ ID NO: 2171)

5'-GUGUAGUAAUGUUUUUUAGAACCCA-3' (SEQ ID NO: 5767)
3'-AACACAUCAUUACAAAAAAUCUUGGGU-5' (SEQ ID NO: 766)

KRAS-4670 Target: 5'-TTGTGTAGTAATGTTTTTTAGAACCCA-3' (SEQ ID NO: 2172)

5'-UUAAAGCUGAAUUUAUAUUUAGUAA-3' (SEQ ID NO: 5768)
3'-GGAAUUUCGACUUAAAUAUAAAUCAUU-5' (SEQ ID NO: 767)

KRAS-4704 Target: 5'-CCTTAAAGCTGAATTTATATTTAGTAA-3' (SEQ ID NO: 2173)

5'-AAAGCUGAAUUUAUAUUUAGUAACU-3' (SEQ ID NO: 5769)
3'-AAUUUCGACUUAAAUAUAAAUCAUUGA-5' (SEQ ID NO: 768)

KRAS-4706 Target: 5'-TTAAAGCTGAATTTATATTTAGTAACT-3' (SEQ ID NO: 2174)

5'-UUUAUAUUUAGUAACUUCUGUGUUA-3' (SEQ ID NO: 5770)
3'-UUAAAUAUAAAUCAUUGAAGACACAAU-5' (SEQ ID NO: 769)

KRAS-4715 Target: 5'-AATTTATATTTAGTAACTTCTGTGTTA-3' (SEQ ID NO: 2175)

5'-UUAUAUUUAGUAACUUCUGUGUUAA-3' (SEQ ID NO: 5771)
3'-UAAAUAUAAAUCAUUGAAGACACAAUU-5' (SEQ ID NO: 770)

KRAS-4716 Target: 5'-ATTTATATTTAGTAACTTCTGTGTTAA-3' (SEQ ID NO: 2176)

5'-UAUAUUUAGUAACUUCUGUGUUAAU-3' (SEQ ID NO: 5772)
3'-AAAUAUAAAUCAUUGAAGACACAAUUA-5' (SEQ ID NO: 771)

KRAS-4717 Target: 5'-TTTATATTTAGTAACTTCTGTGTTAAT-3' (SEQ ID NO: 2177)

5'-UUAGUAACUUCUGUGUUAAUACUGG-3' (SEQ ID NO: 5773)
3'-UAAAUCAUUGAAGACACAAUUAUGACC-5' (SEQ ID NO: 772)

KRAS-4722 Target: 5'-ATTTAGTAACTTCTGTGTTAATACTGG-3' (SEQ ID NO: 2178)

5'-UGAAUAGCUGUCAUAAAAUGAAACU-3' (SEQ ID NO: 5774)
3'-UGACUUAUCGACAGUAUUUUACUUUGA-5' (SEQ ID NO: 773)

KRAS-4773 Target: 5'-ACTGAATAGCTGTCATAAAATGAAACT-3' (SEQ ID NO: 2179)

5'-GAAUAGCUGUCAUAAAAUGAAACUU-3' (SEQ ID NO: 5775)
3'-GACUUAUCGACAGUAUUUUACUUUGAA-5' (SEQ ID NO: 774)

KRAS-4774 Target: 5'-CTGAATAGCTGTCATAAAATGAAACTT-3' (SEQ ID NO: 2180)

5'-AAAUGAAACUUUCUUUCUAAAGAAA-3' (SEQ ID NO: 5776)
3'-AUUUUACUUUGAAAGAAAGAUUUCUUU-5' (SEQ ID NO: 775)

KRAS-4788 Target: 5'-TAAAATGAAACTTTCTTTCTAAAGAAA-3' (SEQ ID NO: 2181)

5'-AAUGAAACUUUCUUUCUAAAGAAAG-3' (SEQ ID NO: 5777)
3'-UUUUACUUUGAAAGAAAGAUUUCUUUC-5' (SEQ ID NO: 776)

KRAS-4789 Target: 5'-AAAATGAAACTTTCTTTCTAAAGAAAG-3' (SEQ ID NO: 2182)

5'-AUGAAACUUUCUUUCUAAAGAAAGA-3' (SEQ ID NO: 5778)
3'-UUUACUUUGAAAGAAAGAUUUCUUUCU-5' (SEQ ID NO: 777)

KRAS-4790 Target: 5'-AAATGAAACTTTCTTTCTAAAGAAAGA-3' (SEQ ID NO: 2183)

5'-GAAACUUUCUUUCUAAAGAAAGAUA-3' (SEQ ID NO: 5779)
3'-UACUUUGAAAGAAAGAUUUCUUUCUAU-5' (SEQ ID NO: 778)

KRAS-4792 Target: 5'-ATGAAACTTTCTTTCTAAAGAAAGATA-3' (SEQ ID NO: 2184)

5'-CUUUCUUUCUAAAGAAAGAUACUCA-3' (SEQ ID NO: 5780)
3'-UUGAAAGAAAGAUUUCUUUCUAUGAGU-5' (SEQ ID NO: 779)

KRAS-4796 Target: 5'-AACTTTCTTTCTAAAGAAAGATACTCA-3' (SEQ ID NO: 2185)

5'-CAUGAGUUCUUGAAGAAUAGUCAUA-3' (SEQ ID NO: 5781)
3'-GUGUACUCAAGAACUUCUUAUCAGUAU-5' (SEQ ID NO: 780)

KRAS-4821 Target: 5'-CACATGAGTTCTTGAAGAATAGTCATA-3' (SEQ ID NO: 2186)

5'-UUGAAGAAUAGUCAUAACUAGAUUA-3' (SEQ ID NO: 5782)
3'-AGAACUUCUUAUCAGUAUUGAUCUAAU-5' (SEQ ID NO: 781)

KRAS-4830 Target: 5'-TCTTGAAGAATAGTCATAACTAGATTA-3' (SEQ ID NO: 2187)

5'-UGAAGAAUAGUCAUAACUAGAUUAA-3' (SEQ ID NO: 5783)
3'-GAACUUCUUAUCAGUAUUGAUCUAAUU-5' (SEQ ID NO: 782)

KRAS-4831 Target: 5'-CTTGAAGAATAGTCATAACTAGATTAA-3' (SEQ ID NO: 2188)

5'-GAAGAAUAGUCAUAACUAGAUUAAG-3' (SEQ ID NO: 5784)
3'-AACUUCUUAUCAGUAUUGAUCUAAUUC-5' (SEQ ID NO: 783)

KRAS-4832 Target: 5'-TTGAAGAATAGTCATAACTAGATTAAG-3' (SEQ ID NO: 2189)

5'-GAAUAGUCAUAACUAGAUUAAGAUC-3' (SEQ ID NO: 5785)
3'-UUCUUAUCAGUAUUGAUCUAAUUCUAG-5' (SEQ ID NO: 784)

KRAS-4835 Target: 5'-AAGAATAGTCATAACTAGATTAAGATC-3' (SEQ ID NO: 2190)

5'-AAUAGUCAUAACUAGAUUAAGAUCU-3' (SEQ ID NO: 5786)
3'-UCUUAUCAGUAUUGAUCUAAUUCUAGA-5' (SEQ ID NO: 785)

KRAS-4836 Target: 5'-AGAATAGTCATAACTAGATTAAGATCT-3' (SEQ ID NO: 2191)

5'-AUAGUCAUAACUAGAUUAAGAUCUG-3' (SEQ ID NO: 5787)
3'-CUUAUCAGUAUUGAUCUAAUUCUAGAC-5' (SEQ ID NO: 786)

KRAS-4837 Target: 5'-GAATAGTCATAACTAGATTAAGATCTG-3' (SEQ ID NO: 2192)

5'-UAGUCAUAACUAGAUUAAGAUCUGU-3' (SEQ ID NO: 5788)
3'-UUAUCAGUAUUGAUCUAAUUCUAGACA-5' (SEQ ID NO: 787)

KRAS-4838 Target: 5'-AATAGTCATAACTAGATTAAGATCTGT-3' (SEQ ID NO: 2193)

5'-CAUAACUAGAUUAAGAUCUGUGUUU-3' (SEQ ID NO: 5789)
3'-CAGUAUUGAUCUAAUUCUAGACACAAA-5' (SEQ ID NO: 788)

KRAS-4842 Target: 5'-GTCATAACTAGATTAAGATCTGTGTTT-3' (SEQ ID NO: 2194)

5'-UAGAUUAAGAUCUGUGUUUUAGUUU-3' (SEQ ID NO: 5790)
3'-UGAUCUAAUUCUAGACACAAAAUCAAA-5' (SEQ ID NO: 789)

KRAS-4848 Target: 5'-ACTAGATTAAGATCTGTGTTTTAGTTT-3' (SEQ ID NO: 2195)

5'-GAUUAAGAUCUGUGUUUUAGUUUAA-3' (SEQ ID NO: 5791)
3'-AUCUAAUUCUAGACACAAAAUCAAAUU-5' (SEQ ID NO: 790)

KRAS-4850 Target: 5'-TAGATTAAGATCTGTGTTTTAGTTTAA-3' (SEQ ID NO: 2196)

5'-AUUAAGAUCUGUGUUUUAGUUUAAU-3' (SEQ ID NO: 5792)
3'-UCUAAUUCUAGACACAAAAUCAAAUUA-5' (SEQ ID NO: 791)

KRAS-4851 Target: 5'-AGATTAAGATCTGTGTTTTAGTTTAAT-3' (SEQ ID NO: 2197)

5'-UAAGAUCUGUGUUUUAGUUUAAUAG-3' (SEQ ID NO: 5793)
3'-UAAUUCUAGACACAAAAUCAAAUUAUC-5' (SEQ ID NO: 792)

KRAS-4853 Target: 5'-ATTAAGATCTGTGTTTTAGTTTAATAG-3' (SEQ ID NO: 2198)

5'-UGUGUUUUAGUUUAAUAGUUUGAAG-3' (SEQ ID NO: 5794)
3'-AGACACAAAAUCAAAUUAUCAAACUUC-5' (SEQ ID NO: 793)

KRAS-4860 Target: 5'-TCTGTGTTTTAGTTTAATAGTTTGAAG-3' (SEQ ID NO: 2199)

5'-GUGUUUUAGUUUAAUAGUUUGAAGU-3' (SEQ ID NO: 5795)
3'-GACACAAAAUCAAAUUAUCAAACUUCA-5' (SEQ ID NO: 794)

KRAS-4861 Target: 5'-CTGTGTTTTAGTTTAATAGTTTGAAGT-3' (SEQ ID NO: 2200)

5'-GUUUUAGUUUAAUAGUUUGAAGUGC-3' (SEQ ID NO: 5796)
3'-CACAAAAUCAAAUUAUCAAACUUCACG-5' (SEQ ID NO: 795)

KRAS-4863 Target: 5'-GTGTTTTAGTTTAATAGTTTGAAGTGC-3' (SEQ ID NO: 2201)

5'-UUUAGUUUAAUAGUUUGAAGUGCCU-3' (SEQ ID NO: 5797)
3'-CAAAAUCAAAUUAUCAAACUUCACGGA-5' (SEQ ID NO: 796)

KRAS-4865 Target: 5'-GTTTTAGTTTAATAGTTTGAAGTGCCT-3' (SEQ ID NO: 2202)

5'-UUAGUUUAAUAGUUUGAAGUGCCUG-3' (SEQ ID NO: 5798)
3'-AAAAUCAAAUUAUCAAACUUCACGGAC-5' (SEQ ID NO: 797)

KRAS-4866 Target: 5'-TTTTAGTTTAATAGTTTGAAGTGCCTG-3' (SEQ ID NO: 2203)

5'-UUGGGAUAAUGAUAGGUAAUUUAGA-3' (SEQ ID NO: 5799)
3'-CAAACCCUAUUACUAUCCAUUAAAUCU-5' (SEQ ID NO: 798)

KRAS-4892 Target: 5'-GTTTGGGATAATGATAGGTAATTTAGA-3' (SEQ ID NO: 2204)

5'-GGGAUAAUGAUAGGUAAUUUAGAUG-3' (SEQ ID NO: 5800)
3'-AACCCUAUUACUAUCCAUUAAAUCUAC-5' (SEQ ID NO: 799)

KRAS-4894 Target: 5'-TTGGGATAATGATAGGTAATTTAGATG-3' (SEQ ID NO: 2205)

5'-AUAAUGAUAGGUAAUUUAGAUGAAU-3' (SEQ ID NO: 5801)
3'-CCUAUUACUAUCCAUUAAAUCUACUUA-5' (SEQ ID NO: 800)

KRAS-4897 Target: 5'-GGATAATGATAGGTAATTTAGATGAAT-3' (SEQ ID NO: 2206)

5'-UAAUGAUAGGUAAUUUAGAUGAAUU-3' (SEQ ID NO: 5802)
3'-CUAUUACUAUCCAUUAAAUCUACUUAA-5' (SEQ ID NO: 801)

KRAS-4898 Target: 5'-GATAATGATAGGTAATTTAGATGAATT-3' (SEQ ID NO: 2207)

5'-UGAUAGGUAAUUUAGAUGAAUUUAG-3' (SEQ ID NO: 5803)
3'-UUACUAUCCAUUAAAUCUACUUAAAUC-5' (SEQ ID NO: 802)

KRAS-4901 Target: 5'-AATGATAGGTAATTTAGATGAATTTAG-3' (SEQ ID NO: 2208)

5'-GAUAGGUAAUUUAGAUGAAUUUAGG-3' (SEQ ID NO: 5804)
3'-UACUAUCCAUUAAAUCUACUUAAAUCC-5' (SEQ ID NO: 803)

KRAS-4902 Target: 5'-ATGATAGGTAATTTAGATGAATTTAGG-3' (SEQ ID NO: 2209)

5'-GUAAUUUAGAUGAAUUUAGGGGAAA-3' (SEQ ID NO: 5805)
3'-UCCAUUAAAUCUACUUAAAUCCCCUUU-5' (SEQ ID NO: 804)

KRAS-4907 Target: 5'-AGGTAATTTAGATGAATTTAGGGGAAA-3' (SEQ ID NO: 2210)

5'-AAUUUAGAUGAAUUUAGGGGAAAAA-3' (SEQ ID NO: 5806)
3'-CAUUAAAUCUACUUAAAUCCCCUUUUU-5' (SEQ ID NO: 805)

KRAS-4909 Target: 5'-GTAATTTAGATGAATTTAGGGGAAAAA-3' (SEQ ID NO: 2211)

5'-AUGAAUUUAGGGGAAAAAAAAAGUUA-3' (SEQ ID NO: 5807)
3'-UCUACUUAAAUCCCCUUUUUUUUCAAU-5' (SEQ ID NO: 806)

KRAS-4916 Target: 5'-AGATGAATTTAGGGGAAAAAAAAGTTA-3' (SEQ ID NO: 2212)

5'-UGAAUUUAGGGGAAAAAAAAGUUAU-3' (SEQ ID NO: 5808)
3'-CUACUUAAAUCCCCUUUUUUUUCAAUA-5' (SEQ ID NO: 807)

KRAS-4917 Target: 5'-GATGAATTTAGGGGAAAAAAAAGTTAT-3' (SEQ ID NO: 2213)

5'-GAAAAAAAAGUUAUCUGCAGAUAUG-3' (SEQ ID NO: 5809)
3'-CCCUUUUUUUUCAAUAGACGUCUAUAC-5' (SEQ ID NO: 808)

KRAS-4928 Target: 5'-GGGAAAAAAAAGTTATCTGCAGATATG-3' (SEQ ID NO: 2214)

5'-AAAAAAAAGUUAUCUGCAGAUAUGU-3' (SEQ ID NO: 5810)
3'-CCUUUUUUUUCAAUAGACGUCUAUACA-5' (SEQ ID NO: 809)

KRAS-4929 Target: 5'-GGAAAAAAAAGTTATCTGCAGATATGT-3' (SEQ ID NO: 2215)

5'-AAAGUUAUCUGCAGAUAUGUUGAGG-3' (SEQ ID NO: 5811)
3'-UUUUUCAAUAGACGUCUAUACAACUCC-5' (SEQ ID NO: 810)

KRAS-4934 Target: 5'-AAAAAGTTATCTGCAGATATGTTGAGG-3' (SEQ ID NO: 2216)

5'-CUUGUGUUUUCAUGUUGAAAAUACU-3' (SEQ ID NO: 5812)
3'-CAGAACACAAAAGUACAACUUUUAUGA-5' (SEQ ID NO: 811)

KRAS-5035 Target: 5'-GTCTTGTGTTTTCATGTTGAAAATACT-3' (SEQ ID NO: 2217)

5'-UUGUGUUUUCAUGUUGAAAAUACUU-3' (SEQ ID NO: 5813)
3'-AGAACACAAAAGUACAACUUUUAUGAA-5' (SEQ ID NO: 812)

KRAS-5036 Target: 5'-TCTTGTGTTTTCATGTTGAAAATACTT-3' (SEQ ID NO: 2218)

5'-UGUGUUUUCAUGUUGAAAAUACUUU-3' (SEQ ID NO: 5814)
3'-GAACACAAAAGUACAACUUUUAUGAAA-5' (SEQ ID NO: 813)

KRAS-5037 Target: 5'-CTTGTGTTTTCATGTTGAAAATACTTT-3' (SEQ ID NO: 2219)

5'-UGUUGAAAAUACUUUUGCAUUUUUC-3' (SEQ ID NO: 5815)
3'-GUACAACUUUUAUGAAAACGUAAAAAG-5' (SEQ ID NO: 814)

KRAS-5047 Target: 5'-CATGTTGAAAATACTTTTGCATTTTTC-3' (SEQ ID NO: 2220)

5'-GUUGAAAAUACUUUUGCAUUUUUCC-3' (SEQ ID NO: 5816)
3'-UACAACUUUUAUGAAAACGUAAAAAGG-5' (SEQ ID NO: 815)

KRAS-5048 Target: 5'-ATGTTGAAAATACTTTTGCATTTTTCC-3' (SEQ ID NO: 2221)

5'-UUGAAAAUACUUUUGCAUUUUUCCU-3' (SEQ ID NO: 5817)
3'-ACAACUUUUAUGAAAACGUAAAAAGGA-5' (SEQ ID NO: 816)

KRAS-5049 Target: 5'-TGTTGAAAATACTTTTGCATTTTTCCT-3' (SEQ ID NO: 2222)

5'-UGAAAAUACUUUUGCAUUUUUCCUU-3' (SEQ ID NO: 5818)
3'-CAACUUUUAUGAAAACGUAAAAAGGAA-5' (SEQ ID NO: 817)

KRAS-5050 Target: 5'-GTTGAAAATACTTTTGCATTTTTCCTT-3' (SEQ ID NO: 2223)

5'-UUUGCAUUUUUCCUUUGAGUGCCAA-3' (SEQ ID NO: 5819)
3'-GAAAACGUAAAAAGGAAACUCACGGUU-5' (SEQ ID NO: 818)

KRAS-5060 Target: 5'-CTTTTGCATTTTTCCTTTGAGTGCCAA-3' (SEQ ID NO: 2224)

5'-AGUGCCAAUUUCUUACUAGUACUAU-3' (SEQ ID NO: 5820)
3'-ACUCACGGUUAAAGAAUGAUCAUGAUA-5' (SEQ ID NO: 819)

KRAS-5077 Target: 5'-TGAGTGCCAATTTCTTACTAGTACTAT-3' (SEQ ID NO: 2225)

5'-CAAUUUCUUACUAGUACUAUUUCUU-3' (SEQ ID NO: 5821)
3'-CGGUUAAAGAAUGAUCAUGAUAAAGAA-5' (SEQ ID NO: 820)

KRAS-5082 Target: 5'-GCCAATTTCTTACTAGTACTATTTCTT-3' (SEQ ID NO: 2226)

5'-AAUUUCUUACUAGUACUAUUUCUUA-3' (SEQ ID NO: 5822)
3'-GGUUAAAGAAUGAUCAUGAUAAAGAAU-5' (SEQ ID NO: 821)

KRAS-5083 Target: 5'-CCAATTTCTTACTAGTACTATTTCTTA-3' (SEQ ID NO: 2227)

5'-CUAGUACUAUUUCUUAAUGUAACAU-3' (SEQ ID NO: 5823)
3'-AUGAUCAUGAUAAAGAAUUACAUUGUA-5' (SEQ ID NO: 822)

KRAS-5092 Target: 5'-TACTAGTACTATTTCTTAATGTAACAT-3' (SEQ ID NO: 2228)

5'-UAGUACUAUUUCUUAAUGUAACAUG-3' (SEQ ID NO: 5824)
3'-UGAUCAUGAUAAAGAAUUACAUUGUAC-5' (SEQ ID NO: 823)

KRAS-5093 Target: 5'-ACTAGTACTATTTCTTAATGTAACATG-3' (SEQ ID NO: 2229)

5'-CUAUUUCUUAAUGUAACAUGUUUAC-3' (SEQ ID NO: 5825)
3'-AUGAUAAAGAAUUACAUUGUACAAAUG-5' (SEQ ID NO: 824)

KRAS-5098 Target: 5'-TACTATTTCTTAATGTAACATGTTTAC-3' (SEQ ID NO: 2230)

5'-UAUUUCUUAAUGUAACAUGUUUACC-3' (SEQ ID NO: 5826)
3'-UGAUAAAGAAUUACAUUGUACAAAUGG-5' (SEQ ID NO: 825)

KRAS-5099 Target: 5'-ACTATTTCTTAATGTAACATGTTTACC-3' (SEQ ID NO: 2231)

5'-AUUUCUUAAUGUAACAUGUUUACCU-3' (SEQ ID NO: 5827)
3'-GAUAAAGAAUUACAUUGUACAAAUGGA-5' (SEQ ID NO: 826)

KRAS-5100 Target: 5'-CTATTTCTTAATGTAACATGTTTACCT-3' (SEQ ID NO: 2232)

5'-AAUGUAACAUGUUUACCUGGAAUGU-3' (SEQ ID NO: 5828)
3'-AAUUACAUUGUACAAAUGGACCUUACA-5' (SEQ ID NO: 827)

KRAS-5107 Target: 5'-TTAATGTAACATGTTTACCTGGAATGT-3' (SEQ ID NO: 2233)

5'-UGGAAUGUAUUUUAACUAUUUUUGU-3' (SEQ ID NO: 5829)
3'-GGACCUUACAUAAAAAUUGAUAAAAACA-5' (SEQ ID NO: 828)

KRAS-5124 Target: 5'-CCTGGAATGTATTTTAACTATTTTTGT-3' (SEQ ID NO: 2234)

5'-GAAUGUAUUUUAACUAUUUUUGUAU-3' (SEQ ID NO: 5830)
3'-ACCUUACAUAAAAAUUGAUAAAAACAUA-5' (SEQ ID NO: 829)

KRAS-5126 Target: 5'-TGGAATGTATTTTAACTATTTTTGTAT-3' (SEQ ID NO: 2235)

5'-AAUGUAUUUUAACUAUUUUUGUAUA-3' (SEQ ID NO: 5831)
3'-CCUUACAUAAAAAUUGAUAAAAACAUAU-5' (SEQ ID NO: 830)

KRAS-5127 Target: 5'-GGAATGTATTTTAACTATTTTTGTATA-3' (SEQ ID NO: 2236)

5'-AUGUAUUUUAACUAUUUUUGUAUAG-3' (SEQ ID NO: 5832)
3'-CUUACAUAAAAAUUGAUAAAAACAUAUC-5' (SEQ ID NO: 831)

KRAS-5128 Target: 5'-GAATGTATTTTAACTATTTTTGTATAG-3' (SEQ ID NO: 2237)

5'-UGUAUUUUAACUAUUUUUGUAUAGU-3' (SEQ ID NO: 5833)
3'-UUACAUAAAAAUUGAUAAAAACAUAUCA-5' (SEQ ID NO: 832)

KRAS-5129 Target: 5'-AATGTATTTTAACTATTTTTGTATAGT-3' (SEQ ID NO: 2238)

5'-UAUUUUAACUAUUUUUGUAUAGUGU-3' (SEQ ID NO: 5834)
3'-ACAUAAAAAUUGAUAAAAACAUAUCACA-5' (SEQ ID NO: 833)

KRAS-5131 Target: 5'-TGTATTTTAACTATTTTTGTATAGTGT-3' (SEQ ID NO: 2239)

5'-UUUUAACUAUUUUUGUAUAGUGUAA-3' (SEQ ID NO: 5835)
3'-AUAAAAAUUGAUAAAAACAUAUCACAUU-5' (SEQ ID NO: 834)

KRAS-5133 Target: 5'-TATTTTAACTATTTTTGTATAGTGTAA-3' (SEQ ID NO: 2240)

5'-UUUAACUAUUUUUGUAUAGUGUAAA-3' (SEQ ID NO: 5836)
3'-UAAAAUUGAUAAAAACAUAUCACAUUU-5' (SEQ ID NO: 835)

KRAS-5134 Target: 5'-ATTTTAACTATTTTTGTATAGTGTAAA-3' (SEQ ID NO: 2241)

5'-UUAACUAUUUUUGUAUAGUGUAAAC-3' (SEQ ID NO: 5837)
3'-AAAAUUGAUAAAAACAUAUCACAUUUG-5' (SEQ ID NO: 836)

KRAS-5135 Target: 5'-TTTTAACTATTTTTGTATAGTGTAAAC-3' (SEQ ID NO: 2242)

5'-UUUUUGUAUAGUGUAAACUGAAACA-3' (SEQ ID NO: 5838)
3'-AUAAAAACAUAUCACAUUUGACUUUGU-5' (SEQ ID NO: 837)

KRAS-5142 Target: 5'-TATTTTTGTATAGTGTAAACTGAAACA-3' (SEQ ID NO: 2243)

5'-UUUUGUAUAGUGUAAACUGAAACAU-3' (SEQ ID NO: 5839)
3'-UAAAAACAUAUCACAUUUGACUUUGUA-5' (SEQ ID NO: 838)

KRAS-5143 Target: 5'-ATTTTTGTATAGTGTAAACTGAAACAT-3' (SEQ ID NO: 2244)

5'-UUUGUAUAGUGUAAACUGAAACAUG-3' (SEQ ID NO: 5840)
3'-AAAAACAUAUCACAUUUGACUUUGUAC-5' (SEQ ID NO: 839)

KRAS-5144 Target: 5'-TTTTTGTATAGTGTAAACTGAAACATG-3' (SEQ ID NO: 2245)

5'-CUGAAACAUGCACAUUUUGUACAUU-3' (SEQ ID NO: 5841)
3'-UUGACUUUGUACGUGUAAAACAUGUAA-5' (SEQ ID NO: 840)

KRAS-5159 Target: 5'-AACTGAAACATGCACATTTTGTACATT-3' (SEQ ID NO: 2246)

5'-CAUGCACAUUUUGUACAUUGUGCUU-3' (SEQ ID NO: 5842)
3'-UUGUACGUGUAAAACAUGUAACACGAA-5' (SEQ ID NO: 841)

KRAS-5165 Target: 5'-AACATGCACATTTTGTACATTGTGCTT-3' (SEQ ID NO: 2247)

5'-CAGUUGUUUUCCAUCAUUUGGUUGC-3' (SEQ ID NO: 5843)
3'-AGGUCAACAAAAGGUAGUAAACCAACG-5' (SEQ ID NO: 842)

KRAS-5218 Target: 5'-TCCAGTTGTTTTCCATCATTTGGTTGC-3' (SEQ ID NO: 2248)

5'-GUUGUUUUCCAUCAUUUGGUUGCGC-3' (SEQ ID NO: 5844)
3'-GUCAACAAAAGGUAGUAAACCAACGCG-5' (SEQ ID NO: 843)

KRAS-5220 Target: 5'-CAGTTGTTTTCCATCATTTGGTTGCGC-3' (SEQ ID NO: 2249)

5'-GUUGGUCAUAUCAAACAUUAAAAAU-3' (SEQ ID NO: 5845)
3'-UACAACCAGUAUAGUUUGUAAUUUUUA-5' (SEQ ID NO: 844)

KRAS-5257 Target: 5'-ATGTTGGTCATATCAAACATTAAAAAT-3' (SEQ ID NO: 2250)

5'-UUGGUCAUAUCAAACAUUAAAAAUG-3' (SEQ ID NO: 5846)
3'-ACAACCAGUAUAGUUUGUAAUUUUUAC-5' (SEQ ID NO: 845)

KRAS-5258 Target: 5'-TGTTGGTCATATCAAACATTAAAAATG-3' (SEQ ID NO: 2251)

5'-UGGUCAUAUCAAACAUUAAAAAUGA-3' (SEQ ID NO: 5847)
3'-CAACCAGUAUAGUUUGUAAUUUUUACU-5' (SEQ ID NO: 846)

KRAS-5259 Target: 5'-GTTGGTCATATCAAACATTAAAAATGA-3' (SEQ ID NO: 2252)

5'-CAUAUCAAACAUUAAAAAUGACCAC-3' (SEQ ID NO: 5848)
3'-CAGUAUAGUUUGUAAUUUUUACUGGUG-5' (SEQ ID NO: 847)

KRAS-5263 Target: 5'-GTCATATCAAACATTAAAAATGACCAC-3' (SEQ ID NO: 2253)

5'-AAUGACCACUCUUUUAAUUGAAAUU-3' (SEQ ID NO: 5849)
3'-UUUUACUGGUGAGAAAAUUAACUUUAA-5' (SEQ ID NO: 848)

KRAS-5279 Target: 5'-AAAATGACCACTCTTTTAATTGAAATT-3' (SEQ ID NO: 2254)

5'-AUGACCACUCUUUUAAUUGAAAUUA-3' (SEQ ID NO: 5850)
3'-UUUACUGGUGAGAAAAUUAACUUUAAU-5' (SEQ ID NO: 849)

KRAS-5280 Target: 5'-AAATGACCACTCTTTTAATTGAAATTA-3' (SEQ ID NO: 2255)

5'-CUUUUAAUUGAAAUUAACUUUUAAA-3' (SEQ ID NO: 5851)
3'-GAGAAAAUUAACUUUAAUUGAAAAUUU-5' (SEQ ID NO: 850)

KRAS-5289 Target: 5'-CTCTTTTAATTGAAATTAACTTTTAAA-3' (SEQ ID NO: 2256)

5'-UUUUAAUUGAAAUUAACUUUUAAAU-3' (SEQ ID NO: 5852)
3'-AGAAAAUUAACUUUAAUUGAAAAUUUA-5' (SEQ ID NO: 851)

KRAS-5290 Target: 5'-TCTTTTAATTGAAATTAACTTTTAAAT-3' (SEQ ID NO: 2257)

5'-UUAAUUGAAAUUAACUUUUAAAUGU-3' (SEQ ID NO: 5853)
3'-AAAAUUAACUUUAAUUGAAAAUUUACA-5' (SEQ ID NO: 852)

KRAS-5292 Target: 5'-TTTTAATTGAAATTAACTTTTAAATGT-3' (SEQ ID NO: 2258)

5'-AAUUGAAAUUAACUUUUAAAUGUUU-3' (SEQ ID NO: 5854)
3'-AAUUAACUUUAAUUGAAAAUUUACAAA-5' (SEQ ID NO: 853)

KRAS-5294 Target: 5'-TTAATTGAAATTAACTTTTAAATGTTT-3' (SEQ ID NO: 2259)

5'-AUUGAAAUUAACUUUUAAAUGUUUA-3' (SEQ ID NO: 5855)
3'-AUUAACUUUAAUUGAAAAUUUACAAAU-5' (SEQ ID NO: 854)

KRAS-5295 Target: 5'-TAATTGAAATTAACTTTTAAATGTTTA-3' (SEQ ID NO: 2260)

5'-UUGAAAUUAACUUUUAAAUGUUUAU-3' (SEQ ID NO: 5856)
3'-UUAACUUUAAUUGAAAAUUUACAAAUA-5' (SEQ ID NO: 855)

KRAS-5296 Target: 5'-AATTGAAATTAACTTTTAAATGTTTAT-3' (SEQ ID NO: 2261)

5'-UGAAAUUAACUUUUAAAUGUUUAUA-3' (SEQ ID NO: 5857)
3'-UAACUUUAAUUGAAAAUUUACAAAUAU-5' (SEQ ID NO: 856)

KRAS-5297 Target: 5'-ATTGAAATTAACTTTTAAATGTTTATA-3' (SEQ ID NO: 2262)

5'-GAAAUUAACUUUUAAAUGUUUAUAG-3' (SEQ ID NO: 5858)
3'-AACUUUAAUUGAAAAUUUACAAAUAUC-5' (SEQ ID NO: 857)

KRAS-5298 Target: 5'-TTGAAATTAACTTTTAAATGTTTATAG-3' (SEQ ID NO: 2263)

5'-AAAUUAACUUUUAAAUGUUUAUAGG-3' (SEQ ID NO: 5859)
3'-ACUUUAAUUGAAAAUUUACAAAUAUCC-5' (SEQ ID NO: 858)

KRAS-5299 Target: 5'-TGAAATTAACTTTTAAATGTTTATAGG-3' (SEQ ID NO: 2264)

5'-UUAACUUUUAAAUGUUUAUAGGAGU-3' (SEQ ID NO: 5860)
3'-UUAAUUGAAAAUUUACAAAUAUCCUCA-5' (SEQ ID NO: 859)

KRAS-5302 Target: 5'-AATTAACTTTTAAATGTTTATAGGAGT-3' (SEQ ID NO: 2265)

5'-CUUUUAAAUGUUUAUAGGAGUAUGU-3' (SEQ ID NO: 5861)
3'-UUGAAAAUUUACAAAUAUCCUCAUACA-5' (SEQ ID NO: 860)

KRAS-5306 Target: 5'-AACTTTTAAATGTTTATAGGAGTATGT-3' (SEQ ID NO: 2266)

5'-UAAAUGUUUAUAGGAGUAUGUGCUG-3' (SEQ ID NO: 5862)
3'-AAAUUUACAAAUAUCCUCAUACACGAC-5' (SEQ ID NO: 861)

KRAS-5310 Target: 5'-TTTAAATGTTTATAGGAGTATGTGCTG-3' (SEQ ID NO: 2267)

5'-AAAUGUUUAUAGGAGUAUGUGCUGU-3' (SEQ ID NO: 5863)
3'-AAUUUACAAAUAUCCUCAUACACGACA-5' (SEQ ID NO: 862)

KRAS-5311 Target: 5'-TTAAATGTTTATAGGAGTATGTGCTGT-3' (SEQ ID NO: 2268)

5'-UGUGAAGUGAUCUAAAAUUUGUAAU-3' (SEQ ID NO: 5864)
3'-CGACACUUCACUAGAUUUUAAACAUUA-5' (SEQ ID NO: 863)

KRAS-5333 Target: 5'-GCTGTGAAGTGATCTAAAATTTGTAAT-3' (SEQ ID NO: 2269)

5'-UGAAGUGAUCUAAAAUUUGUAAUAU-3' (SEQ ID NO: 5865)
3'-ACACUUCACUAGAUUUUAAACAUUAUA-5' (SEQ ID NO: 864)

KRAS-5335 Target: 5'-TGTGAAGTGATCTAAAATTTGTAATAT-3' (SEQ ID NO: 2270)

5'-GAAGUGAUCUAAAAUUUGUAAUAUU-3' (SEQ ID NO: 5866)
3'-CACUUCACUAGAUUUUAAACAUUAUAA-5' (SEQ ID NO: 865)

KRAS-5336 Target: 5'-GTGAAGTGATCTAAAATTTGTAATATT-3' (SEQ ID NO: 2271)

5'-AAGUGAUCUAAAAUUUGUAAUAUUU-3' (SEQ ID NO: 5867)
3'-ACUUCACUAGAUUUUAAACAUUAUAAA-5' (SEQ ID NO: 866)

KRAS-5337 Target: 5'-TGAAGTGATCTAAAATTTGTAATATTT-3' (SEQ ID NO: 2272)

5'-AGUGAUCUAAAAUUUGUAAUAUUUU-3' (SEQ ID NO: 5868)
3'-CUUCACUAGAUUUUAAACAUUAUAAAA-5' (SEQ ID NO: 867)

KRAS-5338 Target: 5'-GAAGTGATCTAAAATTTGTAATATTTT-3' (SEQ ID NO: 2273)

5'-GUGAUCUAAAAUUUGUAAUAUUUUU-3' (SEQ ID NO: 5869)
3'-UUCACUAGAUUUUAAACAUUAUAAAAA-5' (SEQ ID NO: 868)

KRAS-5339 Target: 5'-AAGTGATCTAAAATTTGTAATATTTTT-3' (SEQ ID NO: 2274)

5'-UGAUCUAAAAUUUGUAAUAUUUUUG-3' (SEQ ID NO: 5870)
3'-UCACUAGAUUUUAAACAUUAUAAAAAC-5' (SEQ ID NO: 869)

KRAS-5340 Target: 5'-AGTGATCTAAAATTTGTAATATTTTTG-3' (SEQ ID NO: 2275)

5'-CUAAAAUUUGUAAUAUUUUUGUCAU-3' (SEQ ID NO: 5871)
3'-UAGAUUUUAAACAUUAUAAAAACAGUA-5' (SEQ ID NO: 870)

KRAS-5344 Target: 5'-ATCTAAAATTTGTAATATTTTTGTCAT-3' (SEQ ID NO: 2276)

5'-UAAAAUUUGUAAUAUUUUUGUCAUG-3' (SEQ ID NO: 5872)
3'-AGAUUUUAAACAUUAUAAAAACAGUAC-5' (SEQ ID NO: 871)

KRAS-5345 Target: 5'-TCTAAAATTTGTAATATTTTTGTCATG-3' (SEQ ID NO: 2277)

5'-AUUUGUAAUAUUUUUGUCAUGAACU-3' (SEQ ID NO: 5873)
3'-UUUAAACAUUAUAAAAACAGUACUUGA-5' (SEQ ID NO: 872)

KRAS-5349 Target: 5'-AAATTTGTAATATTTTTGTCATGAACT-3' (SEQ ID NO: 2278)

5'-UUUGUAAUAUUUUUGUCAUGAACUG-3' (SEQ ID NO: 5874)
3'-UUAAACAUUAUAAAAACAGUACUUGAC-5' (SEQ ID NO: 873)

KRAS-5350 Target: 5'-AATTTGTAATATTTTTGTCATGAACTG-3' (SEQ ID NO: 2279)

5'-UUGUAAUAUUUUUGUCAUGAACUGU-3' (SEQ ID NO: 5875)
3'-UAAACAUUAUAAAAACAGUACUUGACA-5' (SEQ ID NO: 874)

KRAS-5351 Target: 5'-ATTTGTAATATTTTTGTCATGAACTGT-3' (SEQ ID NO: 2280)

5'-AAUAUUUUUGUCAUGAACUGUACUA-3' (SEQ ID NO: 5876)
3'-CAUUAUAAAAACAGUACUUGACAUGAU-5' (SEQ ID NO: 875)

KRAS-5355 Target: 5'-GTAATATTTTTGTCATGAACTGTACTA-3' (SEQ ID NO: 2281)

5'-AUAUUUUUGUCAUGAACUGUACUAC-3' (SEQ ID NO: 5877)
3'-AUUAUAAAAACAGUACUUGACAUGAUG-5' (SEQ ID NO: 876)

KRAS-5356 Target: 5'-TAATATTTTTGTCATGAACTGTACTAC-3' (SEQ ID NO: 2282)

5'-CUGUACUACUCCUAAUUAUUGUAAU-3' (SEQ ID NO: 5878)
3'-UUGACAUGAUGAGGAUUAAUAACAUUA-5' (SEQ ID NO: 877)

KRAS-5372 Target: 5'-AACTGTACTACTCCTAATTATTGTAAT-3' (SEQ ID NO: 2283)

5'-UGUACUACUCCUAAUUAUUGUAAUG-3' (SEQ ID NO: 5879)
3'-UGACAUGAUGAGGAUUAAUAACAUUAC-5' (SEQ ID NO: 878)

KRAS-5373 Target: 5'-ACTGTACTACTCCTAATTATTGTAATG-3' (SEQ ID NO: 2284)

5'-CUAAUUAUUGUAAUGUAAUAAAAAU-3' (SEQ ID NO: 5880)
3'-AGGAUUAAUAACAUUACAUUAUUUUUA-5' (SEQ ID NO: 879)

KRAS-5383 Target: 5'-TCCTAATTATTGTAATGTAATAAAAAT-3' (SEQ ID NO: 2285)

5'-UAAUUAUUGUAAUGUAAUAAAAAUA-3' (SEQ ID NO: 5881)
3'-GGAUUAAUAACAUUACAUUAUUUUUAU-5' (SEQ ID NO: 880)

KRAS-5384 Target: 5'-CCTAATTATTGTAATGTAATAAAAATA-3' (SEQ ID NO: 2286)

5'-AUUAUUGUAAUGUAAUAAAAAUAGU-3' (SEQ ID NO: 5882)
3'-AUUAAUAACAUUACAUUAUUUUUAUCA-5' (SEQ ID NO: 881)

KRAS-5386 Target: 5'-TAATTATTGTAATGTAATAAAAATAGT-3' (SEQ ID NO: 2287)

5'-UAUUGUAAUGUAAUAAAAAUAGUUA-3' (SEQ ID NO: 5883)
3'-UAAUAACAUUACAUUAUUUUUAUCAAU-5' (SEQ ID NO: 882)

KRAS-5388 Target: 5'-ATTATTGTAATGTAATAAAAATAGTTA-3' (SEQ ID NO: 2288)

5'-AUUGUAAUGUAAUAAAAAUAGUUAC-3' (SEQ ID NO: 5884)
3'-AAUAACAUUACAUUAUUUUUAUCAAUG-5' (SEQ ID NO: 883)

KRAS-5389 Target: 5'-TTATTGTAATGTAATAAAAATAGTTAC-3' (SEQ ID NO: 2289)

5'-UGUAAUGUAAUAAAAAUAGUUACAG-3' (SEQ ID NO: 5885)
3'-UAACAUUACAUUAUUUUUAUCAAUGUC-5' (SEQ ID NO: 884)

KRAS-5391 Target: 5'-ATTGTAATGTAATAAAAATAGTTACAG-3' (SEQ ID NO: 2290)

5'-GUAAUGUAAUAAAAAUAGUUACAGU-3' (SEQ ID NO: 5886)
3'-AACAUUACAUUAUUUUUAUCAAUGUCA-5' (SEQ ID NO: 885)

KRAS-5392 Target: 5'-TTGTAATGTAATAAAAATAGTTACAGT-3' (SEQ ID NO: 2291)

5'-UGUAAUAAAAAUAGUUACAGUGACA-3' (SEQ ID NO: 5887)
3'-UUACAUUAUUUUUAUCAAUGUCACUGU-5' (SEQ ID NO: 886)

KRAS-5396 Target: 5'-AATGTAATAAAAATAGTTACAGTGACA-3' (SEQ ID NO: 2292)

5'-GUAAUAAAAAUAGUUACAGUGACAA-3' (SEQ ID NO: 5888)
3'-UACAUUAUUUUUAUCAAUGUCACUGUU-5' (SEQ ID NO: 887)

KRAS-5397 Target: 5'-ATGTAATAAAAATAGTTACAGTGACAA-3' (SEQ ID NO: 2293)

5'-UAAUAAAAAUAGUUACAGUGACAAA-3' (SEQ ID NO: 5889)
3'-ACAUUAUUUUUAUCAAUGUCACUGUUU-5' (SEQ ID NO: 888)

KRAS-5398 Target: 5'-TGTAATAAAAATAGTTACAGTGACAAA-3' (SEQ ID NO: 2294)

5'-AUAGUUACAGUGACAAAAAAAAAAA-3' (SEQ ID NO: 5890)
3'-UUUAUCAAUGUCACUGUUUUUUUUUU-5' (SEQ ID NO: 889)

KRAS-5406 Target: 5'-AAATAGTTACAGTGACAAAAAAAAAAA-3' (SEQ ID NO: 2295)

5'-UAGUUACAGUGACAAAAAAAAAAAA-3' (SEQ ID NO: 5891)
3'-UUAUCAAUGUCACUGUUUUUUUUUUU-5' (SEQ ID NO: 890)

KRAS-5407 Target: 5'-AATAGTTACAGTGACAAAAAAAAAAAA-3' (SEQ ID NO: 2296)

5'-GUUACAGUGACAAAAAAAAAAAAA-3' (SEQ ID NO: 5892)
3'-AUCAAUGUCACUGUUUUUUUUUUUU-5' (SEQ ID NO: 891)

KRAS-5409 Target: 5'-TAGTTACAGTGACAAAAAAAAAAAAA-3' (SEQ ID NO: 2297)

5'-UGCUGAAAAUGACUGAAUAUAAACU-3' (SEQ ID NO: 5893)
3'-GGACGACUUUUACUGACUUAUAUUUGA-5' (SEQ ID NO: 2298)

KRAS-172 Target: 5'-CCTGCTGAAAATGACTGAATATAAACT-3' (SEQ ID NO: 3704)

5'-AAAUGACUGAAUAUAAACUUGUGGU-3' (SEQ ID NO: 5894)
3'-CUUUUACUGACUUAUAUUUGAACACCA-5' (SEQ ID NO: 2299)

KRAS-178 Target: 5'-GAAAATGACTGAATATAAACTTGTGGT-3' (SEQ ID NO: 3705)

5'-GACUGAAUAUAAACUUGUGGUAGUU-3' (SEQ ID NO: 5895)
3'-UACUGACUUAUAUUUGAACACCAUCAA-5' (SEQ ID NO: 2300)

KRAS-182 Target: 5'-ATGACTGAATATAAACTTGTGGTAGTT-3' (SEQ ID NO: 3706)

5'-AGCUAAUUCAGAAUCAUUUUGUGGA-3' (SEQ ID NO: 5896)
3'-UGUCGAUUAAGUCUUAGUAAAACACCU-5' (SEQ ID NO: 2301)

KRAS-244 Target: 5'-ACAGCTAATTCAGAATCATTTTGTGGA-3' (SEQ ID NO: 3707)

5'-ACGAAUAUGAUCCAACAAUAGAGGA-3' (SEQ ID NO: 5897)
3'-CCUGCUUAUACUAGGUUGUUAUCUCCU-5' (SEQ ID NO: 2302)

KRAS-268 Target: 5'-GGACGAATATGATCCAACAATAGAGGA-3' (SEQ ID NO: 3708)

5'-AGCAAGUAGUAAUUGAUGGAGAAAC-3' (SEQ ID NO: 5898)
3'-CUUCGUUCAUCAUUAACUACCUCUUUG-5' (SEQ ID NO: 2303)

KRAS-304 Target: 5'-GAAGCAAGTAGTAATTGATGGAGAAAC-3' (SEQ ID NO: 3709)

5'-GGAGGGCUUUCUUUGUGUAUUUGCC-3' (SEQ ID NO: 5899)
3'-CCCCUCCCGAAAGAAACACAUAAACGG-5' (SEQ ID NO: 2304)

KRAS-404 Target: 5'-GGGGAGGGCTTTCTTTGTGTATTTGCC-3' (SEQ ID NO: 3710)

5'-UCUUUGUGUAUUUGCCAUAAAUAAU-3' (SEQ ID NO: 5900)
3'-AAAGAAACACAUAAACGGUAUUUAUUA-5' (SEQ ID NO: 2305)

KRAS-413 Target: 5'-TTTCTTTGTGTATTTGCCATAAATAAT-3' (SEQ ID NO: 3711)

5'-CUUUGUGUAUUUGCCAUAAAUAAUA-3' (SEQ ID NO: 5901)
3'-AAGAAACACAUAAACGGUAUUUAUUAU-5' (SEQ ID NO: 2306)

KRAS-414 Target: 5'-TTCTTTGTGTATTTGCCATAAATAATA-3' (SEQ ID NO: 3712)

5'-UUUGUGUAUUUGCCAUAAAUAAUAC-3' (SEQ ID NO: 5902)
3'-AGAAACACAUAAACGGUAUUUAUUAUG-5' (SEQ ID NO: 2307)

KRAS-415 Target: 5'-TCTTTGTGTATTTGCCATAAATAATAC-3' (SEQ ID NO: 3713)

5'-UUGUGUAUUUGCCAUAAAUAAUACU-3' (SEQ ID NO: 5903)
3'-GAAACACAUAAACGGUAUUUAUUAUGA-5' (SEQ ID NO: 2308)

KRAS-416 Target: 5'-CTTTGTGTATTTGCCATAAATAATACT-3' (SEQ ID NO: 3714)

5'-GUAUUUGCCAUAAAUAAUACUAAAU-3' (SEQ ID NO: 5904)
3'-CACAUAAACGGUAUUUAUUAUGAUUUA-5' (SEQ ID NO: 2309)

KRAS-420 Target: 5'-GTGTATTTGCCATAAATAATACTAAAT-3' (SEQ ID NO: 3715)

5'-UAUUUGCCAUAAAUAAUACUAAAUC-3' (SEQ ID NO: 5905)
3'-ACAUAAACGGUAUUUAUUAUGAUUUAG-5' (SEQ ID NO: 2310)

KRAS-421 Target: 5'-TGTATTTGCCATAAATAATACTAAATC-3' (SEQ ID NO: 3716)

5'-CCAUAAAUAAUACUAAAUCAUUUGA-3' (SEQ ID NO: 5906)
3'-ACGGUAUUUAUUAUGAUUUAGUAAACU-5' (SEQ ID NO: 2311)

KRAS-427 Target: 5'-TGCCATAAATAATACTAAATCATTTGA-3' (SEQ ID NO: 3717)

5'-CAUAAAUAAUACUAAAUCAUUUGAA-3' (SEQ ID NO: 5907)
3'-CGGUAUUUAUUAUGAUUUAGUAAACUU-5' (SEQ ID NO: 2312)

KRAS-428 Target: 5'-GCCATAAATAATACTAAATCATTTGAA-3' (SEQ ID NO: 3718)

5'-UAAAUAAUACUAAAUCAUUUGAAGA-3' (SEQ ID NO: 5908)
3'-GUAUUUAUUAUGAUUUAGUAAACUUCU-5' (SEQ ID NO: 2313)

KRAS-430 Target: 5'-CATAAATAATACTAAATCATTTGAAGA-3' (SEQ ID NO: 3719)

5'-AAAUAAUACUAAAUCAUUUGAAGAU-3' (SEQ ID NO: 5909)
3'-UAUUUAUUAUGAUUUAGUAAACUUCUA-5' (SEQ ID NO: 2314)

KRAS-431 Target: 5'-ATAAATAATACTAAATCATTTGAAGAT-3' (SEQ ID NO: 3720)

5'-AAUAAUACUAAAUCAUUUGAAGAUA-3' (SEQ ID NO: 5910)
3'-AUUUAUUAUGAUUUAGUAAACUUCUAU-5' (SEQ ID NO: 2315)

KRAS-432 Target: 5'-TAAATAATACTAAATCATTTGAAGATA-3' (SEQ ID NO: 3721)

5'-AUAAUACUAAAUCAUUUGAAGAUAU-3' (SEQ ID NO: 5911)
3'-UUUAUUAUGAUUUAGUAAACUUCUAUA-5' (SEQ ID NO: 2316)

KRAS-433 Target: 5'-AAATAATACTAAATCATTTGAAGATAT-3' (SEQ ID NO: 3722)

5'-AUUUGAAGAUAUUCACCAUUAUAGA-3' (SEQ ID NO: 5912)
3'-AGUAAACUUCUAUAAGUGGUAAUAUCU-5' (SEQ ID NO: 2317)

KRAS-446 Target: 5'-TCATTTGAAGATATTCACCATTATAGA-3' (SEQ ID NO: 3723)

5'-UUGAAGAUAUUCACCAUUAUAGAGA-3' (SEQ ID NO: 5913)
3'-UAAACUUCUAUAAGUGGUAAUAUCUCU-5' (SEQ ID NO: 2318)

KRAS-448 Target: 5'-ATTTGAAGATATTCACCATTATAGAGA-3' (SEQ ID NO: 3724)

5'-UGAAGAUAUUCACCAUUAUAGAGAA-3' (SEQ ID NO: 5914)
3'-AAACUUCUAUAAGUGGUAAUAUCUCUU-5' (SEQ ID NO: 2319)

KRAS-449 Target: 5'-TTTGAAGATATTCACCATTATAGAGAA-3' (SEQ ID NO: 3725)

5'-GAAGAUAUUCACCAUUAUAGAGAAC-3' (SEQ ID NO: 5915)
3'-AACUUCUAUAAGUGGUAAUAUCUCUUG-5' (SEQ ID NO: 2320)

KRAS-450 Target: 5'-TTGAAGATATTCACCATTATAGAGAAC-3' (SEQ ID NO: 3726)

5'-AAGAUAUUCACCAUUAUAGAGAACA-3' (SEQ ID NO: 5916)
3'-ACUUCUAUAAGUGGUAAUAUCUCUUGU-5' (SEQ ID NO: 2321)

KRAS-451 Target: 5'-TGAAGATATTCACCATTATAGAGAACA-3' (SEQ ID NO: 3727)

5'-CCAUUAUAGAGAACAAAUUAAAAGA-3' (SEQ ID NO: 5917)
3'-GUGGUAAUAUCUCUUGUUUAAUUUUCU-5' (SEQ ID NO: 2322)

KRAS-461 Target: 5'-CACCATTATAGAGAACAAATTAAAAGA-3' (SEQ ID NO: 3728)

5'-AUUAUAGAGAACAAAUUAAAAGAGU-3' (SEQ ID NO: 5918)
3'-GGUAAUAUCUCUUGUUUAAUUUUCUCA-5' (SEQ ID NO: 2323)

KRAS-463 Target: 5'-CCATTATAGAGAACAAATTAAAAGAGT-3' (SEQ ID NO: 3729)

5'-UUAUAGAGAACAAAUUAAAAGAGUU-3' (SEQ ID NO: 5919)
3'-GUAAUAUCUCUUGUUUAAUUUUCUCAA-5' (SEQ ID NO: 2324)

KRAS-464 Target: 5'-CATTATAGAGAACAAATTAAAAGAGTT-3' (SEQ ID NO: 3730)

5'-UAUAGAGAACAAAUUAAAAGAGUUA-3' (SEQ ID NO: 5920)
3'-UAAUAUCUCUUGUUUAAUUUUCUCAAU-5' (SEQ ID NO: 2325)

KRAS-465 Target: 5'-ATTATAGAGAACAAATTAAAAGAGTTA-3' (SEQ ID NO: 3731)

5'-AUAGAGAACAAAUUAAAAGAGUUAA-3' (SEQ ID NO: 5921)
3'-AAUAUCUCUUGUUUAAUUUUCUCAAUU-5' (SEQ ID NO: 2326)

KRAS-466 Target: 5'-TTATAGAGAACAAATTAAAAGAGTTAA-3' (SEQ ID NO: 3732)

5'-CUAGUAGGAAAUAAAUGUGAUUUGC-3' (SEQ ID NO: 5922)
3'-AGGAUCAUCCUUUAUUUACACUAAACG-5' (SEQ ID NO: 2327)

KRAS-516 Target: 5'-TCCTAGTAGGAAATAAATGTGATTTGC-3' (SEQ ID NO: 3733)

5'-UAGUAGGAAAUAAAUGUGAUUUGCC-3' (SEQ ID NO: 5923)
3'-GGAUCAUCCUUUAUUUACACUAAACGG-5' (SEQ ID NO: 2328)

KRAS-517 Target: 5'-CCTAGTAGGAAATAAATGTGATTTGCC-3' (SEQ ID NO: 3734)

5'-AAGAAGUUAUGGAAUUCCUUUUAUU-3' (SEQ ID NO: 5924)
3'-CGUUCUUCAAUACCUUAAGGAAAAUAA-5' (SEQ ID NO: 2329)

KRAS-581 Target: 5'-GCAAGAAGTTATGGAATTCCTTTTATT-3' (SEQ ID NO: 3735)

5'-AAGUUAUGGAAUUCCUUUUAUUGAA-3' (SEQ ID NO: 5925)
3'-UCUUCAAUACCUUAAGGAAAAUAACUU-5' (SEQ ID NO: 2330)

KRAS-584 Target: 5'-AGAAGTTATGGAATTCCTTTTATTGAA-3' (SEQ ID NO: 3736)

5'-AGUUAUGGAAUUCCUUUUAUUGAAA-3' (SEQ ID NO: 5926)
3'-CUUCAAUACCUUAAGGAAAAUAACUUU-5' (SEQ ID NO: 2331)

KRAS-585 Target: 5'-GAAGTTATGGAATTCCTTTTATTGAAA-3' (SEQ ID NO: 3737)

5'-GUUAUGGAAUUCCUUUUAUUGAAAC-3' (SEQ ID NO: 5927)
3'-UUCAAUACCUUAAGGAAAAUAACUUUG-5' (SEQ ID NO: 2332)

KRAS-586 Target: 5'-AAGTTATGGAATTCCTTTTATTGAAAC-3' (SEQ ID NO: 3738)

5'-UUAUGGAAUUCCUUUUAUUGAAACA-3' (SEQ ID NO: 5928)
3'-UCAAUACCUUAAGGAAAAUAACUUUGU-5' (SEQ ID NO: 2333)

KRAS-587 Target: 5'-AGTTATGGAATTCCTTTTATTGAAACA-3' (SEQ ID NO: 3739)

5'-UGGAGGAUGCUUUUUAUACAUUGGU-3' (SEQ ID NO: 5929)
3'-UCACCUCCUACGAAAAAUAUGUAACCA-5' (SEQ ID NO: 2334)

KRAS-634 Target: 5'-AGTGGAGGATGCTTTTTATACATTGGT-3' (SEQ ID NO: 3740)

5'-GAGGAUGCUUUUUAUACAUUGGUGA-3' (SEQ ID NO: 5930)
3'-ACCUCCUACGAAAAAUAUGUAACCACU-5' (SEQ ID NO: 2335)

KRAS-636 Target: 5'-TGGAGGATGCTTTTTATACATTGGTGA-3' (SEQ ID NO: 3741)

5'-ACAGAUUGAAAAAAAUCAGCAAAGA-3' (SEQ ID NO: 5931)
3'-UAUGUCUAACUUUUUUUAGUCGUUUCU-5' (SEQ ID NO: 2336)

KRAS-676 Target: 5'-ATACAGATTGAAAAAAATCAGCAAAGA-3' (SEQ ID NO: 3742)

5'-CAGAUUGAAAAAAAUCAGCAAAGAA-3' (SEQ ID NO: 5932)
3'-AUGUCUAACUUUUUUUAGUCGUUUCUU-5' (SEQ ID NO: 2337)

KRAS-677 Target: 5'-TACAGATTGAAAAAAATCAGCAAAGAA-3' (SEQ ID NO: 3743)

5'-GAUUGAAAAAAAUCAGCAAAGAAGA-3' (SEQ ID NO: 5933)
3'-GUCUAACUUUUUUUAGUCGUUUCUUCU-5' (SEQ ID NO: 2338)

KRAS-679 Target: 5'-CAGATTGAAAAAAATCAGCAAAGAAGA-3' (SEQ ID NO: 3744)

5'-AUUGAAAAAAAAUCAGCAAAGAAGAA-3' (SEQ ID NO: 5934)
3'-UCUAACUUUUUUUAGUCGUUUCUUCUU-5' (SEQ ID NO: 2339)

KRAS-680 Target: 5'-AGATTGAAAAAAATCAGCAAAGAAGAA-3' (SEQ ID NO: 3745)

5'-UUGAAAAAAAAUCAGCAAAGAAGAAA-3' (SEQ ID NO: 5935)
3'-CUAACUUUUUUUAGUCGUUUCUUCUUU-5' (SEQ ID NO: 2340)

KRAS-681 Target: 5'-GATTGAAAAAAATCAGCAAAGAAGAAA-3' (SEQ ID NO: 3746)

5'-UGAAAAAAAAUCAGCAAAGAAGAAAA-3' (SEQ ID NO: 5936)
3'-UAACUUUUUUUAGUCGUUUCUUCUUUU-5' (SEQ ID NO: 2341)

KRAS-682 Target: 5'-ATTGAAAAAAATCAGCAAAGAAGAAAA-3' (SEQ ID NO: 3747)

5'-UCCUGGCUGUGUGAAAAUUAAAAAA-3' (SEQ ID NO: 5937)
3'-UGAGGACCGACACACUUUUAAUUUUUU-5' (SEQ ID NO: 2342)

KRAS-710 Target: 5'-ACTCCTGGCTGTGTGAAAATTAAAAAA-3' (SEQ ID NO: 3748)

5'-GGCUGUGUGAAAAUUAAAAAAAUGCA-3' (SEQ ID NO: 5938)
3'-GACCGACACACUUUUAAUUUUUUACGU-5' (SEQ ID NO: 2343)

KRAS-714 Target: 5'-CTGGCTGTGTGAAAATTAAAAAATGCA-3' (SEQ ID NO: 3749)

5'-GUGUGAAAAUUAAAAAAAUGCAUUAU-3' (SEQ ID NO: 5939)
3'-GACACACUUUUAAUUUUUUACGUAAUA-5' (SEQ ID NO: 2344)

KRAS-718 Target: 5'-CTGTGTGAAAATTAAAAAATGCATTAT-3' (SEQ ID NO: 3750)

5'-UGUGAAAAUUAAAAAAUGCAUUAUA-3' (SEQ ID NO: 5940)
3'-ACACACUUUUAAUUUUUUACGUAAUAU-5' (SEQ ID NO: 2345)

KRAS-719 Target: 5'-TGTGTGAAAATTAAAAAATGCATTATA-3' (SEQ ID NO: 3751)

5'-GUGAAAAUUAAAAAAUGCAUUAUAA-3' (SEQ ID NO: 5941)
3'-CACACUUUUAAUUUUUUACGUAAUAUU-5' (SEQ ID NO: 2346)

KRAS-720 Target: 5'-GTGTGAAAATTAAAAAATGCATTATAA-3' (SEQ ID NO: 3752)

5'-UGAAAAUUAAAAAAUGCAUUAUAAU-3' (SEQ ID NO: 5942)
3'-ACACUUUUAAUUUUUUACGUAAUAUUA-5' (SEQ ID NO: 2347)

KRAS-721 Target: 5'-TGTGAAAATTAAAAAATGCATTATAAT-3' (SEQ ID NO: 3753)

5'-AAAAUUAAAAAAUGCAUUAUAAUGU-3' (SEQ ID NO: 5943)
3'-ACUUUUAAUUUUUUACGUAAUAUUACA-5' (SEQ ID NO: 2348)

KRAS-723 Target: 5'-TGAAAATTAAAAAATGCATTATAATGT-3' (SEQ ID NO: 3754)

5'-AAAUUAAAAAAUGCAUUAUAAUGUA-3' (SEQ ID NO: 5944)
3'-CUUUUAAUUUUUUACGUAAUAUUACAU-5' (SEQ ID NO: 2349)

KRAS-724 Target: 5'-GAAAATTAAAAAATGCATTATAATGTA-3' (SEQ ID NO: 3755)

5'-AAUUAAAAAAUGCAUUAUAAUGUAA-3' (SEQ ID NO: 5945)
3'-UUUUAAUUUUUUACGUAAUAUUACAUU-5' (SEQ ID NO: 2350)

KRAS-725 Target: 5'-AAAATTAAAAAATGCATTATAATGTAA-3' (SEQ ID NO: 3756)

5'-AUUAAAAAAUGCAUUAUAAUGUAAU-3' (SEQ ID NO: 5946)
3'-UUUAAUUUUUUACGUAAUAUUACAUUA-5' (SEQ ID NO: 2351)

KRAS-726 Target: 5'-AAATTAAAAAATGCATTATAATGTAAT-3' (SEQ ID NO: 3757)

5'-UAAAAAAUGCAUUAUAAUGUAAUCU-3' (SEQ ID NO: 5947)
3'-UAAUUUUUUACGUAAUAUUACAUUAGA-5' (SEQ ID NO: 2352)

KRAS-728 Target: 5'-ATTAAAAAATGCATTATAATGTAATCT-3' (SEQ ID NO: 3758)

5'-UGCAUUAUAAUGUAAUCUGGGUGUU-3' (SEQ ID NO: 5948)
3'-UUACGUAAUAUUACAUUAGACCCACAA-5' (SEQ ID NO: 2353)

KRAS-735 Target: 5'-AATGCATTATAATGTAATCTGGGTGTT-3' (SEQ ID NO: 3759)

5'-UUCGAGAAAUUCGAAAACAUAAAGA-3' (SEQ ID NO: 5949)
3'-UCAAGCUCUUUAAGCUUUUGUAUUUCU-5' (SEQ ID NO: 2354)

KRAS-782 Target: 5'-AGTTCGAGAAATTCGAAAACATAAAGA-3' (SEQ ID NO: 3760)

5'-UCGAGAAAUUCGAAAACAUAAAGAA-3' (SEQ ID NO: 5950)
3'-CAAGCUCUUUAAGCUUUUGUAUUUCUU-5' (SEQ ID NO: 2355)

KRAS-783 Target: 5'-GTTCGAGAAATTCGAAAACATAAAGAA-3' (SEQ ID NO: 3761)

5'-CGAGAAAUUCGAAAACAUAAAGAAA-3' (SEQ ID NO: 5951)
3'-AAGCUCUUUAAGCUUUUGUAUUUCUUU-5' (SEQ ID NO: 2356)

KRAS-784 Target: 5'-TTCGAGAAATTCGAAAACATAAAGAAA-3' (SEQ ID NO: 3762)

5'-GAAAUUCGAAAACAUAAAGAAAAGA-3' (SEQ ID NO: 5952)
3'-CUCUUUAAGCUUUUGUAUUUCUUUUCU-5' (SEQ ID NO: 2357)

KRAS-787 Target: 5'-GAGAAATTCGAAAACATAAAGAAAAGA-3' (SEQ ID NO: 3763)

5'-UCGAAAACAUAAAGAAAAGAUGAGC-3' (SEQ ID NO: 5953)
3'-UAAGCUUUUGUAUUUCUUUUCUACUCG-5' (SEQ ID NO: 2358)

KRAS-792 Target: 5'-ATTCGAAAACATAAAGAAAAGATGAGC-3' (SEQ ID NO: 3764)

5'-CGAAAACAUAAAGAAAAGAUGAGCA-3' (SEQ ID NO: 5954)
3'-AAGCUUUUGUAUUUCUUUUCUACUCGU-5' (SEQ ID NO: 2359)

KRAS-793 Target: 5'-TTCGAAAACATAAAGAAAAGATGAGCA-3' (SEQ ID NO: 3765)

5'-AAAGAUGGUAAAAAGAAGAAAAAGA-3' (SEQ ID NO: 5955)
3'-CGUUUCUACCAUUUUUCUUCUUUUUCU-5' (SEQ ID NO: 2360)

KRAS-817 Target: 5'-GCAAAGATGGTAAAAAGAAGAAAAAGA-3' (SEQ ID NO: 3766)

5'-AAGAUGGUAAAAAGAAGAAAAAGAA-3' (SEQ ID NO: 5956)
3'-GUUUCUACCAUUUUUCUUCUUUUUCUU-5' (SEQ ID NO: 2361)

KRAS-818 Target: 5'-CAAAGATGGTAAAAAGAAGAAAAAGAA-3' (SEQ ID NO: 3767)

5'-GAUGGUAAAAAGAAGAAAAAGAAGU-3' (SEQ ID NO: 5957)
3'-UUCUACCAUUUUUCUUCUUUUUCUUCA-5' (SEQ ID NO: 2362)

KRAS-820 Target: 5'-AAGATGGTAAAAAGAAGAAAAAGAAGT-3' (SEQ ID NO: 3768)

5'-AUGGUAAAAAGAAGAAAAAGAAGUC-3' (SEQ ID NO: 5958)
3'-UCUACCAUUUUUCUUCUUUUUCUUCAG-5' (SEQ ID NO: 2363)

KRAS-821 Target: 5'-AGATGGTAAAAAGAAGAAAAAGAAGTC-3' (SEQ ID NO: 3769)

5'-AAAAAGAAGAAAAAGAAGUCAAAGA-3' (SEQ ID NO: 5959)
3'-CAUUUUUCUUCUUUUUCUUCAGUUUCU-5' (SEQ ID NO: 2364)

KRAS-826 Target: 5'-GTAAAAAGAAGAAAAAGAAGTCAAAGA-3' (SEQ ID NO: 3770)

5'-AAAAGAAGAAAAAGAAGUCAAAGAC-3' (SEQ ID NO: 5960)
3'-AUUUUUCUUCUUUUUCUUCAGUUUCUG-5' (SEQ ID NO: 2365)

KRAS-827 Target: 5'-TAAAAAGAAGAAAAAGAAGTCAAAGAC-3' (SEQ ID NO: 3771)

5'-AAAGAAGAAAAAGAAGUCAAAGACA-3' (SEQ ID NO: 5961)
3'-UUUUUCUUCUUUUUCUUCAGUUUCUGU-5' (SEQ ID NO: 2366)

KRAS-828 Target: 5'-AAAAAGAAGAAAAAGAAGTCAAAGACA-3' (SEQ ID NO: 3772)

5'-UCAAAGACAAAGUGUGUAAUUAUGU-3' (SEQ ID NO: 5962)
3'-UCAGUUUCUGUUUCACACAUUAAUACA-5' (SEQ ID NO: 2367)

KRAS-844 Target: 5'-AGTCAAAGACAAAGTGTGTAATTATGT-3' (SEQ ID NO: 3773)

5'-CAAAGACAAAGUGUGUAAUUAUGUA-3' (SEQ ID NO: 5963)
3'-CAGUUUCUGUUUCACACAUUAAUACAU-5' (SEQ ID NO: 2368)

KRAS-845 Target: 5'-GTCAAAGACAAAGTGTGTAATTATGTA-3' (SEQ ID NO: 3774)

5'-GACAAAGUGUGUAAUUAUGUAAAUA-3' (SEQ ID NO: 5964)
3'-UUCUGUUUCACACAUUAAUACAUUUAU-5' (SEQ ID NO: 2369)

KRAS-849 Target: 5'-AAGACAAAGTGTGTAATTATGTAAATA-3' (SEQ ID NO: 3775)

5'-CAAAGUGUGUAAUUAUGUAAAUACA-3' (SEQ ID NO: 5965)
3'-CUGUUUCACACAUUAAUACAUUUAUGU-5' (SEQ ID NO: 2370)

KRAS-851 Target: 5'-GACAAAGTGTGTAATTATGTAAATACA-3' (SEQ ID NO: 3776)

5'-GUGUGUAAUUAUGUAAAUACAAUUU-3' (SEQ ID NO: 5966)
3'-UUCACACAUUAAUACAUUUAUGUUAAA-5' (SEQ ID NO: 2371)

KRAS-855 Target: 5'-AAGTGTGTAATTATGTAAATACAATTT-3' (SEQ ID NO: 3777)

5'-GUGUAAUUAUGUAAAUACAAUUUGU-3' (SEQ ID NO: 5967)
3'-CACACAUUAAUACAUUUAUGUUAAACA-5' (SEQ ID NO: 2372)

KRAS-857 Target: 5'-GTGTGTAATTATGTAAATACAATTTGT-3' (SEQ ID NO: 3778)

5'-GUAAUUAUGUAAAUACAAUUUGUAC-3' (SEQ ID NO: 5968)
3'-CACAUUAAUACAUUUAUGUUAAACAUG-5' (SEQ ID NO: 2373)

KRAS-859 Target: 5'-GTGTAATTATGTAAATACAATTTGTAC-3' (SEQ ID NO: 3779)

5'-UAAUUAUGUAAAUACAAUUUGUACU-3' (SEQ ID NO: 5969)
3'-ACAUUAAUACAUUUAUGUUAAACAUGA-5' (SEQ ID NO: 2374)

KRAS-860 Target: 5'-TGTAATTATGTAAATACAATTTGTACT-3' (SEQ ID NO: 3780)

5'-UAUGUAAAUACAAUUUGUACUUUUU-3' (SEQ ID NO: 5970)
3'-UAAUACAUUUAUGUUAAACAUGAAAAA-5' (SEQ ID NO: 2375)

KRAS-864 Target: 5'-ATTATGTAAATACAATTTGTACTTTTT-3' (SEQ ID NO: 3781)

5'-AUGUAAAUACAAUUUGUACUUUUUU-3' (SEQ ID NO: 5971)
3'-AAUACAUUUAUGUUAAACAUGAAAAAA-5' (SEQ ID NO: 2376)

KRAS-865 Target: 5'-TTATGTAAATACAATTTGTACTTTTTT-3' (SEQ ID NO: 3782)

5'-UGUAAAUACAAUUUGUACUUUUUUC-3' (SEQ ID NO: 5972)
3'-AUACAUUUAUGUUAAACAUGAAAAAAG-5' (SEQ ID NO: 2377)

KRAS-866 Target: 5'-TATGTAAATACAATTTGTACTTTTTTC-3' (SEQ ID NO: 3783)

5'-GUAAAUACAAUUUGUACUUUUUUCU-3' (SEQ ID NO: 5973)
3'-UACAUUUAUGUUAAACAUGAAAAAAGA-5' (SEQ ID NO: 2378)

KRAS-867 Target: 5'-ATGTAAATACAATTTGTACTTTTTTCT-3' (SEQ ID NO: 3784)

5'-ACAAUUUGUACUUUUUUCUUAAGGC-3' (SEQ ID NO: 5974)
3'-UAUGUUAAACAUGAAAAAAGAAUUCCG-5' (SEQ ID NO: 2379)

KRAS-873 Target: 5'-ATACAATTTGTACTTTTTTCTTAAGGC-3' (SEQ ID NO: 3785)

5'-CAAUUUGUACUUUUUUCUUAAGGCA-3' (SEQ ID NO: 5975)
3'-AUGUUAAACAUGAAAAAAGAAUUCCGU-5' (SEQ ID NO: 2380)

KRAS-874 Target: 5'-TACAATTTGTACTTTTTTCTTAAGGCA-3' (SEQ ID NO: 3786)

5'-UACUAGUACAAGUGGUAAUUUUUGU-3' (SEQ ID NO: 5976)
3'-GUAUGAUCAUGUUCACCAUUAAAAACA-5' (SEQ ID NO: 2381)

KRAS-899 Target: 5'-CATACTAGTACAAGTGGTAATTTTTGT-3' (SEQ ID NO: 3787)

5'-ACUAGUACAAGUGGUAAUUUUUGUA-3' (SEQ ID NO: 5977)
3'-UAUGAUCAUGUUCACCAUUAAAAACAU-5' (SEQ ID NO: 2382)

KRAS-900 Target: 5'-ATACTAGTACAAGTGGTAATTTTTGTA-3' (SEQ ID NO: 3788)

5'-ACAAGUGGUAAUUUUUGUACAUUAC-3' (SEQ ID NO: 5978)
3'-CAUGUUCACCAUUAAAAACAUGUAAUG-5' (SEQ ID NO: 2383)

KRAS-906 Target: 5'-GTACAAGTGGTAATTTTTGTACATTAC-3' (SEQ ID NO: 3789)

5'-CAAGUGGUAAUUUUUGUACAUUACA-3' (SEQ ID NO: 5979)
3'-AUGUUCACCAUUAAAAACAUGUAAUGU-5' (SEQ ID NO: 2384)

KRAS-907 Target: 5'-TACAAGTGGTAATTTTTGTACATTACA-3' (SEQ ID NO: 3790)

5'-UAAUUUUUGUACAUUACACUAAAUU-3' (SEQ ID NO: 5980)
3'-CCAUUAAAAACAUGUAAUGUGAUUUAA-5' (SEQ ID NO: 2385)

KRAS-914 Target: 5'-GGTAATTTTTGTACATTACACTAAATT-3' (SEQ ID NO: 3791)

5'-AAUUUUUGUACAUUACACUAAAUUA-3' (SEQ ID NO: 5981)
3'-CAUUAAAAACAUGUAAUGUGAUUUAAU-5' (SEQ ID NO: 2386)

KRAS-915 Target: 5'-GTAATTTTTGTACATTACACTAAATTA-3' (SEQ ID NO: 3792)

5'-AUUUUUGUACAUUACACUAAAUUAU-3' (SEQ ID NO: 5982)
3'-AUUAAAAACAUGUAAUGUGAUUUAAUA-5' (SEQ ID NO: 2387)

KRAS-916 Target: 5'-TAATTTTTGTACATTACACTAAATTAT-3' (SEQ ID NO: 3793)

5'-UUUUUGUACAUUACACUAAAUUAUU-3' (SEQ ID NO: 5983)
3'-UUAAAAACAUGUAAUGUGAUUUAAUAA-5' (SEQ ID NO: 2388)

KRAS-917 Target: 5'-AATTTTTGTACATTACACTAAATTATT-3' (SEQ ID NO: 3794)

5'-UUUUGUACAUUACACUAAAUUAUUA-3' (SEQ ID NO: 5984)
3'-UAAAAACAUGUAAUGUGAUUUAAUAAU-5' (SEQ ID NO: 2389)

KRAS-918 Target: 5'-ATTTTTGTACATTACACTAAATTATTA-3' (SEQ ID NO: 3795)

5'-CACUAAAUUAUUAGCAUUUGUUUUA-3' (SEQ ID NO: 5985)
3'-AUGUGAUUUAAUAAUCGUAAACAAAAU-5' (SEQ ID NO: 2390)

KRAS-930 Target: 5'-TACACTAAATTATTAGCATTTGTTTTA-3' (SEQ ID NO: 3796)

5'-CUAAAUUAUUAGCAUUUGUUUUAGC-3' (SEQ ID NO: 5986)
3'-GUGAUUUAAUAAUCGUAAACAAAAUCG-5' (SEQ ID NO: 2391)

KRAS-932 Target: 5'-CACTAAATTATTAGCATTTGTTTTAGC-3' (SEQ ID NO: 3797)

5'-UAAAUUAUUAGCAUUUGUUUUAGCA-3' (SEQ ID NO: 5987)
3'-UGAUUUAAUAAUCGUAAACAAAAUCGU-5' (SEQ ID NO: 2392)

KRAS-933 Target: 5'-ACTAAATTATTAGCATTTGTTTTAGCA-3' (SEQ ID NO: 3798)

5'-UAUUAGCAUUUGUUUUAGCAUUACC-3' (SEQ ID NO: 5988)
3'-UAAUAAUCGUAAACAAAAUCGUAAUGG-5' (SEQ ID NO: 2393)

KRAS-938 Target: 5'-ATTATTAGCATTTGTTTTAGCATTACC-3' (SEQ ID NO: 3799)

5'-CAUUUGUUUUAGCAUUACCUAAUUU-3' (SEQ ID NO: 5989)
3'-UCGUAAACAAAAUCGUAAUGGAUUAAA-5' (SEQ ID NO: 2394)

KRAS-944 Target: 5'-AGCATTTGTTTTAGCATTACCTAATTT-3' (SEQ ID NO: 3800)

5'-AUUUGUUUUAGCAUUACCUAAUUUU-3' (SEQ ID NO: 5990)
3'-CGUAAACAAAAUCGUAAUGGAUUAAAA-5' (SEQ ID NO: 2395)

KRAS-945 Target: 5'-GCATTTGTTTTAGCATTACCTAATTTT-3' (SEQ ID NO: 3801)

5'-UUGUUUUAGCAUUACCUAAUUUUUU-3' (SEQ ID NO: 5991)
3'-UAAACAAAAUCGUAAUGGAUUAAAAAA-5' (SEQ ID NO: 2396)

KRAS-947 Target: 5'-ATTTGTTTTAGCATTACCTAATTTTTT-3' (SEQ ID NO: 3802)

5'-UGUUUUAGCAUUACCUAAUUUUUUU-3' (SEQ ID NO: 5992)
3'-AAACAAAAUCGUAAUGGAUUAAAAAAA-5' (SEQ ID NO: 2397)

KRAS-948 Target: 5'-TTTGTTTTAGCATTACCTAATTTTTTT-3' (SEQ ID NO: 3803)

5'-GUUUUAGCAUUACCUAAUUUUUUUC-3' (SEQ ID NO: 5993)
3'-AACAAAAUCGUAAUGGAUUAAAAAAG-5' (SEQ ID NO: 2398)

KRAS-949 Target: 5'-TTGTTTTAGCATTACCTAATTTTTTTC-3' (SEQ ID NO: 3804)

5'-UUUUAGCAUUACCUAAUUUUUUUCC-3' (SEQ ID NO: 5994)
3'-ACAAAAUCGUAAUGGAUUAAAAAAAGG-5' (SEQ ID NO: 2399)

KRAS-950 Target: 5'-TGTTTTAGCATTACCTAATTTTTTTCC-3' (SEQ ID NO: 3805)

5'-GACUGUUAGCUUUUACCUUAAAUGC-3' (SEQ ID NO: 5995)
3'-GUCUGACAAUCGAAAAUGGAAUUUACG-5' (SEQ ID NO: 2400)

KRAS-986 Target: 5'-CAGACTGTTAGCTTTTACCTTAAATGC-3' (SEQ ID NO: 3806)

5'-ACUGUUAGCUUUUACCUUAAAUGCU-3' (SEQ ID NO: 5996)
3'-UCUGACAAUCGAAAAUGGAAUUUACGA-5' (SEQ ID NO: 2401)

KRAS-987 Target: 5'-AGACTGTTAGCTTTTACCTTAAATGCT-3' (SEQ ID NO: 3807)

5'-AGCUUUUACCUUAAAUGCUUAUUUU-3' (SEQ ID NO: 5997)
3'-AAUCGAAAAUGGAAUUUACGAAUAAAA-5' (SEQ ID NO: 2402)

KRAS-993 Target: 5'-TTAGCTTTTACCTTAAATGCTTATTTT-3' (SEQ ID NO: 3808)

5'-GCUUUUACCUUAAAUGCUUAUUUUA-3' (SEQ ID NO: 5998)
3'-AUCGAAAAUGGAAUUUACGAAUAAAAU-5' (SEQ ID NO: 2403)

KRAS-994 Target: 5'-TAGCTTTTACCTTAAATGCTTATTTTA-3' (SEQ ID NO: 3809)

5'-CUUUUACCUUAAAUGCUUAUUUUAA-3' (SEQ ID NO: 5999)
3'-UCGAAAAUGGAAUUUACGAAUAAAAUU-5' (SEQ ID NO: 2404)

KRAS-995 Target: 5'-AGCTTTTACCTTAAATGCTTATTTTAA-3' (SEQ ID NO: 3810)

5'-CCUUAAAUGCUUAUUUUAAAAUGAC-3' (SEQ ID NO: 6000)
3'-AUGGAAUUUACGAAUAAAAUUUUACUG-5' (SEQ ID NO: 2405)

KRAS-1001 Target: 5'-TACCTTAAATGCTTATTTTAAAATGAC-3' (SEQ ID NO: 3811)

5'-CUUAAAUGCUUAUUUUAAAAUGACA-3' (SEQ ID NO: 6001)
3'-UGGAAUUUACGAAUAAAAUUUUACUGU-5' (SEQ ID NO: 2406)

KRAS-1002 Target: 5'-ACCTTAAATGCTTATTTTAAAATGACA-3' (SEQ ID NO: 3812)

5'-UGCUUAUUUUAAAAUGACAGUGGAA-3' (SEQ ID NO: 6002)
3'-UUACGAAUAAAAUUUUACUGUCACCUU-5' (SEQ ID NO: 2407)

KRAS-1008 Target: 5'-AATGCTTATTTTAAAATGACAGTGGAA-3' (SEQ ID NO: 3813)

5'-CUUAUUUUAAAAUGACAGUGGAAGU-3' (SEQ ID NO: 6003)
3'-ACGAAUAAAAUUUUACUGUCACCUUCA-5' (SEQ ID NO: 2408)

KRAS-1010 Target: 5'-TGCTTATTTTAAAATGACAGTGGAAGT-3' (SEQ ID NO: 3814)

5'-GUGGAAGUUUUUUUUUCCUCUAAGU-3' (SEQ ID NO: 6004)
3'-GUCACCUUCAAAAAAAAAGGAGAUUCA-5' (SEQ ID NO: 2409)

KRAS-1027 Target: 5'-CAGTGGAAGTTTTTTTTTCCTCTAAGT-3' (SEQ ID NO: 3815)

5'-GGAAGUUUUUUUUUCCUCUAAGUGC-3' (SEQ ID NO: 6005)
3'-CACCUUCAAAAAAAAAGGAGAUUCACG-5' (SEQ ID NO: 2410)

KRAS-1029 Target: 5'-GTGGAAGTTTTTTTTTCCTCTAAGTGC-3' (SEQ ID NO: 3816)

5'-GAAGUUUUUUUUUCCUCUAAGUGCC-3' (SEQ ID NO: 6006)
3'-ACCUUCAAAAAAAAAGGAGAUUCACGG-5' (SEQ ID NO: 2411)

KRAS-1030 Target: 5'-TGGAAGTTTTTTTTTCCTCTAAGTGCC-3' (SEQ ID NO: 3817)

5'-UUUUGGUUUUUGAACUAGCAAUGCC-3' (SEQ ID NO: 6007)
3'-UCAAAACCAAAAACUUGAUCGUUACGG-5' (SEQ ID NO: 2412)

KRAS-1068 Target: 5'-AGTTTTGGTTTTTGAACTAGCAATGCC-3' (SEQ ID NO: 3818)

5'-GCCUGUGAAAAAGAAACUGAAUACC-3' (SEQ ID NO: 6008)
3'-UACGGACACUUUUUCUUUGACUUAUGG-5' (SEQ ID NO: 2413)

KRAS-1090 Target: 5'-ATGCCTGTGAAAAAGAAACTGAATACC-3' (SEQ ID NO: 3819)

5'-AAAAAGAAACUGAAUACCUAAGAUU-3' (SEQ ID NO: 6009)
3'-ACUUUUUCUUUGACUUAUGGAUUCUAA-5' (SEQ ID NO: 2414)

KRAS-1097 Target: 5'-TGAAAAAGAAACTGAATACCTAAGATT-3' (SEQ ID NO: 3820)

5'-AAAAGAAACUGAAUACCUAAGAUUU-3' (SEQ ID NO: 6010)
3'-CUUUUUCUUUGACUUAUGGAUUCUAAA-5' (SEQ ID NO: 2415)

KRAS-1098 Target: 5'-GAAAAAGAAACTGAATACCTAAGATTT-3' (SEQ ID NO: 3821)

5'-AACUGAAUACCUAAGAUUUCUGUCU-3' (SEQ ID NO: 6011)
3'-CUUUGACUUAUGGAUUCUAAAGACAGA-5' (SEQ ID NO: 2416)

KRAS-1104 Target: 5'-GAAACTGAATACCTAAGATTTCTGTCT-3' (SEQ ID NO: 3822)

5'-UGCAGUUGAUUACUUCUUAUUUUUC-3' (SEQ ID NO: 6012)
3'-GUACGUCAACUAAUGAAGAAUAAAAAG-5' (SEQ ID NO: 2417)

KRAS-1145 Target: 5'-CATGCAGTTGATTACTTCTTATTTTTC-3' (SEQ ID NO: 3823)

5'-GCAGUUGAUUACUUCUUAUUUUUCU-3' (SEQ ID NO: 6013)
3'-UACGUCAACUAAUGAAGAAUAAAAAGA-5' (SEQ ID NO: 2418)

KRAS-1146 Target: 5'-ATGCAGTTGATTACTTCTTATTTTTCT-3' (SEQ ID NO: 3824)

5'-UUGAUUACUUCUUAUUUUUCUUACC-3' (SEQ ID NO: 6014)
3'-UCAACUAAUGAAGAAUAAAAAGAAUGG-5' (SEQ ID NO: 2419)

KRAS-1150 Target: 5'-AGTTGATTACTTCTTATTTTTCTTACC-3' (SEQ ID NO: 3825)

5'-UUCUUAUUUUUCUUACCAAUUGUGA-3' (SEQ ID NO: 6015)
3'-UGAAGAAUAAAAAGAAUGGUUAACACU-5' (SEQ ID NO: 2420)

KRAS-1158 Target: 5'-ACTTCTTATTTTTCTTACCAATTGTGA-3' (SEQ ID NO: 3826)

5'-UCUUAUUUUUCUUACCAAUUGUGAA-3' (SEQ ID NO: 6016)
3'-GAAGAAUAAAAAGAAUGGUUAACACUU-5' (SEQ ID NO: 2421)

KRAS-1159 Target: 5'-CTTCTTATTTTTCTTACCAATTGTGAA-3' (SEQ ID NO: 3827)

5'-CUUAUUUUUCUUACCAAUUGUGAAU-3' (SEQ ID NO: 6017)
3'-AAGAAUAAAAAGAAUGGUUAACACUUA-5' (SEQ ID NO: 2422)

KRAS-1160 Target: 5'-TTCTTATTTTTCTTACCAATTGTGAAT-3' (SEQ ID NO: 3828)

5'-AUGUUGGUGUGAAACAAAUUAAUGA-3' (SEQ ID NO: 6018)
3'-CUUACAACCACACUUUGUUUAAUUACU-5' (SEQ ID NO: 2423)

KRAS-1183 Target: 5'-GAATGTTGGTGTGAAACAAATTAATGA-3' (SEQ ID NO: 3829)

5'-UUGGUGUGAAACAAAUUAAUGAAGC-3' (SEQ ID NO: 6019)
3'-ACAACCACACUUUGUUUAAUUACUUCG-5' (SEQ ID NO: 2424)

KRAS-1186 Target: 5'-TGTTGGTGTGAAACAAATTAATGAAGC-3' (SEQ ID NO: 3830)

5'-UGGUGUGAAACAAAUUAAUGAAGCU-3' (SEQ ID NO: 6020)
3'-CAACCACACUUUGUUUAAUUACUUCGA-5' (SEQ ID NO: 2425)

KRAS-1187 Target: 5'-GTTGGTGTGAAACAAATTAATGAAGCT-3' (SEQ ID NO: 3831)

5'-AACAAAUUAAUGAAGCUUUUGAAUC-3' (SEQ ID NO: 6021)
3'-CUUUGUUUAAUUACUUCGAAAACUUAG-5' (SEQ ID NO: 2426)

KRAS-1195 Target: 5'-GAAACAAATTAATGAAGCTTTTGAATC-3' (SEQ ID NO: 3832)

5'-ACAAAUUAAUGAAGCUUUUGAAUCA-3' (SEQ ID NO: 6022)
3'-UUUGUUUAAUUACUUCGAAAACUUAGU-5' (SEQ ID NO: 2427)

KRAS-1196 Target: 5'-AAACAAATTAATGAAGCTTTTGAATCA-3' (SEQ ID NO: 3833)

5'-UCUGUGUUUUAUCUAGUCACAUAAA-3' (SEQ ID NO: 6023)
3'-UAAGACACAAAAUAGAUCAGUGUAUUU-5' (SEQ ID NO: 2428)

KRAS-1228 Target: 5'-ATTCTGTGTTTTATCTAGTCACATAAA-3' (SEQ ID NO: 3834)

5'-CUGUGUUUUAUCUAGUCACAUAAAU-3' (SEQ ID NO: 6024)
3'-AAGACACAAAAUAGAUCAGUGUAUUUA-5' (SEQ ID NO: 2429)

KRAS-1229 Target: 5'-TTCTGTGTTTTATCTAGTCACATAAAT-3' (SEQ ID NO: 3835)

5'-UGUUUUAUCUAGUCACAUAAAUGGA-3' (SEQ ID NO: 6025)
3'-ACACAAAAUAGAUCAGUGUAUUUACCU-5' (SEQ ID NO: 2430)

KRAS-1232 Target: 5'-TGTGTTTTATCTAGTCACATAAATGGA-3' (SEQ ID NO: 3836)

5'-GUUUUAUCUAGUCACAUAAAUGGAU-3' (SEQ ID NO: 6026)
3'-CACAAAAUAGAUCAGUGUAUUUACCUA-5' (SEQ ID NO: 2431)

KRAS-1233 Target: 5'-GTGTTTTATCTAGTCACATAAATGGAT-3' (SEQ ID NO: 3837)

5'-AUCUAGUCACAUAAAUGGAUUAAUU-3' (SEQ ID NO: 6027)
3'-AAUAGAUCAGUGUAUUUACCUAAUUAA-5' (SEQ ID NO: 2432)

KRAS-1238 Target: 5'-TTATCTAGTCACATAAATGGATTAATT-3' (SEQ ID NO: 3838)

5'-UCUAGUCACAUAAAUGGAUUAAUUA-3' (SEQ ID NO: 6028)
3'-AUAGAUCAGUGUAUUUACCUAAUUAAU-5' (SEQ ID NO: 2433)

KRAS-1239 Target: 5'-TATCTAGTCACATAAATGGATTAATTA-3' (SEQ ID NO: 3839)

5'-CAUAAAUGGAUUAAUUACUAAUUUC-3' (SEQ ID NO: 6029)
3'-GUGUAUUUACCUAAUUAAUGAUUAAAG-5' (SEQ ID NO: 2434)

KRAS-1247 Target: 5'-CACATAAATGGATTAATTACTAATTTC-3' (SEQ ID NO: 3840)

5'-AUAAAUGGAUUAAUUACUAAUUUCA-3' (SEQ ID NO: 6030)
3'-UGUAUUUACCUAAUUAAUGAUUAAAGU-5' (SEQ ID NO: 2435)

KRAS-1248 Target: 5'-ACATAAATGGATTAATTACTAATTTCA-3' (SEQ ID NO: 3841)

5'-UGGAUUAAUUACUAAUUUCAGUUGA-3' (SEQ ID NO: 6031)
3'-UUACCUAAUUAAUGAUUAAAGUCAACU-5' (SEQ ID NO: 2436)

KRAS-1253 Target: 5'-AATGGATTAATTACTAATTTCAGTTGA-3' (SEQ ID NO: 3842)

5'-GAUUAAUUACUAAUUUCAGUUGAGA-3' (SEQ ID NO: 6032)
3'-ACCUAAUUAAUGAUUAAAGUCAACUCU-5' (SEQ ID NO: 2437)

KRAS-1255 Target: 5'-TGGATTAATTACTAATTTCAGTTGAGA-3' (SEQ ID NO: 3843)

5'-AUUAAUUACUAAUUUCAGUUGAGAC-3' (SEQ ID NO: 6033)
3'-CCUAAUUAAUGAUUAAAGUCAACUCUG-5' (SEQ ID NO: 2438)

KRAS-1256 Target: 5'-GGATTAATTACTAATTTCAGTTGAGAC-3' (SEQ ID NO: 3844)

5'-UUAAUUACUAAUUUCAGUUGAGACC-3' (SEQ ID NO: 6034)
3'-CUAAUUAAUGAUUAAAGUCAACUCUGG-5' (SEQ ID NO: 2439)

KRAS-1257 Target: 5'-GATTAATTACTAATTTCAGTTGAGACC-3' (SEQ ID NO: 3845)

5'-UAAUUGGUUUUUACUGAAACAUUGA-3' (SEQ ID NO: 6035)
3'-AGAUUAACCAAAAAUGACUUUGUAACU-5' (SEQ ID NO: 2440)

KRAS-1285 Target: 5'-TCTAATTGGTTTTTACTGAAACATTGA-3' (SEQ ID NO: 3846)

5'-UGGUUUUUACUGAAACAUUGAGGGA-3' (SEQ ID NO: 6036)
3'-UAACCAAAAAUGACUUUGUAACUCCCU-5' (SEQ ID NO: 2441)

KRAS-1289 Target: 5'-ATTGGTTTTTACTGAAACATTGAGGGA-3' (SEQ ID NO: 3847)

5'-GGUUUUUACUGAAACAUUGAGGGAA-3' (SEQ ID NO: 6037)
3'-AACCAAAAAUGACUUUGUAACUCCCUU-5' (SEQ ID NO: 2442)

KRAS-1290 Target: 5'-TTGGTTTTTACTGAAACATTGAGGGAA-3' (SEQ ID NO: 3848)

5'-AUUGAGGGAACACAAAUUUAUGGGC-3' (SEQ ID NO: 6038)
3'-UGUAACUCCCUUGUGUUUAAAUACCCG-5' (SEQ ID NO: 2443)

KRAS-1305 Target: 5'-ACATTGAGGGAACACAAATTTATGGGC-3' (SEQ ID NO: 3849)

5'-UUGAGGGAACACAAAUUUAUGGGCU-3' (SEQ ID NO: 6039)
3'-GUAACUCCCUUGUGUUUAAAUACCCGA-5' (SEQ ID NO: 2444)

KRAS-1306 Target: 5'-CATTGAGGGAACACAAATTTATGGGCT-3' (SEQ ID NO: 3850)

5'-UGAUGAAUGUAAAGUUACACUGUUC-3' (SEQ ID NO: 6040)
3'-GGACUACUUACAUUUCAAUGUGACAAG-5' (SEQ ID NO: 2445)

KRAS-1379 Target: 5'-CCTGATGAATGTAAAGTTACACTGTTC-3' (SEQ ID NO: 3851)

5'-GAUGAAUGUAAAGUUACACUGUUCA-3' (SEQ ID NO: 6041)
3'-GACUACUUACAUUUCAAUGUGACAAGU-5' (SEQ ID NO: 2446)

KRAS-1380 Target: 5'-CTGATGAATGTAAAGTTACACTGTTCA-3' (SEQ ID NO: 3852)

5'-CCAAAAUAUUAUAUUUUUUCUAUAA-3' (SEQ ID NO: 6042)
3'-GGGGUUUUAUAAUAUAAAAAAGAUAUU-5' (SEQ ID NO: 2447)

KRAS-1452 Target: 5'-CCCCAAAATATTATATTTTTTCTATAA-3' (SEQ ID NO: 3853)

5'-CAAAAUAUUAUAUUUUUUCUAUAAA-3' (SEQ ID NO: 6043)
3'-GGGUUUUAUAAUAUAAAAAAGAUAUUU-5' (SEQ ID NO: 2448)

KRAS-1453 Target: 5'-CCCAAAATATTATATTTTTTCTATAAA-3' (SEQ ID NO: 3854)

5'-AAAAUAUUAUAUUUUUUCUAUAAAA-3' (SEQ ID NO: 6044)
3'-GGUUUUAUAAUAUAAAAAAGAUAUUUU-5' (SEQ ID NO: 2449)

KRAS-1454 Target: 5'-CCAAAATATTATATTTTTTCTATAAAA-3' (SEQ ID NO: 3855)

5'-AAAUAUUAUAUUUUUUCUAUAAAAA-3' (SEQ ID NO: 6045)
3'-GUUUUAUAAUAUAAAAAAGAUAUUUUU-5' (SEQ ID NO: 2450)

KRAS-1455 Target: 5'-CAAAATATTATATTTTTTCTATAAAAA-3' (SEQ ID NO: 3856)

5'-AUAUUAUAUUUUUUCUAUAAAAAGA-3' (SEQ ID NO: 6046)
3'-UUUAUAAUAUAAAAAAGAUAUUUUUCU-5' (SEQ ID NO: 2451)

KRAS-1457 Target: 5'-AAATATTATATTTTTTCTATAAAAAGA-3' (SEQ ID NO: 3857)

5'-UAUUAUAUUUUUUCUAUAAAAAGAA-3' (SEQ ID NO: 6047)
3'-UUAUAAUAUAAAAAAGAUAUUUUUCUU-5' (SEQ ID NO: 2452)

KRAS-1458 Target: 5'-AATATTATATTTTTTCTATAAAAAGAA-3' (SEQ ID NO: 3858)

5'-AUUAUAUUUUUUCUAUAAAAAGAAA-3' (SEQ ID NO: 6048)
3'-UAUAAUAUAAAAAAGAUAUUUUUCUUU-5' (SEQ ID NO: 2453)

KRAS-1459 Target: 5'-ATATTATATTTTTTCTATAAAAAGAAA-3' (SEQ ID NO: 3859)

5'-UUAUAUUUUUUCUAUAAAAAGAAAA-3' (SEQ ID NO: 6049)
3'-AUAAUAUAAAAAAGAUAUUUUUCUUUU-5' (SEQ ID NO: 2454)

KRAS-1460 Target: 5'-TATTATATTTTTTCTATAAAAAGAAAA-3' (SEQ ID NO: 3860)

5'-UAUAUUUUUUCUAUAAAAAGAAAAA-3' (SEQ ID NO: 6050)
3'-UAAUAUAAAAAAGAUAUUUUUCUUUUU-5' (SEQ ID NO: 2455)

KRAS-1461 Target: 5'-ATTATATTTTTTCTATAAAAAGAAAAA-3' (SEQ ID NO: 3861)

5'-AUAUUUUUUCUAUAAAAAGAAAAAA-3' (SEQ ID NO: 6051)
3'-AAUAUAAAAAAGAUAUUUUUCUUUUUU-5' (SEQ ID NO: 2456)

KRAS-1462 Target: 5'-TTATATTTTTTCTATAAAAAGAAAAAA-3' (SEQ ID NO: 3862)

5'-UAUUUUUUCUAUAAAAAGAAAAAAA-3' (SEQ ID NO: 6052)
3'-AUAUAAAAAAGAUAUUUUUCUUUUUUU-5' (SEQ ID NO: 2457)

KRAS-1463 Target: 5'-TATATTTTTTCTATAAAAAGAAAAAAA-3' (SEQ ID NO: 3863)

5'-AUUUUUUCUAUAAAAAGAAAAAAAU-3' (SEQ ID NO: 6053)
3'-UAUAAAAAAGAUAUUUUUCUUUUUUUA-5' (SEQ ID NO: 2458)

KRAS-1464 Target: 5'-ATATTTTTTCTATAAAAAGAAAAAAAT-3' (SEQ ID NO: 3864)

5'-UUCUAUAAAAAGAAAAAAAUGGAAA-3' (SEQ ID NO: 6054)
3'-AAAAGAUAUUUUUCUUUUUUUACCUUU-5' (SEQ ID NO: 2459)

KRAS-1469 Target: 5'-TTTTCTATAAAAAGAAAAAAATGGAAA-3' (SEQ ID NO: 3865)

5'-UCUAUAAAAAGAAAAAAAUGGAAAA-3' (SEQ ID NO: 6055)
3'-AAAGAUAUUUUUCUUUUUUUACCUUUU-5' (SEQ ID NO: 2460)

KRAS-1470 Target: 5'-TTTCTATAAAAAGAAAAAAATGGAAAA-3' (SEQ ID NO: 3866)

5'-UAUAAAAAGAAAAAAAUGGAAAAAA-3' (SEQ ID NO: 6056)
3'-AGAUAUUUUUCUUUUUUUACCUUUUUU-5' (SEQ ID NO: 2461)

KRAS-1472 Target: 5'-TCTATAAAAAGAAAAAAATGGAAAAAA-3' (SEQ ID NO: 3867)

5'-AUAAAAAGAAAAAAAUGGAAAAAAA-3' (SEQ ID NO: 6057)
3'-GAUAUUUUUCUUUUUUUACCUUUUUUU-5' (SEQ ID NO: 2462)

KRAS-1473 Target: 5'-CTATAAAAAGAAAAAAATGGAAAAAAA-3' (SEQ ID NO: 3868)

5'-UAAAAAGAAAAAAAUGGAAAAAAAU-3' (SEQ ID NO: 6058)
3'-AUAUUUUUCUUUUUUUACCUUUUUUUA-5' (SEQ ID NO: 2463)

KRAS-1474 Target: 5'-TATAAAAAGAAAAAAATGGAAAAAAAT-3' (SEQ ID NO: 3869)

5'-AAAAAGAAAAAAAUGGAAAAAAAUU-3' (SEQ ID NO: 6059)
3'-UAUUUUUCUUUUUUUACCUUUUUUUAA-5' (SEQ ID NO: 2464)

KRAS-1475 Target: 5'-ATAAAAAGAAAAAAATGGAAAAAAATT-3' (SEQ ID NO: 3870)

5'-AAAAGAAAAAAAUGGAAAAAAAUUA-3' (SEQ ID NO: 6060)
3'-AUUUUUCUUUUUUUACCUUUUUUUAAU-5' (SEQ ID NO: 2465)

KRAS-1476 Target: 5'-TAAAAAGAAAAAAATGGAAAAAAATTA-3' (SEQ ID NO: 3871)

5'-AAAGAAAAAAAUGGAAAAAAAUUAC-3' (SEQ ID NO: 6061)
3'-UUUUUCUUUUUUUACCUUUUUUUAAUG-5' (SEQ ID NO: 2466)

KRAS-1477 Target: 5'-AAAAAGAAAAAAATGGAAAAAAATTAC-3' (SEQ ID NO: 3872)

5'-AAGAAAAAAAUGGAAAAAAAUUACA-3' (SEQ ID NO: 6062)
3'-UUUUCUUUUUUUACCUUUUUUUAAUGU-5' (SEQ ID NO: 2467)

KRAS-1478 Target: 5'-AAAAGAAAAAAATGGAAAAAAATTACA-3' (SEQ ID NO: 3873)

5'-AAAAAAUGGAAAAAAAUUACAAGGC-3' (SEQ ID NO: 6063)
3'-CUUUUUUUACCUUUUUUUAAUGUUCCG-5' (SEQ ID NO: 2468)

KRAS-1482 Target: 5'-GAAAAAAATGGAAAAAAATTACAAGGC-3' (SEQ ID NO: 3874)

5'-AAAAAUGGAAAAAAAUUACAAGGCA-3' (SEQ ID NO: 6064)
3'-UUUUUUUACCUUUUUUUAAUGUUCCGU-5' (SEQ ID NO: 2469)

KRAS-1483 Target: 5'-AAAAAAATGGAAAAAAATTACAAGGCA-3' (SEQ ID NO: 3875)

5'-UGGAAAAAAAUUACAAGGCAAUGGA-3' (SEQ ID NO: 6065)
3'-UUACCUUUUUUUAAUGUUCCGUUACCU-5' (SEQ ID NO: 2470)

KRAS-1488 Target: 5'-AATGGAAAAAAATTACAAGGCAATGGA-3' (SEQ ID NO: 3876)

5'-GGAAAAAAAUUACAAGGCAAUGGAA-3' (SEQ ID NO: 6066)
3'-UACCUUUUUUUAAUGUUCCGUUACCUU-5' (SEQ ID NO: 2471)

KRAS-1489 Target: 5'-ATGGAAAAAAATTACAAGGCAATGGAA-3' (SEQ ID NO: 3877)

5'-GAAAAAAAUUACAAGGCAAUGGAAA-3' (SEQ ID NO: 6067)
3'-ACCUUUUUUUAAUGUUCCGUUACCUUU-5' (SEQ ID NO: 2472)

KRAS-1490 Target: 5'-TGGAAAAAAATTACAAGGCAATGGAAA-3' (SEQ ID NO: 3878)

5'-GCCAUUUCCUUUUCACAUUAGAUAA-3' (SEQ ID NO: 6068)
3'-UCCGGUAAAGGAAAAGUGUAAUCUAUU-5' (SEQ ID NO: 2473)

KRAS-1525 Target: 5'-AGGCCATTTCCTTTTCACATTAGATAA-3' (SEQ ID NO: 3879)

5'-UCCUUUUCACAUUAGAUAAAUUACU-3' (SEQ ID NO: 6069)
3'-AAAGGAAAAGUGUAAUCUAUUUAAUGA-5' (SEQ ID NO: 2474)

KRAS-1531 Target: 5'-TTTCCTTTTCACATTAGATAAATTACT-3' (SEQ ID NO: 3880)

5'-CACAUUAGAUAAAUUACUAUAAAGA-3' (SEQ ID NO: 6070)
3'-AAGUGUAAUCUAUUUAAUGAUAUUUCU-5' (SEQ ID NO: 2475)

KRAS-1538 Target: 5'-TTCACATTAGATAAATTACTATAAAGA-3' (SEQ ID NO: 3881)

5'-ACAUUAGAUAAAUUACUAUAAAGAC-3' (SEQ ID NO: 6071)
3'-AGUGUAAUCUAUUUAAUGAUAUUUCUG-5' (SEQ ID NO: 2476)

KRAS-1539 Target: 5'-TCACATTAGATAAATTACTATAAAGAC-3' (SEQ ID NO: 3882)

5'-CAUUAGAUAAAUUACUAUAAAGACU-3' (SEQ ID NO: 6072)
3'-GUGUAAUCUAUUUAAUGAUAUUUCUGA-5' (SEQ ID NO: 2477)

KRAS-1540 Target: 5'-CACATTAGATAAATTACTATAAAGACT-3' (SEQ ID NO: 3883)

5'-AGUAUGAAAUGGGGAUUAUUAUAGC-3' (SEQ ID NO: 6073)
3'-GGUCAUACUUUACCCCUAAUAAUAUCG-5' (SEQ ID NO: 2478)

KRAS-1595 Target: 5'-CCAGTATGAAATGGGGATTATTATAGC-3' (SEQ ID NO: 3884)

5'-UGGGGAUUAUUAUAGCAACCAUUUU-3' (SEQ ID NO: 6074)
3'-UUACCCCUAAUAAUAUCGUUGGUAAAA-5' (SEQ ID NO: 2479)

KRAS-1604 Target: 5'-AATGGGGATTATTATAGCAACCATTTT-3' (SEQ ID NO: 3885)

5'-GGCUAUAUUUACAUGCUACUAAAUU-3' (SEQ ID NO: 6075)
3'-CCCCGAUAUAAAUGUACGAUGAUUUAA-5' (SEQ ID NO: 2480)

KRAS-1631 Target: 5'-GGGGCTATATTTACATGCTACTAAATT-3' (SEQ ID NO: 3886)

5'-GCUAUAUUUACAUGCUACUAAAUUU-3' (SEQ ID NO: 6076)
3'-CCCGAUAUAAAUGUACGAUGAUUUAAA-5' (SEQ ID NO: 2481)

KRAS-1632 Target: 5'-GGGCTATATTTACATGCTACTAAATTT-3' (SEQ ID NO: 3887)

5'-CUAUAUUUACAUGCUACUAAAUUUU-3' (SEQ ID NO: 6077)
3'-CCGAUAUAAAUGUACGAUGAUUUAAAA-5' (SEQ ID NO: 2482)

KRAS-1633 Target: 5'-GGCTATATTTACATGCTACTAAATTTT-3' (SEQ ID NO: 3888)

5'-UAUAUUUACAUGCUACUAAAUUUUU-3' (SEQ ID NO: 6078)
3'-CGAUAUAAAUGUACGAUGAUUUAAAAA-5' (SEQ ID NO: 2483)

KRAS-1634 Target: 5'-GCTATATTTACATGCTACTAAATTTTT-3' (SEQ ID NO: 3889)

5'-AUAUUUACAUGCUACUAAAUUUUUA-3' (SEQ ID NO: 6079)
3'-GAUAUAAAUGUACGAUGAUUUAAAAAU-5' (SEQ ID NO: 2484)

KRAS-1635 Target: 5'-CTATATTTACATGCTACTAAATTTTTA-3' (SEQ ID NO: 3890)

5'-UACAUGCUACUAAAUUUUUAUAAUA-3' (SEQ ID NO: 6080)
3'-AAAUGUACGAUGAUUUAAAAAUAUUAU-5' (SEQ ID NO: 2485)

KRAS-1640 Target: 5'-TTTACATGCTACTAAATTTTTATAATA-3' (SEQ ID NO: 3891)

5'-UACUAAAUUUUUAUAAUAAUUGAAA-3' (SEQ ID NO: 6081)
3'-CGAUGAUUUAAAAAUAUUAUUAACUUU-5' (SEQ ID NO: 2486)

KRAS-1647 Target: 5'-GCTACTAAATTTTTATAATAATTGAAA-3' (SEQ ID NO: 3892)

5'-ACUAAAUUUUUAUAAUAAUUGAAAA-3' (SEQ ID NO: 6082)
3'-GAUGAUUUAAAAAUAUUAUUAACUUUU-5' (SEQ ID NO: 2487)

KRAS-1648 Target: 5'-CTACTAAATTTTTATAATAATTGAAAA-3' (SEQ ID NO: 3893)

5'-UAAAUUUUUAUAAUAAUUGAAAAGA-3' (SEQ ID NO: 6083)
3'-UGAUUUAAAAAUAUUAUUAACUUUUCU-5' (SEQ ID NO: 2488)

KRAS-1650 Target: 5'-ACTAAATTTTTATAATAATTGAAAAGA-3' (SEQ ID NO: 3894)

5'-AAAUUUUUAUAAUAAUUGAAAAGAU-3' (SEQ ID NO: 6084)
3'-GAUUUAAAAAUAUUAUUAACUUUUCUA-5' (SEQ ID NO: 2489)

KRAS-1651 Target: 5'-CTAAATTTTTATAATAATTGAAAAGAT-3' (SEQ ID NO: 3895)

5'-AAUUUUUAUAAUAAUUGAAAAGAUU-3' (SEQ ID NO: 6085)
3'-AUUUAAAAAUAUUAUUAACUUUUCUAA-5' (SEQ ID NO: 2490)

KRAS-1652 Target: 5'-TAAATTTTTATAATAATTGAAAAGATT-3' (SEQ ID NO: 3896)

5'-AUUUUUAUAAUAAUUGAAAAGAUUU-3' (SEQ ID NO: 6086)
3'-UUUAAAAAUAUUAUUAACUUUUCUAAA-5' (SEQ ID NO: 2491)

KRAS-1653 Target: 5'-AAATTTTTATAATAATTGAAAAGATTT-3' (SEQ ID NO: 3897)

5'-UUUUUAUAAUAAUUGAAAAGAUUUU-3' (SEQ ID NO: 6087)
3'-UUAAAAAUAUUAUUAACUUUUCUAAAA-5' (SEQ ID NO: 2492)

KRAS-1654 Target: 5'-AATTTTTATAATAATTGAAAAGATTTT-3' (SEQ ID NO: 3898)

5'-UUUUAUAAUAAUUGAAAAGAUUUUA-3' (SEQ ID NO: 6088)
3'-UAAAAAUAUUAUUAACUUUUCUAAAAU-5' (SEQ ID NO: 2493)

KRAS-1655 Target: 5'-ATTTTTATAATAATTGAAAAGATTTTA-3' (SEQ ID NO: 3899)

5'-UUUAUAAUAAUUGAAAAGAUUUUAA-3' (SEQ ID NO: 6089)
3'-AAAAAUAUUAUUAACUUUUCUAAAAUU-5' (SEQ ID NO: 2494)

KRAS-1656 Target: 5'-TTTTTATAATAATTGAAAAGATTTTAA-3' (SEQ ID NO: 3900)

5'-UUAUAAUAAUUGAAAAGAUUUUAAC-3' (SEQ ID NO: 6090)
3'-AAAAUAUUAUUAACUUUUCUAAAAUUG-5' (SEQ ID NO: 2495)

KRAS-1657 Target: 5'-TTTTATAATAATTGAAAAGATTTTAAC-3' (SEQ ID NO: 3901)

5'-UAUAAUAAUUGAAAAGAUUUUAACA-3' (SEQ ID NO: 6091)
3'-AAAUAUUAUUAACUUUUCUAAAAUUGU-5' (SEQ ID NO: 2496)

KRAS-1658 Target: 5'-TTTATAATAATTGAAAAGATTTTAACA-3' (SEQ ID NO: 3902)

5'-AUAAUUGAAAAGAUUUUAACAAGUA-3' (SEQ ID NO: 6092)
3'-AUUAUUAACUUUUCUAAAAUUGUUCAU-5' (SEQ ID NO: 2497)

KRAS-1662 Target: 5'-TAATAATTGAAAAGATTTTAACAAGTA-3' (SEQ ID NO: 3903)

5'-UAAUUGAAAAGAUUUUAACAAGUAU-3' (SEQ ID NO: 6093)
3'-UUAUUAACUUUUCUAAAAUUGUUCAUA-5' (SEQ ID NO: 2498)

KRAS-1663 Target: 5'-AATAATTGAAAAGATTTTAACAAGTAT-3' (SEQ ID NO: 3904)

5'-AUUGAAAAGAUUUUAACAAGUAUAA-3' (SEQ ID NO: 6094)
3'-AUUAACUUUUCUAAAAUUGUUCAUAUU-5' (SEQ ID NO: 2499)

KRAS-1665 Target: 5'-TAATTGAAAAGATTTTAACAAGTATAA-3' (SEQ ID NO: 3905)

5'-UUGAAAAGAUUUUAACAAGUAUAAA-3' (SEQ ID NO: 6095)
3'-UUAACUUUUCUAAAAUUGUUCAUAUUU-5' (SEQ ID NO: 2500)

KRAS-1666 Target: 5'-AATTGAAAAGATTTTAACAAGTATAAA-3' (SEQ ID NO: 3906)

5'-UGAAAAGAUUUUAACAAGUAUAAAA-3' (SEQ ID NO: 6096)
3'-UAACUUUUCUAAAAUUGUUCAUAUUUU-5' (SEQ ID NO: 2501)

KRAS-1667 Target: 5'-ATTGAAAAGATTTTAACAAGTATAAAA-3' (SEQ ID NO: 3907)

5'-GAAAAGAUUUUAACAAGUAUAAAAA-3' (SEQ ID NO: 6097)
3'-AACUUUUCUAAAAUUGUUCAUAUUUUU-5' (SEQ ID NO: 2502)

KRAS-1668 Target: 5'-TTGAAAAGATTTTAACAAGTATAAAAA-3' (SEQ ID NO: 3908)

5'-AAAAGAUUUUAACAAGUAUAAAAAA-3' (SEQ ID NO: 6098)
3'-ACUUUUCUAAAAUUGUUCAUAUUUUUU-5' (SEQ ID NO: 2503)

KRAS-1669 Target: 5'-TGAAAAGATTTTAACAAGTATAAAAAA-3' (SEQ ID NO: 3909)

5'-AAAGAUUUUAACAAGUAUAAAAAAU-3' (SEQ ID NO: 6099)
3'-CUUUUCUAAAAUUGUUCAUAUUUUUUA-5' (SEQ ID NO: 2504)

KRAS-1670 Target: 5'-GAAAAGATTTTAACAAGTATAAAAAAT-3' (SEQ ID NO: 3910)

5'-AAGAUUUUAACAAGUAUAAAAAAAUU-3' (SEQ ID NO: 6100)
3'-UUUUCUAAAAUUGUUCAUAUUUUUUAA-5' (SEQ ID NO: 2505)

KRAS-1671 Target: 5'-AAAAGATTTTAACAAGTATAAAAAATT-3' (SEQ ID NO: 3911)

5'-AGAUUUUAACAAGUAUAAAAAAAUUC-3' (SEQ ID NO: 6101)
3'-UUUCUAAAAUUGUUCAUAUUUUUUAAG-5' (SEQ ID NO: 2506)

KRAS-1672 Target: 5'-AAAGATTTTAACAAGTATAAAAAATTC-3' (SEQ ID NO: 3912)

5'-GAUUUUAACAAGUAUAAAAAAAUUCU-3' (SEQ ID NO: 6102)
3'-UUCUAAAAUUGUUCAUAUUUUUUAAGA-5' (SEQ ID NO: 2507)

KRAS-1673 Target: 5'-AAGATTTTAACAAGTATAAAAAATTCT-3' (SEQ ID NO: 3913)

5'-ACAAGUAUAAAAAAAUUCUCAUAGGA-3' (SEQ ID NO: 6103)
3'-AUUGUUCAUAUUUUUUAAGAGUAUCCU-5' (SEQ ID NO: 2508)

KRAS-1680 Target: 5'-TAACAAGTATAAAAAATTCTCATAGGA-3' (SEQ ID NO: 3914)

5'-CAAGUAUAAAAAAUUCUCAUAGGAA-3' (SEQ ID NO: 6104)
3'-UUGUUCAUAUUUUUUAAGAGUAUCCUU-5' (SEQ ID NO: 2509)

KRAS-1681 Target: 5'-AACAAGTATAAAAAATTCTCATAGGAA-3' (SEQ ID NO: 3915)

5'-AAGUAUAAAAAAUUCUCAUAGGAAU-3' (SEQ ID NO: 6105)
3'-UGUUCAUAUUUUUUAAGAGUAUCCUUA-5' (SEQ ID NO: 2510)

KRAS-1682 Target: 5'-ACAAGTATAAAAAATTCTCATAGGAAT-3' (SEQ ID NO: 3916)

5'-AGUAUAAAAAAUUCUCAUAGGAAUU-3' (SEQ ID NO: 6106)
3'-GUUCAUAUUUUUUAAGAGUAUCCUUAA-5' (SEQ ID NO: 2511)

KRAS-1683 Target: 5'-CAAGTATAAAAAATTCTCATAGGAATT-3' (SEQ ID NO: 3917)

5'-GUAUAAAAAAUUCUCAUAGGAAUUA-3' (SEQ ID NO: 6107)
3'-UUCAUAUUUUUUAAGAGUAUCCUUAAU-5' (SEQ ID NO: 2512)

KRAS-1684 Target: 5'-AAGIATAAAAAATTCTCATAGGAATTA-3' (SEQ ID NO: 3918)

5'-UAUAAAAAAUUCUCAUAGGAAUUAA-3' (SEQ ID NO: 6108)
3'-UCAUAUUUUUUAAGAGUAUCCUUAAUU-5' (SEQ ID NO: 2513)

KRAS-1685 Target: 5'-AGTATAAAAAATTCTCATAGGAATTAA-3' (SEQ ID NO: 3919)

5'-AUAAAAAAUUCUCAUAGGAAUUAAA-3' (SEQ ID NO: 6109)
3'-CAUAUUUUUUAAGAGUAUCCUUAAUUU-5' (SEQ ID NO: 2514)

KRAS-1686 Target: 5'-GTATAAAAAATTCTCATAGGAATTAAA-3' (SEQ ID NO: 3920)

5'-UAAAAAAUUCUCAUAGGAAUUAAAU-3' (SEQ ID NO: 6110)
3'-AUAUUUUUUAAGAGUAUCCUUAAUUUA-5' (SEQ ID NO: 2515)

KRAS-1687 Target: 5'-TATAAAAAATTCTCATAGGAATTAAAT-3' (SEQ ID NO: 3921)

5'-AAAAAUUCUCAUAGGAAUUAAAUGU-3' (SEQ ID NO: 6111)
3'-AUUUUUUAAGAGUAUCCUUAAUUUACA-5' (SEQ ID NO: 2516)

KRAS-1689 Target: 5'-TAAAAAATTCTCATAGGAATTAAATGT-3' (SEQ ID NO: 3922)

5'-AAAAUUCUCAUAGGAAUUAAAUGUA-3' (SEQ ID NO: 6112)
3'-UUUUUUAAGAGUAUCCUUAAUUUACAU-5' (SEQ ID NO: 2517)

KRAS-1690 Target: 5'-AAAAAATTCTCATAGGAATTAAATGTA-3' (SEQ ID NO: 3923)

5'-CUCUUUCAUAGUAUAACUUUAAAUC-3' (SEQ ID NO: 6113)
3'-ACGAGAAAGUAUCAUAUUGAAAUUUAG-5' (SEQ ID NO: 2518)

KRAS-1734 Target: 5'-TGCTCTTTCATAGTATAACTTTAAATC-3' (SEQ ID NO: 3924)

5'-UCAUAGUAUAACUUUAAAUCUUUUC-3' (SEQ ID NO: 6114)
3'-AAAGUAUCAUAUUGAAAUUUAGAAAAG-5' (SEQ ID NO: 2519)

KRAS-1739 Target: 5'-TTTCATAGTATAACTTTAAATCTTTTC-3' (SEQ ID NO: 3925)

5'-CAUAGUAUAACUUUAAAUCUUUUCU-3' (SEQ ID NO: 6115)
3'-AAGUAUCAUAUUGAAAUUUAGAAAAGA-5' (SEQ ID NO: 2520)

KRAS-1740 Target: 5'-TTCATAGTATAACTTTAAATCTTTTCT-3' (SEQ ID NO: 3926)

5'-UUUAAAUCUUUUCUUCAACUUGAGU-3' (SEQ ID NO: 6116)
3'-UGAAAUUUAGAAAAGAAGUUGAACUCA-5' (SEQ ID NO: 2521)

KRAS-1751 Target: 5'-ACTTTAAATCTTTTCTTCAACTTGAGT-3' (SEQ ID NO: 3927)

5'-UUAAAUCUUUUCUUCAACUUGAGUC-3' (SEQ ID NO: 6117)
3'-GAAAUUUAGAAAAGAAGUUGAACUCAG-5' (SEQ ID NO: 2522)

KRAS-1752 Target: 5'-CTTTAAATCTTTTCTTCAACTTGAGTC-3' (SEQ ID NO: 3928)

5'-AACUUGAGUCUUUGAAGAUAGUUUU-3' (SEQ ID NO: 6118)
3'-AGUUGAACUCAGAAACUUCUAUCAAAA-5' (SEQ ID NO: 2523)

KRAS-1767 Target: 5'-TCAACTTGAGTCTTTGAAGATAGTTTT-3' (SEQ ID NO: 3929)

5'-CUUGAGUCUUUGAAGAUAGUUUUAA-3' (SEQ ID NO: 6119)
3'-UUGAACUCAGAAACUUCUAUCAAAAUU-5' (SEQ ID NO: 2524)

KRAS-1769 Target: 5'-AACTTGAGTCTTTGAAGATAGTTTTAA-3' (SEQ ID NO: 3930)

5'-UUGAGUCUUUGAAGAUAGUUUUAAU-3' (SEQ ID NO: 6120)
3'-UGAACUCAGAAACUUCUAUCAAAAUUA-5' (SEQ ID NO: 2525)

KRAS-1770 Target: 5'-ACTTGAGTCTTTGAAGATAGTTTTAAT-3' (SEQ ID NO: 3931)

5'-AAGAUAGUUUUAAUUCUGCUUGUGA-3' (SEQ ID NO: 6121)
3'-ACUUCUAUCAAAAUUAAGACGAACACU-5' (SEQ ID NO: 2526)

KRAS-1781 Target: 5'-TGAAGATAGTTTTAATTCTGCTTGTGA-3' (SEQ ID NO: 3932)

5'-AGAUAGUUUUAAUUCUGCUUGUGAC-3' (SEQ ID NO: 6122)
3'-CUUCUAUCAAAAUUAAGACGAACACUG-5' (SEQ ID NO: 2527)

KRAS-1782 Target: 5'-GAAGATAGTTTTAATTCTGCTTGTGAC-3' (SEQ ID NO: 3933)

5'-GAUAGUUUUAAUUCUGCUUGUGACA-3' (SEQ ID NO: 6123)
3'-UUCUAUCAAAAUUAAGACGAACACUGU-5' (SEQ ID NO: 2528)

KRAS-1783 Target: 5'-AAGATAGTTTTAATTCTGCTTGTGACA-3' (SEQ ID NO: 3934)

5'-UGCUUGUGACAUUAAAAGAUUAUUU-3' (SEQ ID NO: 6124)
3'-AGACGAACACUGUAAUUUUCUAAUAAA-5' (SEQ ID NO: 2529)

KRAS-1797 Target: 5'-TCTGCTTGTGACATTAAAAGATTATTT-3' (SEQ ID NO: 3935)

5'-AGCAUUGCUUUUGUUUCUUAAGAAA-3' (SEQ ID NO: 6125)
3'-UCUCGUAACGAAAACAAAGAAUUCUUU-5' (SEQ ID NO: 2530)

KRAS-2045 Target: 5'-AGAGCATTGCTTTTGTTTCTTAAGAAA-3' (SEQ ID NO: 3936)

5'-GCAUUGCUUUUGUUUCUUAAGAAAA-3' (SEQ ID NO: 6126)
3'-CUCGUAACGAAAACAAAGAAUUCUUUU-5' (SEQ ID NO: 2531)

KRAS-2046 Target: 5'-GAGCATTGCTTTTGTTTCTTAAGAAAA-3' (SEQ ID NO: 3937)

5'-CUUUUGUUUCUUAAGAAAACAAACU-3' (SEQ ID NO: 6127)
3'-ACGAAAACAAAGAAUUCUUUUGUUUGA-5' (SEQ ID NO: 2532)

KRAS-2052 Target: 5'-TGCTTTTGTTTCTTAAGAAAACAAACT-3' (SEQ ID NO: 3938)

5'-UUCUUAAGAAAACAAACUCUUUUUU-3' (SEQ ID NO: 6128)
3'-CAAAGAAUUCUUUUGUUUGAGAAAAAA-5' (SEQ ID NO: 2533)

KRAS-2059 Target: 5'-GTTTCTTAAGAAAACAAACTCTTTTTT-3' (SEQ ID NO: 3939)

5'-UCUUAAGAAAACAAACUCUUUUUUA-3' (SEQ ID NO: 6129)
3'-AAAGAAUUCUUUUGUUUGAGAAAAAAU-5' (SEQ ID NO: 2534)

KRAS-2060 Target: 5'-TTTCTTAAGAAAACAAACTCTTTTTTA-3' (SEQ ID NO: 3940)

5'-CUUAAGAAAACAAACUCUUUUUUAA-3' (SEQ ID NO: 6130)
3'-AAGAAUUCUUUUGUUUGAGAAAAAAUU-5' (SEQ ID NO: 2535)

KRAS-2061 Target: 5'-TTCTTAAGAAAACAAACTCTTTTTTAA-3' (SEQ ID NO: 3941)

5'-UUAAGAAAACAAACUCUUUUUUAAA-3' (SEQ ID NO: 6131)
3'-AGAAUUCUUUUGUUUGAGAAAAAAUUU-5' (SEQ ID NO: 2536)

KRAS-2062 Target: 5'-TCTTAAGAAAACAAACTCTTTTTTAAA-3' (SEQ ID NO: 3942)

5'-UAAGAAAACAAACUCUUUUUUAAAA-3' (SEQ ID NO: 6132)
3'-GAAUUCUUUUGUUUGAGAAAAAAUUUU-5' (SEQ ID NO: 2537)

KRAS-2063 Target: 5'-CTTAAGAAAACAAACTCTTTTTTAAAA-3' (SEQ ID NO: 3943)

5'-AAGAAAACAAACUCUUUUUUAAAAA-3' (SEQ ID NO: 6133)
3'-AAUUCUUUUGUUUGAGAAAAAAUUUUU-5' (SEQ ID NO: 2538)

KRAS-2064 Target: 5'-TTAAGAAAACAAACTCTTTTTTAAAAA-3' (SEQ ID NO: 3944)

DEMANDES OU BREVETS VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVETS COMPREND PLUS D'UN TOME.

CECI EST LE TOME __1___ DE __2 __

NOTE: Pour les tomes additionels, veillez contacter le Bureau Canadien des Brevets.

JUMBO APPLICATIONS / PATENTS

THIS SECTION OF THE APPLICATION / PATENT CONTAINS MORE THAN ONE VOLUME.

THIS IS VOLUME __1___ OF __2___

NOTE: For additional volumes please contact the Canadian Patent Office.

CLAIMS

We claim:

1. An isolated double stranded nucleic acid (dsNA) comprising first and second nucleic acid strands and a duplex region of at least 25 base pairs, wherein each of said first and second nucleic acid strands comprises RNA and has a length which is at least 25 and at most 35 nucleotides, wherein said second nucleic acid strand is sufficiently complementary to SEQ ID NO: 161 along at least 19 nucleotides of said second nucleic acid strand length to reduce KRAS target gene expression when said double stranded nucleic acid is introduced into a mammalian cell.

2. The isolated dsNA of claim 1, wherein starting from the first nucleotide (position 1) at the 3' terminus of the first nucleic acid strand, position 1, 2 and/or 3 is substituted with a modified nucleotide.

3. The isolated dsNA of claim 2, wherein said modified nucleotide residue of said 3' terminus of said first nucleic acid strand is a deoxyribonucleotide, an acyclonucleotide or a fluorescent molecule.

4. The isolated dsNA of claim 2, wherein position 1 of said 3' terminus of the first nucleic acid strand is a deoxyribonucleotide.

5. The isolated dsNA of any one of claims 1-4, wherein said 3' terminus of said first nucleic acid strand and said 5' terminus of said second nucleic acid strand form a blunt end.

6. The isolated dsNA of any one of claims 1-5, wherein said first nucleic acid strand is 25 nucleotides in length and said second nucleic acid strand is 27 nucleotides in length.

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7. The isolated dsNA of any one of claims 1-6, wherein said second nucleic acid strand comprises SEQ ID NO: 26.

8. The isolated dsNA of any one of claims 1-7, wherein said first nucleic acid strand comprises SEQ ID NO: 105.

9. The isolated dsNA of any one of claims 1-8, wherein the first nucleic acid strand comprises SEQ ID NO: 105 and the second nucleic acid strand comprises SEQ ID NO: 26.

10. The isolated dsNA of any one of claims 1-9, wherein one or both of the first and second nucleic acid strands comprises a 5' phosphate.

11. The isolated dsNA of any one of claims 1-10, wherein said second nucleic acid strand, starting from the nucleotide residue of said second nucleic acid strand that is complementary to the 5' terminal nucleotide residue of said first nucleic acid strand, comprises alternating modified and unmodified nucleotide residues.

12. The isolated dsNA of any one of claims 1-11, wherein said second nucleic acid strand comprises a nucleotide residue that forms a mismatch with SEQ ID NO: 161.

13. The isolated dsNA of any one of claims 1-5, wherein each of said first and said second nucleic acid strands has a length which is at most 30 nucleotides.

14. The isolated dsNA of any one of claims 1-13, wherein said dsNA is cleaved endogenously in said cell by Dicer.

15. The isolated dsNA of any one of claims 1-14, wherein said isolated dsNA possesses greater potency in reducing target KRAS gene expression when assayed *in vitro* in a non-transformed mammalian cell in culture or assayed *in vitro* in a mammalian cell in culture transformed with a

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nucleic acid expressing KRAS as compared to an isolated 21 mer siRNA directed to the identical at least 19 nucleotides of SEQ ID NO: 161 when assayed *in vitro* in said transformed or non-transformed mammalian cell in culture at an effective concentration in the environment of said transformed or non-transformed mammalian cell of less than 1 nanomolar.

16. The isolated dsNA of any one of claims 1-15, wherein the first and second nucleic acid strands are joined by a chemical linker.

17. The isolated dsNA of any one of claims 1-16, wherein said 3' terminus of said first nucleic acid strand and said 5' terminus of said second nucleic acid strand are joined by a chemical linker.

18. The isolated dsNA of any one of claims 1-17, wherein a nucleotide of said second or first nucleic acid strand is substituted with a modified nucleotide that directs the orientation of Dicer cleavage.

19. The isolated dsNA of claim 18, wherein the modified nucleotide that directs the orientation of Dicer cleavage is a deoxyribonucleotide, a dideoxyribonucleotide, an acyclonucleotide, a 3'-deoxyadenosine (cordycepin), a 3'-azido-3'-deoxythymidine (AZT), a 2',3'-dideoxyinosine (ddI), a 2',3'-dideoxy-3'-thiacytidine (3TC), a 2',3'-didehydro-2',3'-dideoxythymidine (d4T), a monophosphate nucleotide of 3'-azido-3'-deoxythymidine (AZT), a 2',3'-dideoxy-3'-thiacytidine (3TC) or a monophosphate nucleotide of 2',3'-didehydro-2',3'-dideoxythymidine (d4T).

20. The isolated dsNA of any one of claims 1-19 comprising a phosphate backbone modification that is a phosphonate, a phosphorothioate or a phosphotriester.

21. The isolated dsNA of any one of claims 1-20, wherein said second nucleic acid strand of said dsNA comprises 1-5 single-stranded nucleotides at its 3' terminus.

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22. The isolated dsNA of claim 21, wherein said nucleotides of said 1-5 single-stranded nucleotides at said 3' terminus of said second nucleic acid strand comprise a modified nucleotide.

23. The isolated dsNA of claim 22, wherein said modified nucleotide of said 1-5 single-stranded nucleotides at said 3' terminus of said second nucleic acid strand is a 2'-O-methyl ribonucleotide.

24. The isolated dsNA of claim 22, wherein said modified nucleotide of said 1-5 single-stranded nucleotides at said 3' terminus of said second nucleic acid strand is one or more of 2'-O-methyl, 2'-methoxyethoxy, 2'-fluoro, 2'-allyl, 2'-O-[2-(methylamino)-2-oxoethyl], 4'-thio, 4'-CH2-O-2'-bridge, 4'-(CH2)2-O-2'-bridge, 2'-LNA, 2'-amino or 2'-O-(N-methlycarbamate).

25. The isolated dsNA of claim 22 comprising two single-stranded nucleotides at said 3' terminus of said second nucleic acid strand, wherein said two single-stranded nucleotides comprise a 2'-O-methyl modified ribonucleotide.

26. The isolated dsNA of claim 21 comprising 1-3 single-stranded nucleotides at said 3' terminus of said second nucleic acid strand.

27. The isolated dsNA of claim 21 comprising 1-2 single-stranded nucleotides at said 3' terminus of said second nucleic acid strand.

28. The isolated dsNA of any one of claims 1-27, wherein said second nucleic acid strand is sufficiently complementary to SEQ ID NO: 6863 along at least 19 nucleotides of said second nucleic acid strand length to reduce KRAS target gene expression when said dsNA is introduced into said mammalian cell.

29. The isolated dsNA of any one of claims 1-28, wherein said second nucleic acid strand comprises a sequence that is completely complementary to SEQ ID NO: 6863.

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30. A mammalian cell containing the isolated dsNA of any one of claims 1-29.

31. A pharmaceutical composition comprising the isolated dsNA of any one of claims 1-29 and a pharmaceutically acceptable carrier.

32. An isolated double stranded nucleic acid (dsNA) comprising first and second nucleic acid strands, wherein each of said first and second nucleic acid strands comprises RNA, wherein said second nucleic acid strand of said dsNA has a length of 19-35 nucleotides and comprises 1-5 single-stranded nucleotides at its 3' terminus, wherein at least 19 consecutive nucleotide residues of the first nucleic acid strand are complementary to residues of the second nucleic acid strand, wherein said second nucleic acid strand comprises a nucleotide sequence that is perfectly complementary to at least 19 contiguous nucleotides of SEQ ID NO: 161, wherein said dsNA reduces KRAS target gene expression when said dsNA is introduced into a mammalian cell.

33. An isolated double stranded nucleic acid (dsNA) comprising first and second nucleic acid strands and a duplex region of at least 25 base pairs, wherein each of said first and second nucleic acid strands comprises RNA, wherein said second nucleic acid strand of said dsNA comprises 1-5 single-stranded nucleotides at its 3' terminus, wherein said second nucleic acid strand is sufficiently complementary to SEQ ID NO: 161 along at least 19 nucleotides of said second nucleic acid strand length to reduce KRAS target gene expression when said double stranded nucleic acid is introduced into a mammalian cell.

34. The isolated dsNA of any one of claims 1, 5-17, 32 and 33, wherein the RNA comprises a modified ribonucleotide having a modification selected from 2'-O-methyl, 2'-methoxyethoxy, 2'-fluoro, 2'-allyl, 2'-O-[2-(methylamino)-2-oxoethyl], 4'-thio, 4'-CH2-O-2'-bridge, 4'-(CH2)2-O-2'-bridge, 2'-LNA, 2'-amino or 2'-O-(N-methlycarbamate).

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35. Use of the isolated dsNA of any one of claims 1-29 and 32-34 to reduce *in vitro* expression of a target KRAS gene in a non-transformed mammalian cell in culture or a mammalian cell in culture transformed with the target KRAS gene, wherein said non-transformed or transformed mammalian cell is contacted with said isolated dsNA of any one of claims 1-29 and 32-34 in an amount sufficient to reduce expression of said target KRAS gene in said non-transformed or transformed mammalian cell.

36. The use of claim 35, wherein KRAS mRNA levels are reduced by an amount of at least 70% at least 10 days after said transformed or non-transformed mammalian cell is contacted with said dsNA.

37. Use of the isolated dsNA of any one of claims 1-29 and 32-34 to reduce expression of said target KRAS gene in a mammal, wherein the isolated dsNA is for administration to said mammal in an amount sufficient to reduce expression of said target KRAS gene in the mammal.

38. The use of claim 37, wherein said isolated dsNA possesses greater potency than an isolated 21 mer siRNA directed to the identical at least 19 nucleotides of SEQ ID NO: 161 in reducing target KRAS gene expression when assayed *in vitro* in a non-transformed mammalian cell in culture or a mammalian cell in culture transformed with a nucleic acid expressing KRAS at an effective concentration in the environment of said non-transformed or transformed mammalian cell of less than 1 nanomolar.

39. The use of claim 37, wherein said isolated dsNA is for administration by a mode that is intravenous injection, intramuscular injection, intraperitoneal injection, infusion, subcutaneous injection, transdermal, aerosol, rectal, vaginal, topical, oral or inhaled delivery.

40. Use of the isolated dsNA of any one of claims 1-29 and 32-34 for selectively inhibiting the growth of a cell expressing KRAS mRNA.

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41. The use of claim 40, wherein said cell is a tumor cell of a mammalian subject.

42. The use of claim 40, wherein said cell is a tumor cell *in vitro*.

43. The use of claim 40, wherein said cell is a human cell.

44. A formulation comprising the isolated dsNA of any one of claims 1-29 and 32-34 and a pharmaceutically acceptable carrier, wherein said dsNA is present in a concentration effective to reduce target KRAS RNA levels when said dsNA is introduced *in vitro* into a non-transformed mammalian cell in culture or a mammalian cell in culture transformed with a nucleic acid expressing KRAS by an amount of at least 80%, and wherein said dsNA possesses greater potency than an isolated 21 mer siRNA directed to the identical at least 19 nucleotides of SEQ ID NO: 161 in reducing target KRAS RNA levels when assayed *in vitro* in said non-transformed or transformed mammalian cell at an effective concentration in the environment of said non-transformed or transformed mammalian cell of less than 1 nanomolar.

45. A formulation comprising the isolated dsNA of any one of claims 1-29 and 32-34 and a pharmaceutically acceptable carrier, wherein said dsNA is present in an amount effective to reduce target KRAS RNA levels when said dsNA is introduced into said mammalian cell by an amount of at least 80%, and wherein said dsNA possesses greater potency than an isolated 21 mer siRNA directed to the identical at least 19 nucleotides of SEQ ID NO: 161 in reducing target KRAS RNA levels when assayed *in vitro* in a non-transformed mammalian cell in culture or a mammalian cell in culture transformed with a nucleic acid expressing KRAS at an effective concentration in the environment of said non-transformed or transformed mammalian cell of less than 1 nanomolar.

46. The use of claim 40, wherein said cell is a pancreatic carcinoma cell.

47. The formulation of claim 44, wherein said formulation comprises a lipid.

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48. The isolated dsNA of any one of claims 1-20 and 32-34, wherein said second nucleic acid strand comprises a 3' overhang that is 1-3 nucleotides in length.

49. The isolated dsNA of claim 48, wherein all the nucleotides of said 3' overhang are modified nucleotides.

Date Reçue/Date Received 2023-08-08

CA 02757613 2011-10-03

Figure 1

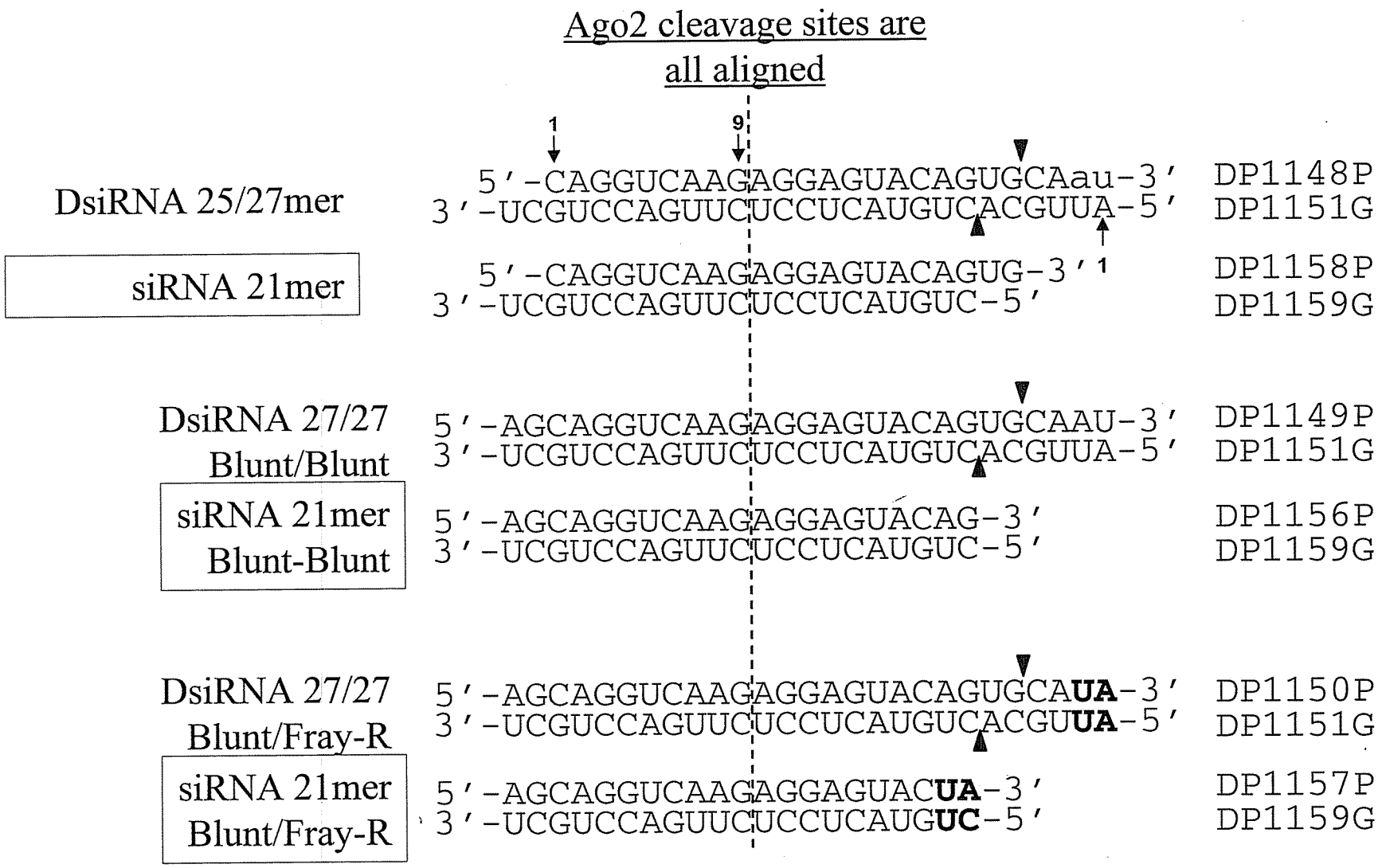


Figure 2

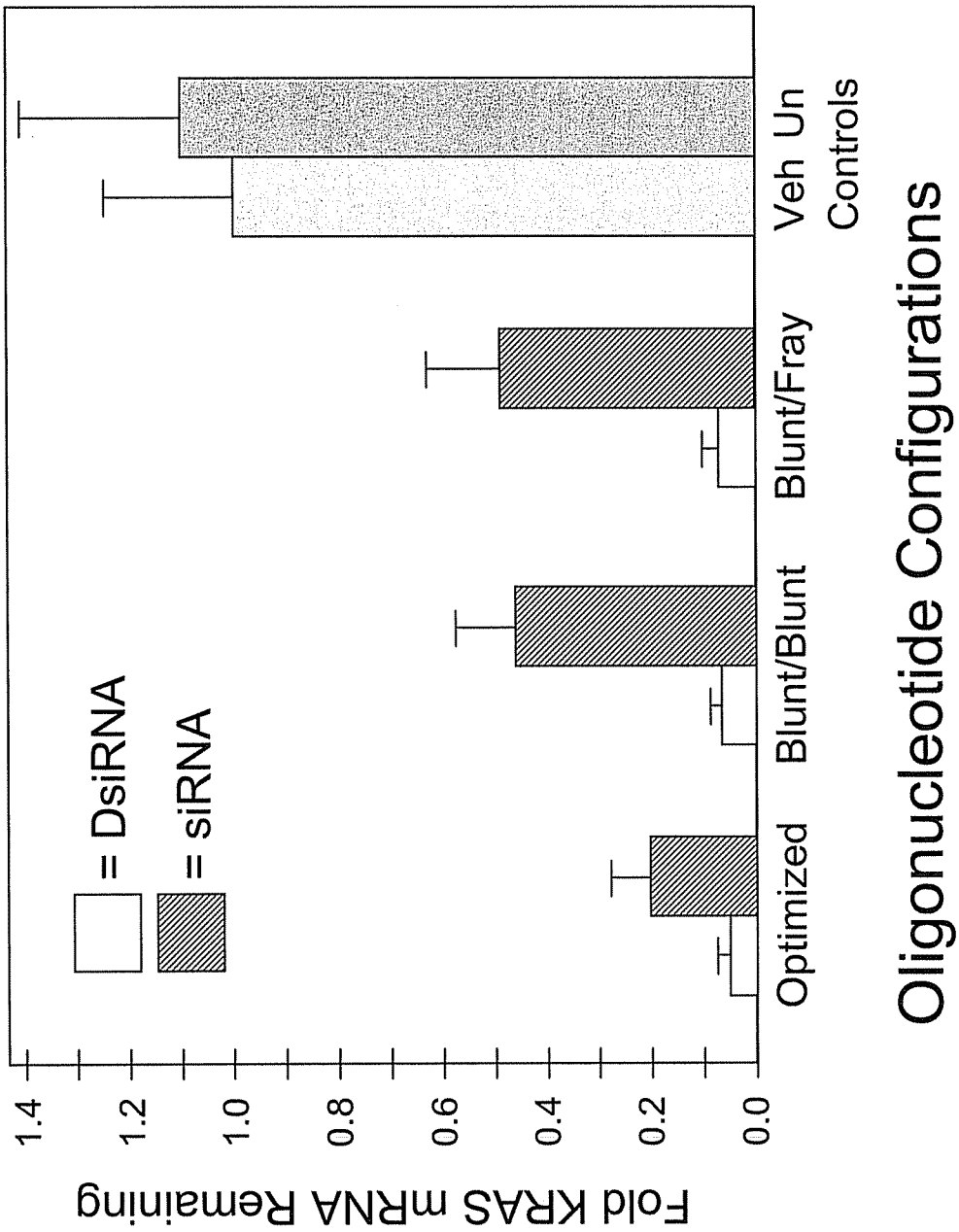
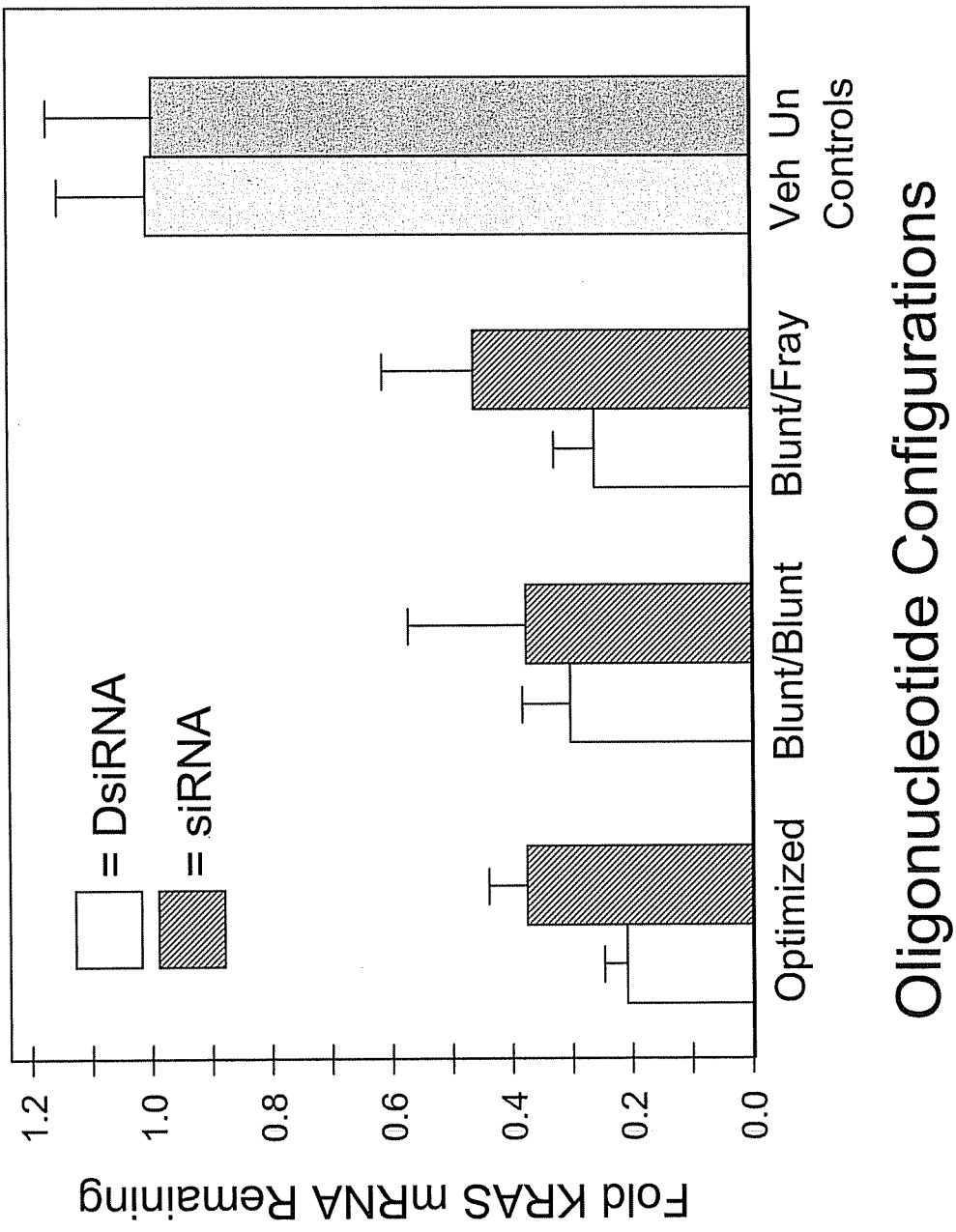

Fold KRAS mRNA Remaining
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
= DsiRNA
= siRNA
Optimized
Blunt/Blunt
Blunt/Fray
Veh Un
Controls
Oligonucleotide Configurations

Figure 3


Fold KRAS mRNA Remaining
1.2
1.0
0.8
0.6
0.4
0.2
0.0
= DsiRNA
= siRNA
Optimized
Blunt/Blunt
Blunt/Fray
Veh Un
Controls
Oligonucleotide Configurations

CA 02757613 2011-10-03

Figure 4



Figure 5

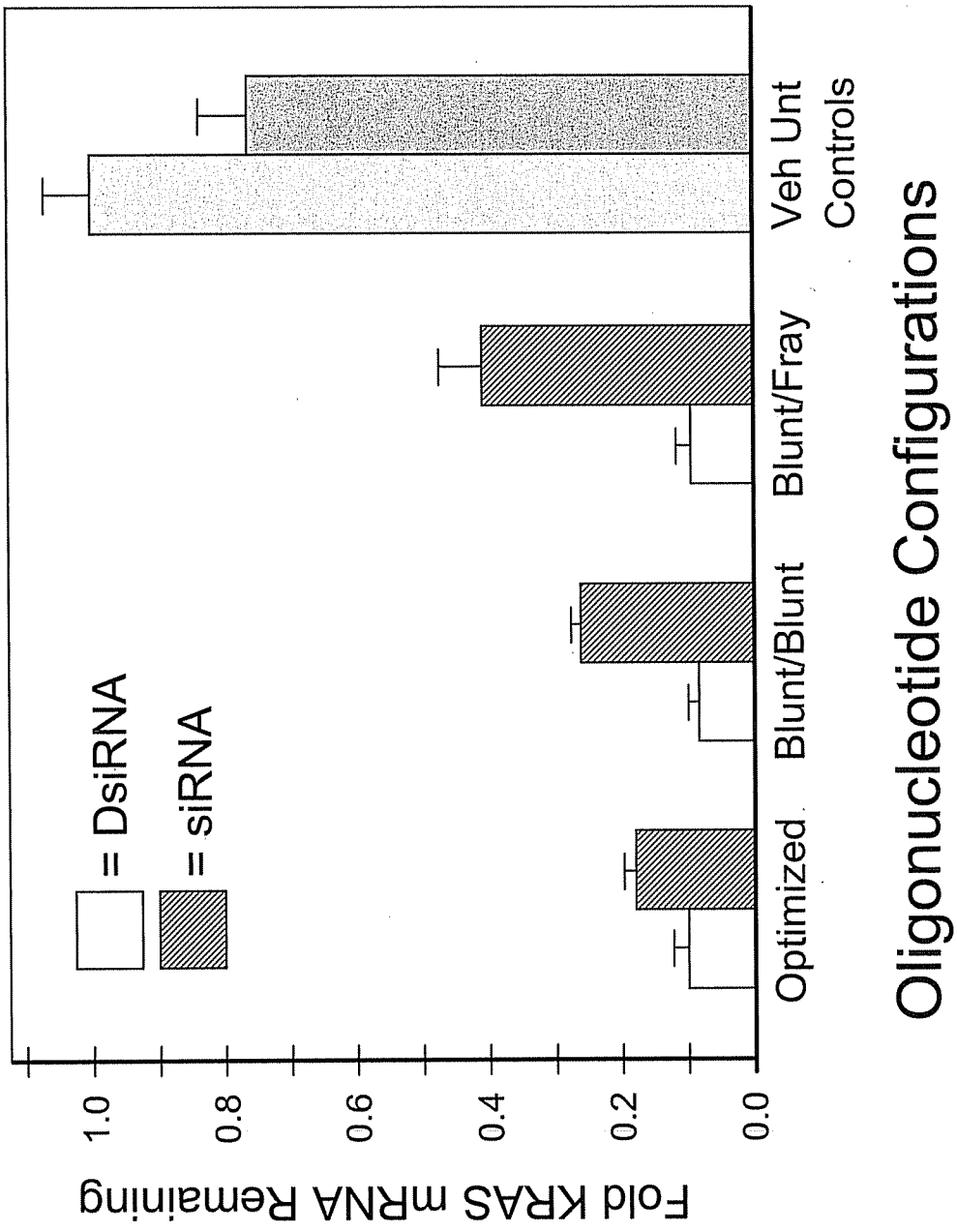

Fold KRAS mRNA Remaining
1.0
0.8
0.6
0.4
0.2
0.0
= DsiRNA
= siRNA
Optimized
Blunt/Blunt
Blunt/Fray
Veh Unt
Controls
Oligonucleotide Configurations

Figure 6

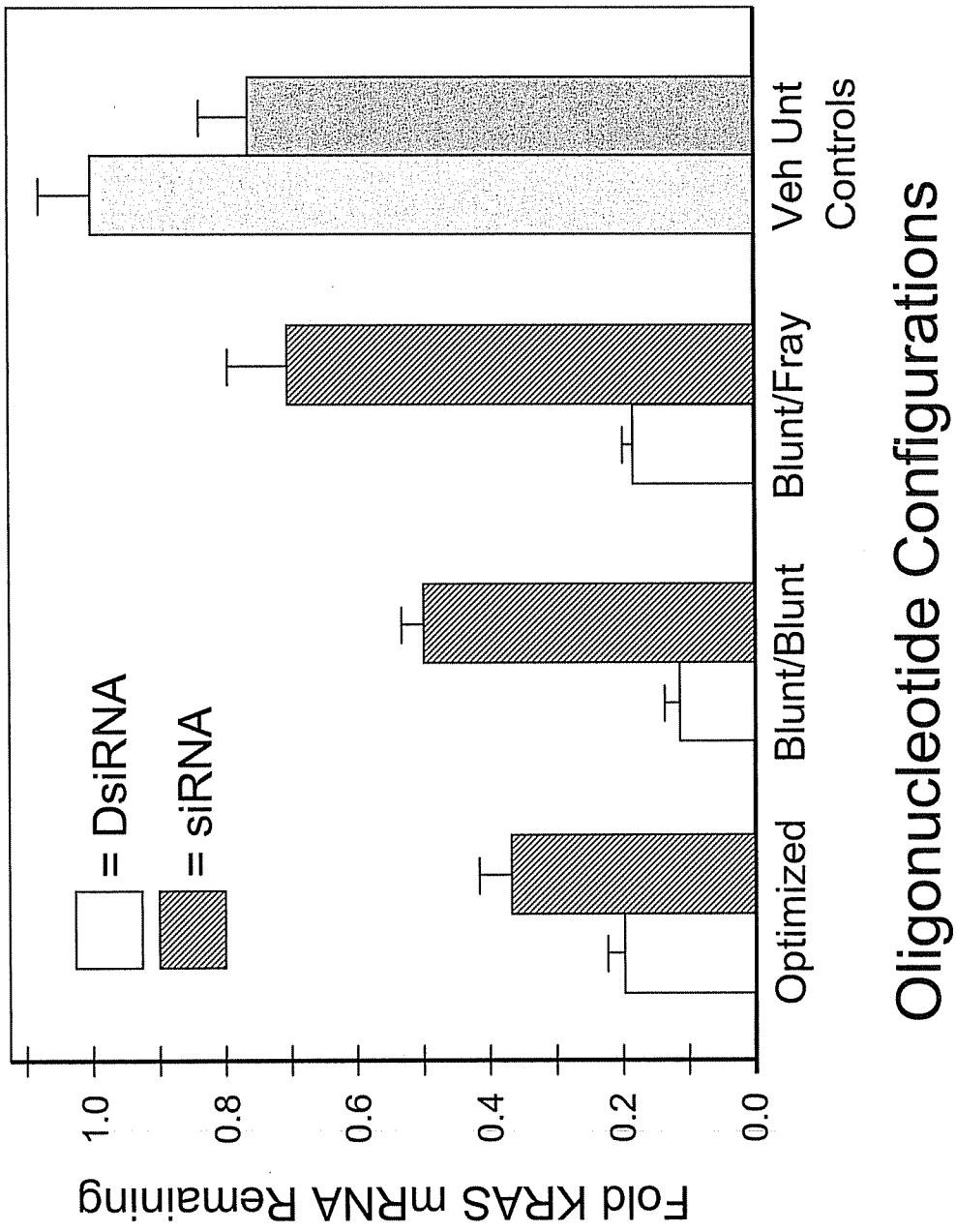

= DsiRNA
= siRNA
Fold KRAS mRNA Remaining
1.0
0.8
0.6
0.4
0.2
0.0
Optimized
Blunt/Blunt
Blunt/Fray
Veh Unt
Controls
Oligonucleotide Configurations

Figure 7

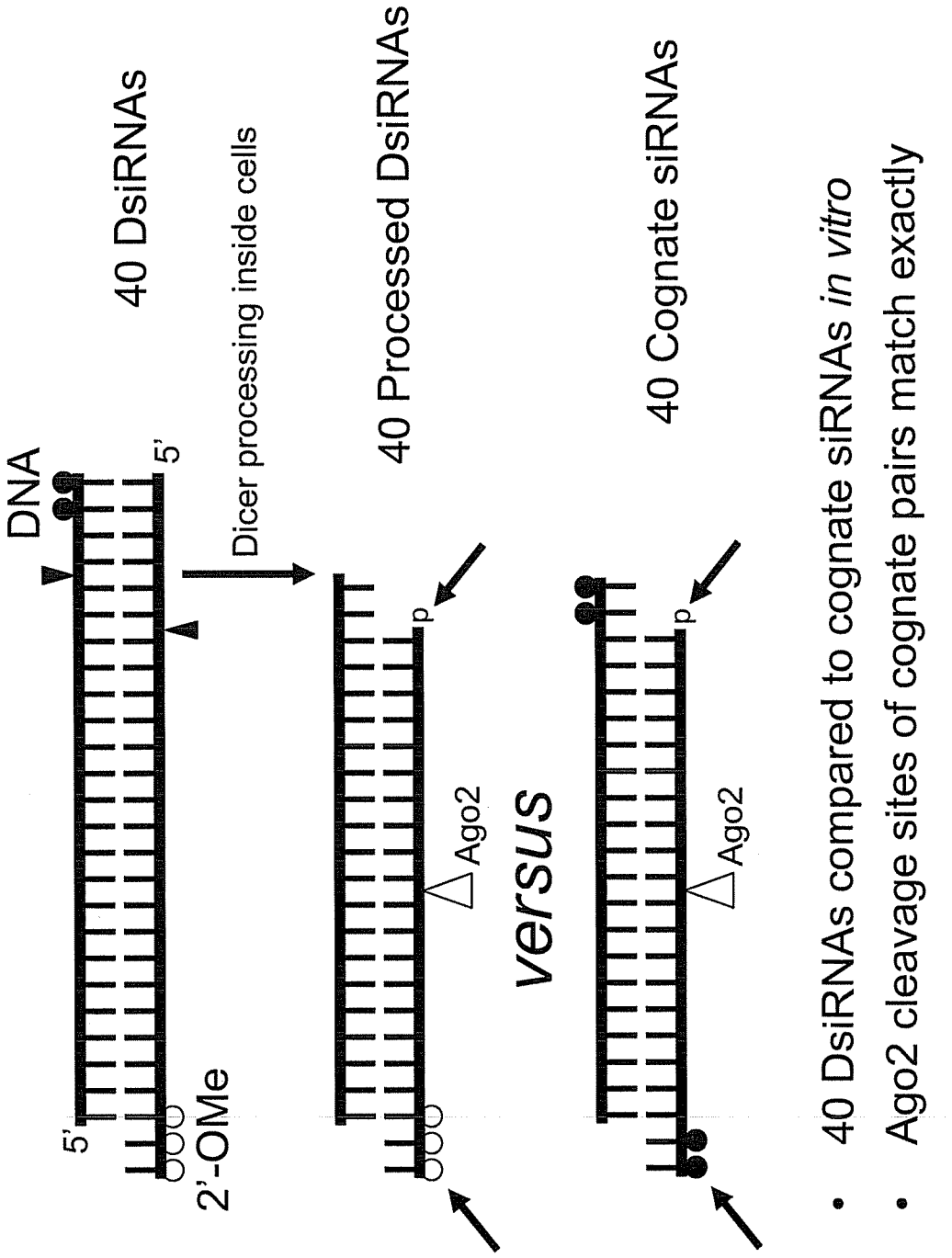

DNA
40 DsiRNAs
5'
5'
2'-OMe
Dicer processing inside cells
40 Processed DsiRNAs
p
Ago2
versus
40 Cognate siRNAs
p
Ago2
• 40 DsiRNAs compared to cognate siRNAs *in vitro*
• Ago2 cleavage sites of cognate pairs match exactly

Figure 8

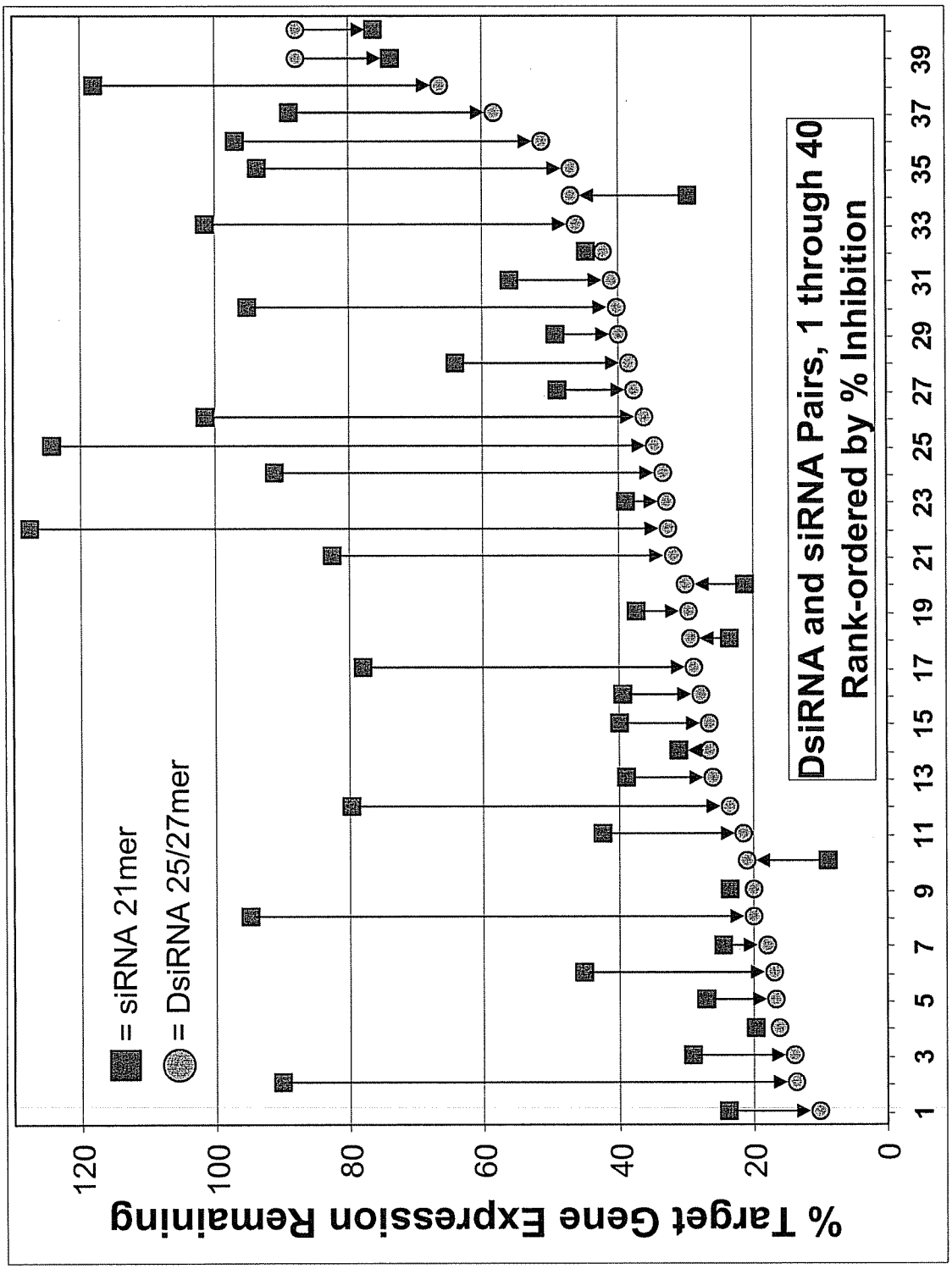

% Target Gene Expression Remaining
120
100
80
60
40
20
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39
DsiRNA and siRNA Pairs, 1 through 40
Rank-ordered by % Inhibition
= siRNA 21mer
= DsiRNA 25/27mer

Figure 9

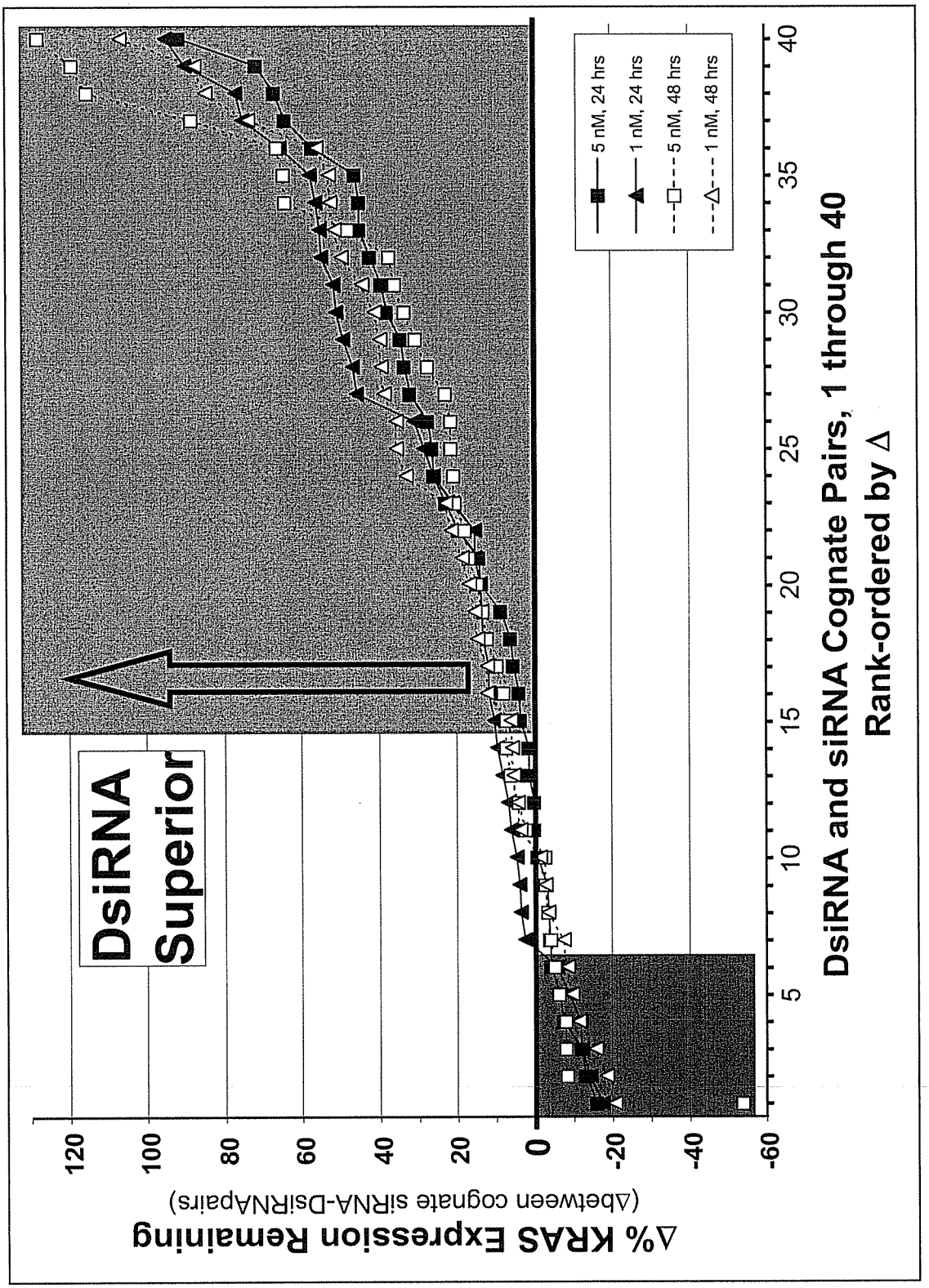

DsiRNA and siRNA Cognate Pairs, 1 through 40
Rank-ordered by Δ
Δ% KRAS Expression Remaining
(Δbetween cognate siRNA-DsiRNApairs)
DsiRNA Superior
5 nM, 24 hrs
1 nM, 24 hrs
5 nM, 48 hrs
1 nM, 48 hrs
120
100
80
60
40
20
0
-20
-40
-60
5
10
15
20
25
30
35
40

Figure 10

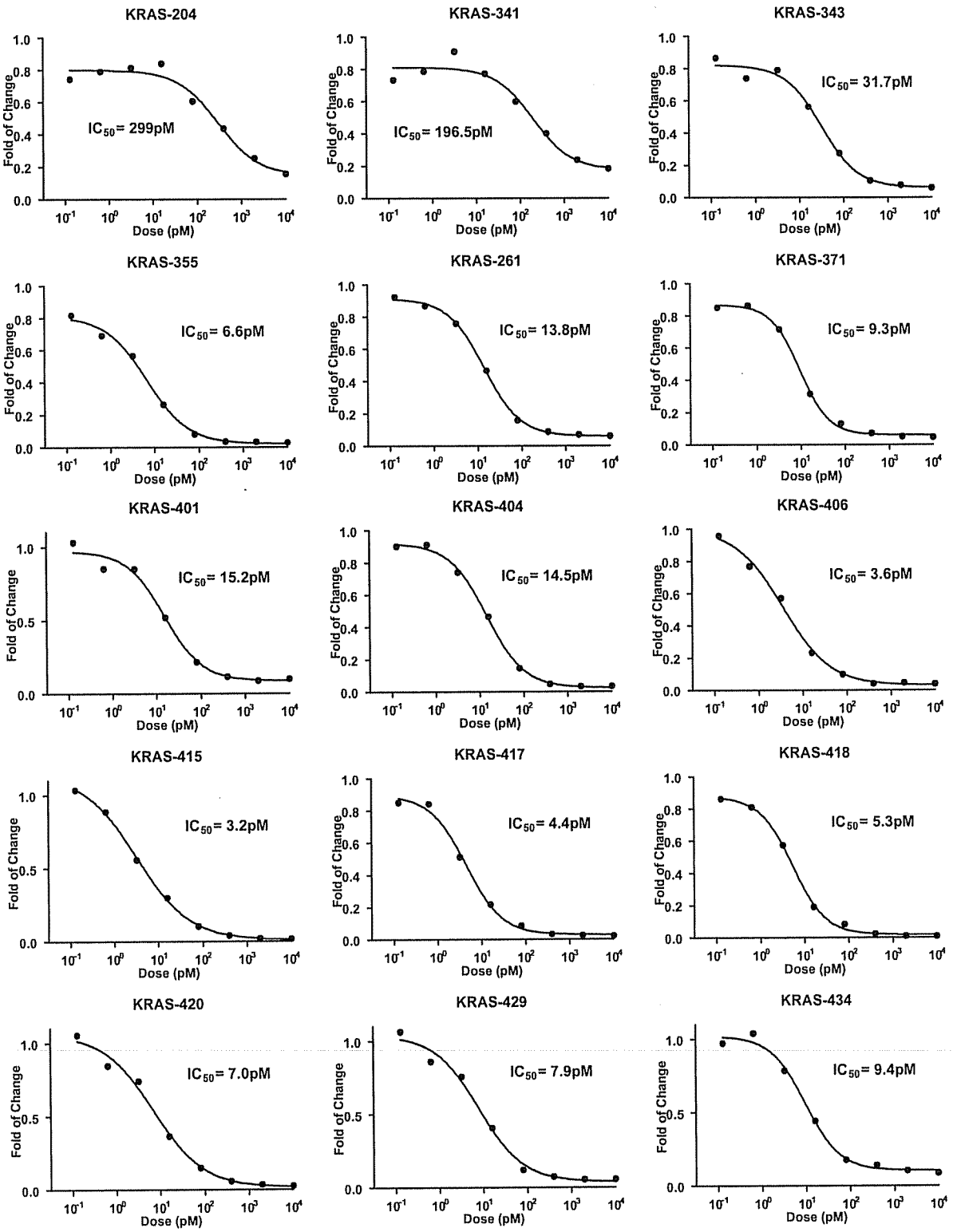

KRAS-204
IC50= 299pM
KRAS-341
IC50= 196.5pM
KRAS-343
IC50= 31.7pM
KRAS-355
IC50= 6.6pM
KRAS-261
IC50= 13.8pM
KRAS-371
IC50= 9.3pM
KRAS-401
IC50= 15.2pM
KRAS-404
IC50= 14.5pM
KRAS-406
IC50= 3.6pM
KRAS-415
IC50= 3.2pM
KRAS-417
IC50= 4.4pM
KRAS-418
IC50= 5.3pM
KRAS-420
IC50= 7.0pM
KRAS-429
IC50= 7.9pM
KRAS-434
IC50= 9.4pM
Fold of Change
Dose (pM)

Figure 11

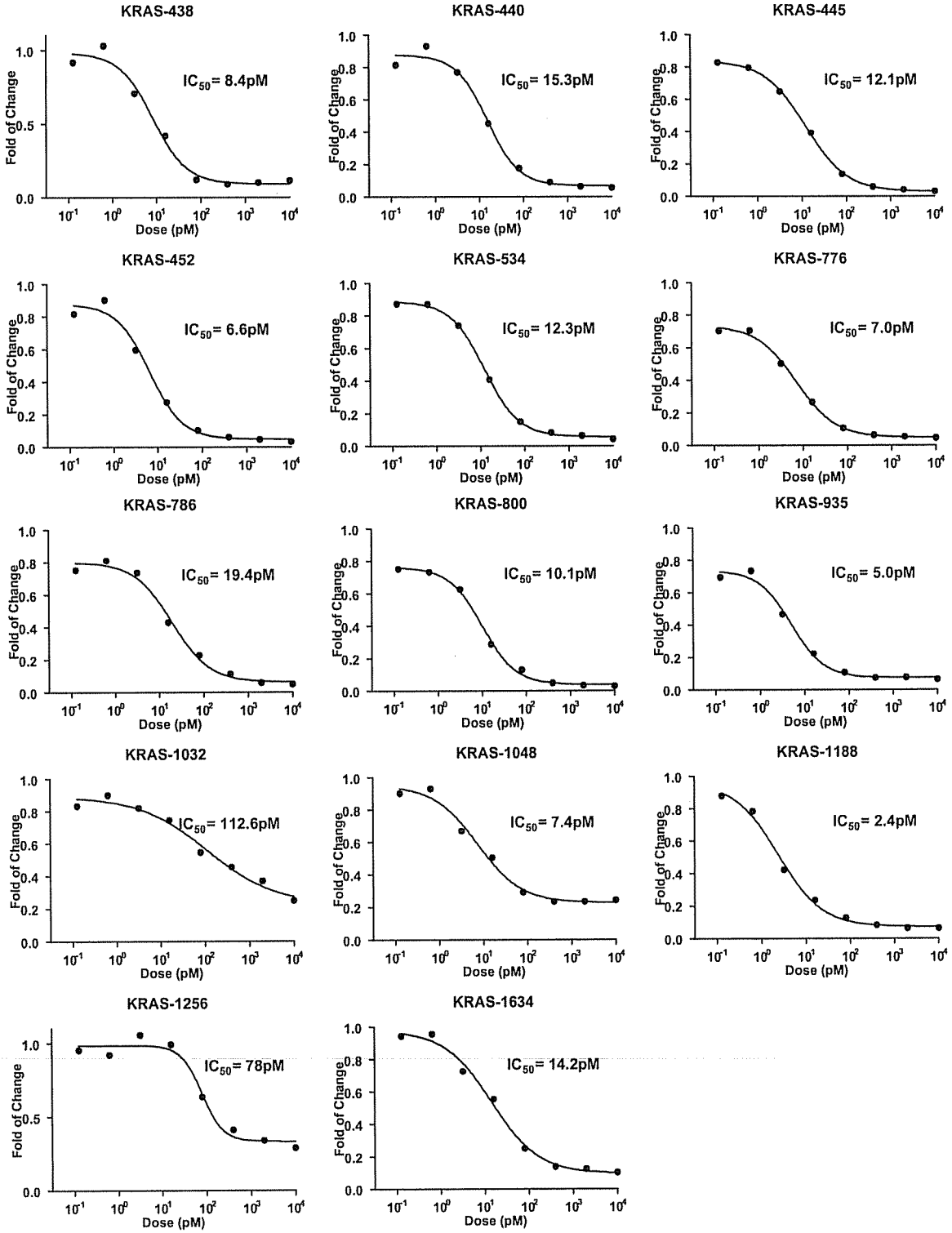

KRAS-438
IC50= 8.4pM
KRAS-440
IC50= 15.3pM
KRAS-445
IC50= 12.1pM
KRAS-452
IC50= 6.6pM
KRAS-534
IC50= 12.3pM
KRAS-776
IC50= 7.0pM
KRAS-786
IC50= 19.4pM
KRAS-800
IC50= 10.1pM
KRAS-935
IC50= 5.0pM
KRAS-1032
IC50= 112.6pM
KRAS-1048
IC50= 7.4pM
KRAS-1188
IC50= 2.4pM
KRAS-1256
IC50= 78pM
KRAS-1634
IC50= 14.2pM
Fold of Change
Dose (pM)

Figure 12

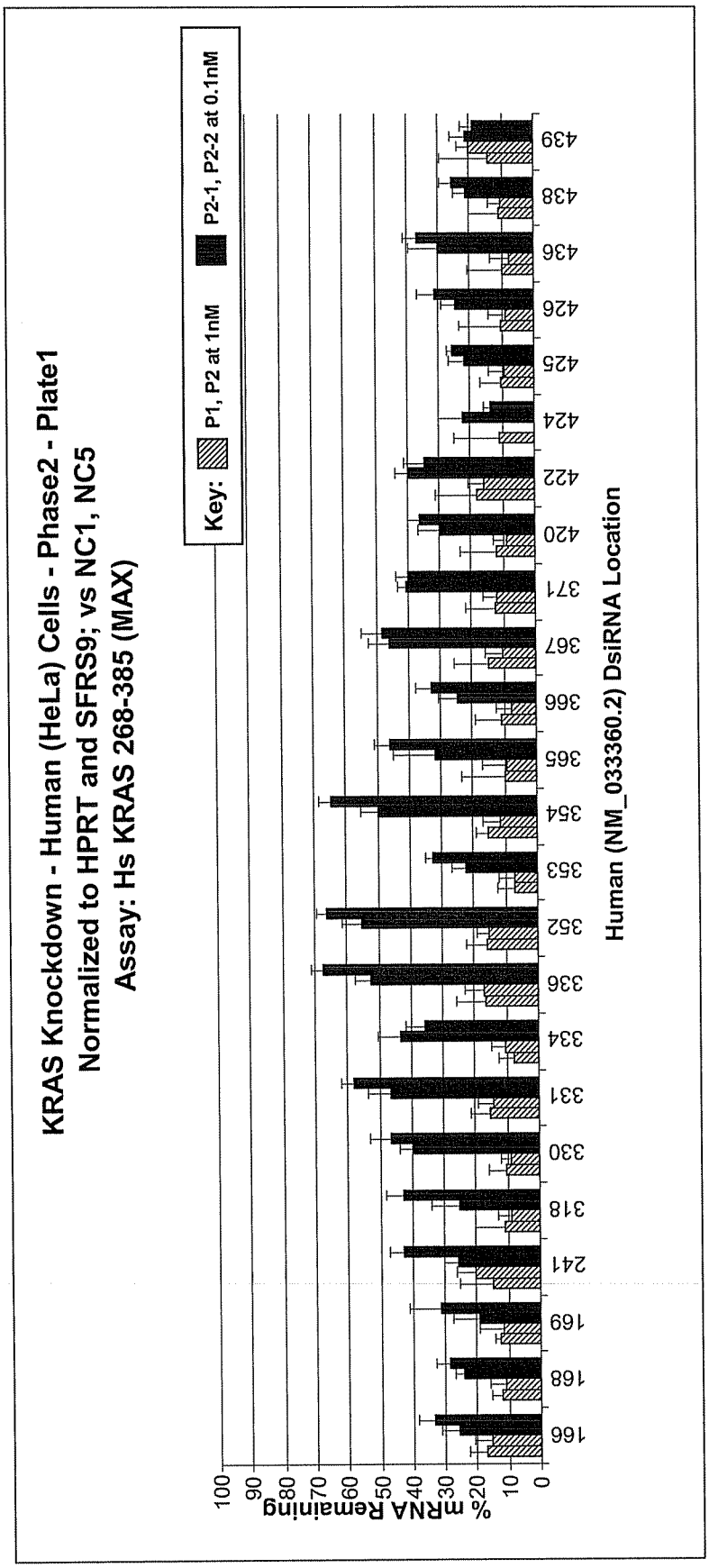

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate1
Normalized to HPRT and SFRS9; vs NC1, NC5
Assay: Hs KRAS 268-385 (MAX)
Key: P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
166
168
169
241
318
330
331
334
336
352
353
354
365
366
367
371
420
422
424
425
426
436
438
439
Human (NM_033360.2) DsiRNA Location

Figure 13

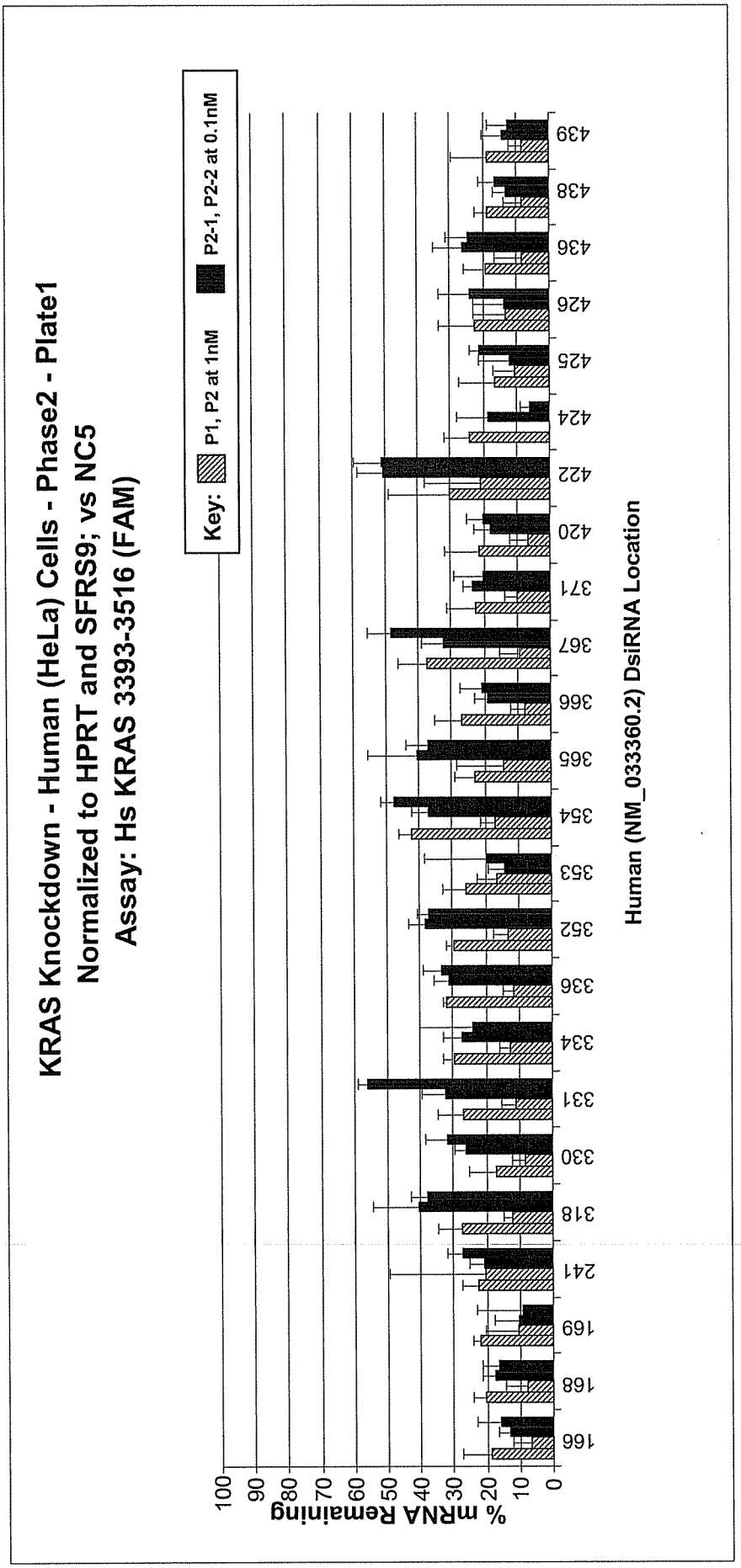

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate1
Normalized to HPRT and SFRS9; vs NC5
Assay: Hs KRAS 3393-3516 (FAM)
Key: P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
166
168
169
241
318
330
331
334
336
352
353
354
365
366
367
371
420
422
424
425
426
436
438
439
Human (NM_033360.2) DsiRNA Location

Figure 14

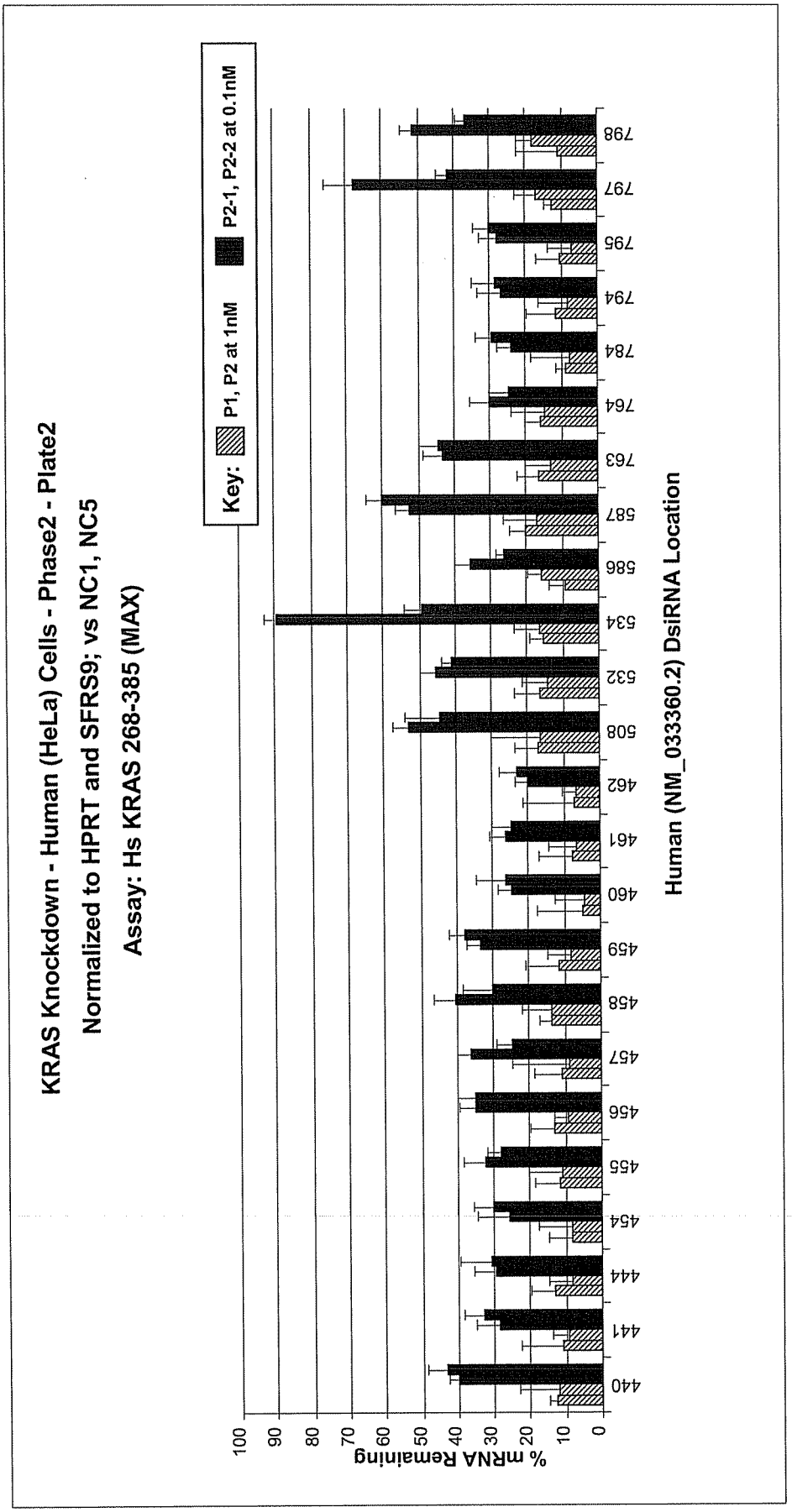

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate2
Normalized to HPRT and SFRS9; vs NC1, NC5
Assay: Hs KRAS 268-385 (MAX)
Key: P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
440
441
444
454
455
456
457
458
459
460
461
462
508
532
534
586
587
763
764
784
794
795
797
798
Human (NM_033360.2) DsiRNA Location

Figure 15

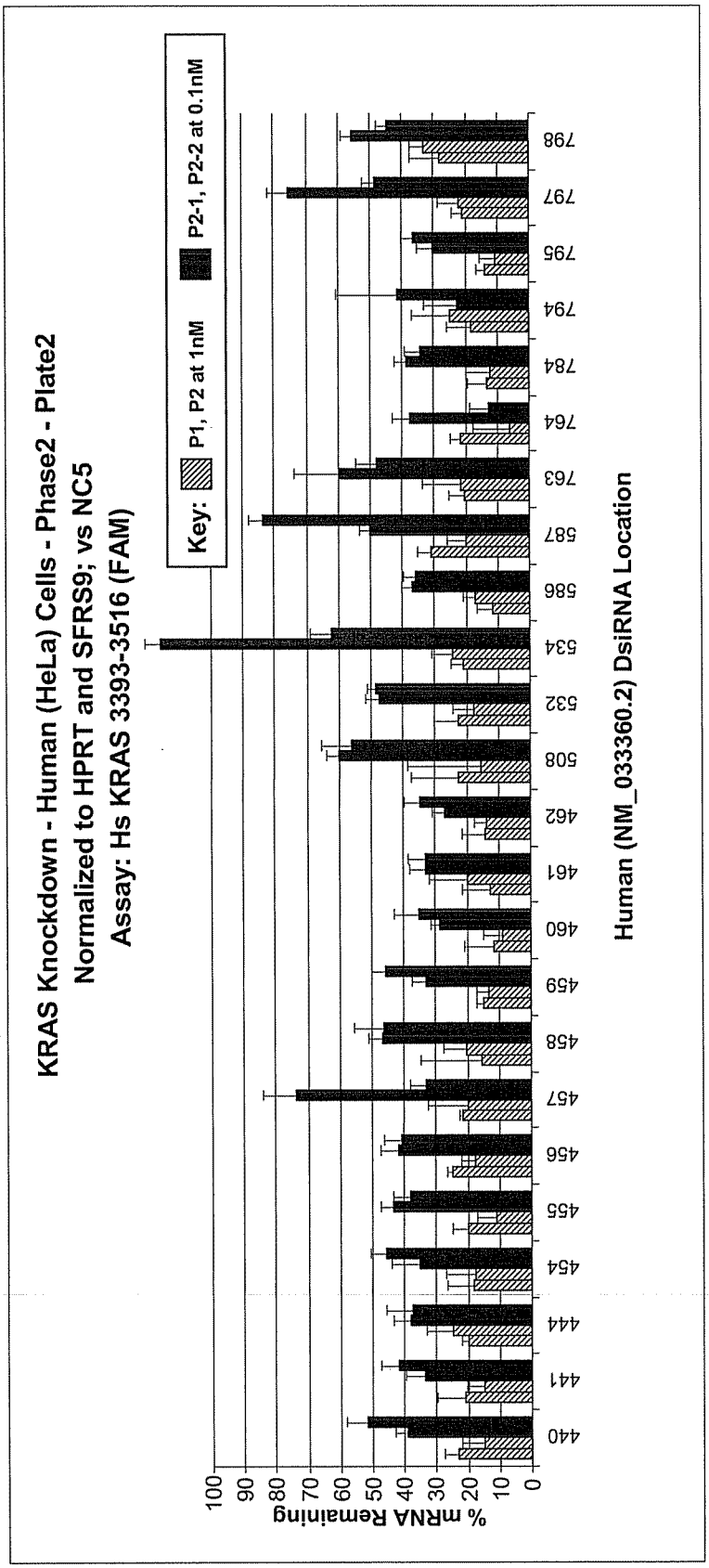

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate2
Normalized to HPRT and SFRS9; vs NC5
Assay: Hs KRAS 3393-3516 (FAM)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
440
441
444
454
455
456
457
458
459
460
461
462
508
532
534
586
587
763
764
784
794
795
797
798
Human (NM_033360.2) DsiRNA Location

Figure 16

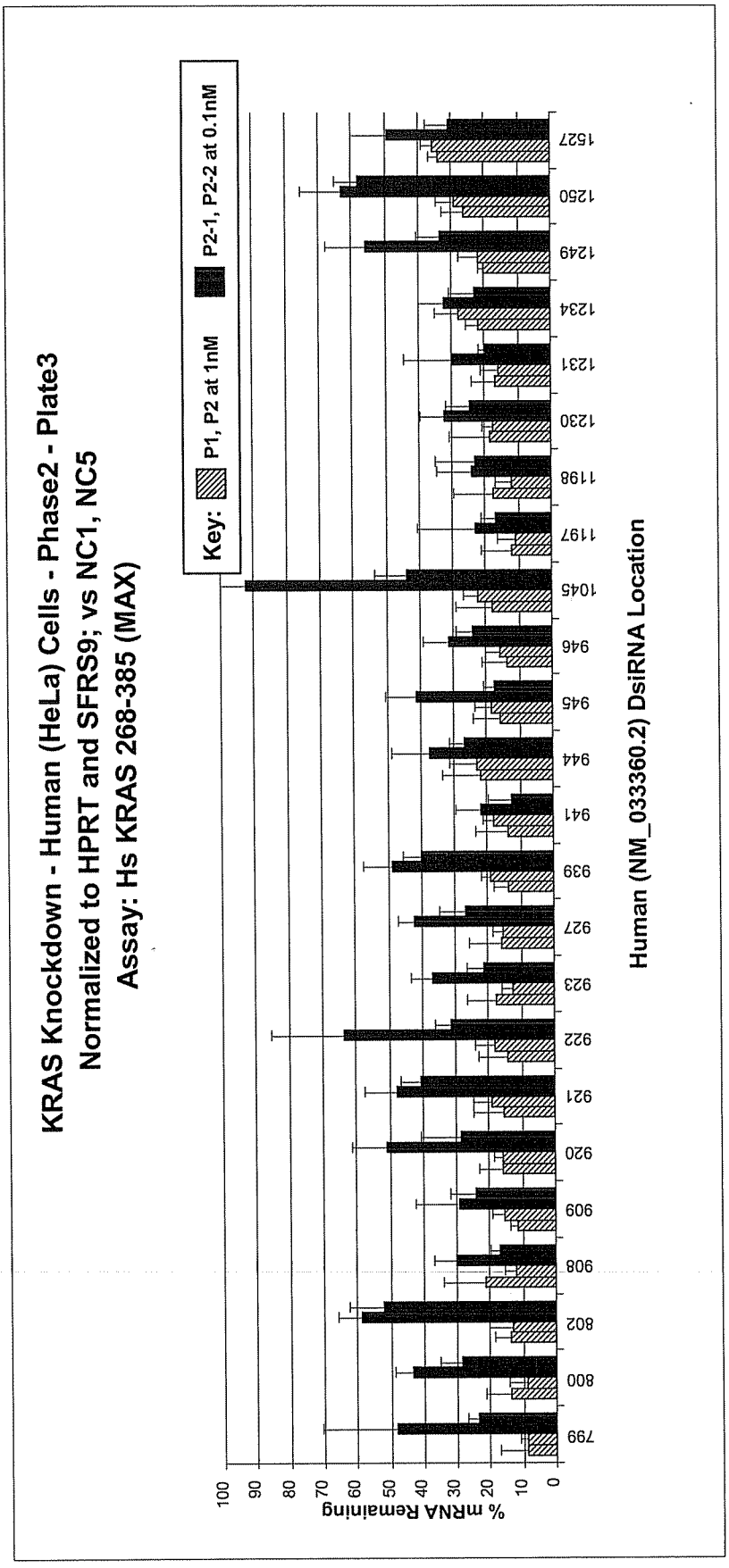

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate3
Normalized to HPRT and SFRS9; vs NC1, NC5
Assay: Hs KRAS 268-385 (MAX)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
799
800
802
908
909
920
921
922
923
927
939
941
944
945
946
1045
1197
1198
1230
1231
1234
1249
1250
1527
Human (NM_033360.2) DsiRNA Location

Figure 17

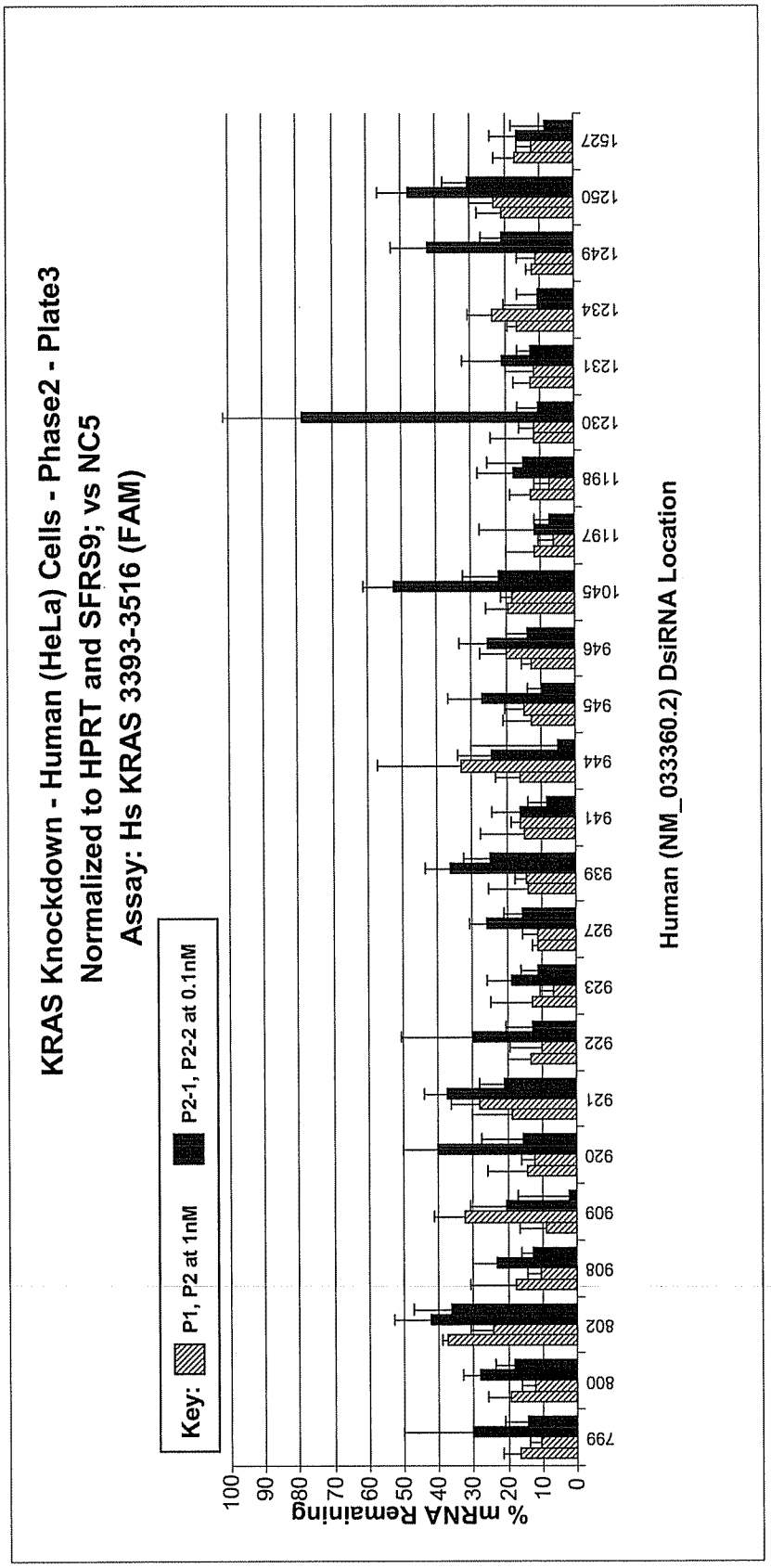

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate3
Normalized to HPRT and SFRS9; vs NC5
Assay: Hs KRAS 3393-3516 (FAM)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
799
800
802
908
909
920
921
922
923
927
939
941
944
945
946
1045
1197
1198
1230
1231
1234
1249
1250
1527
Human (NM_033360.2) DsiRNA Location

Figure 18

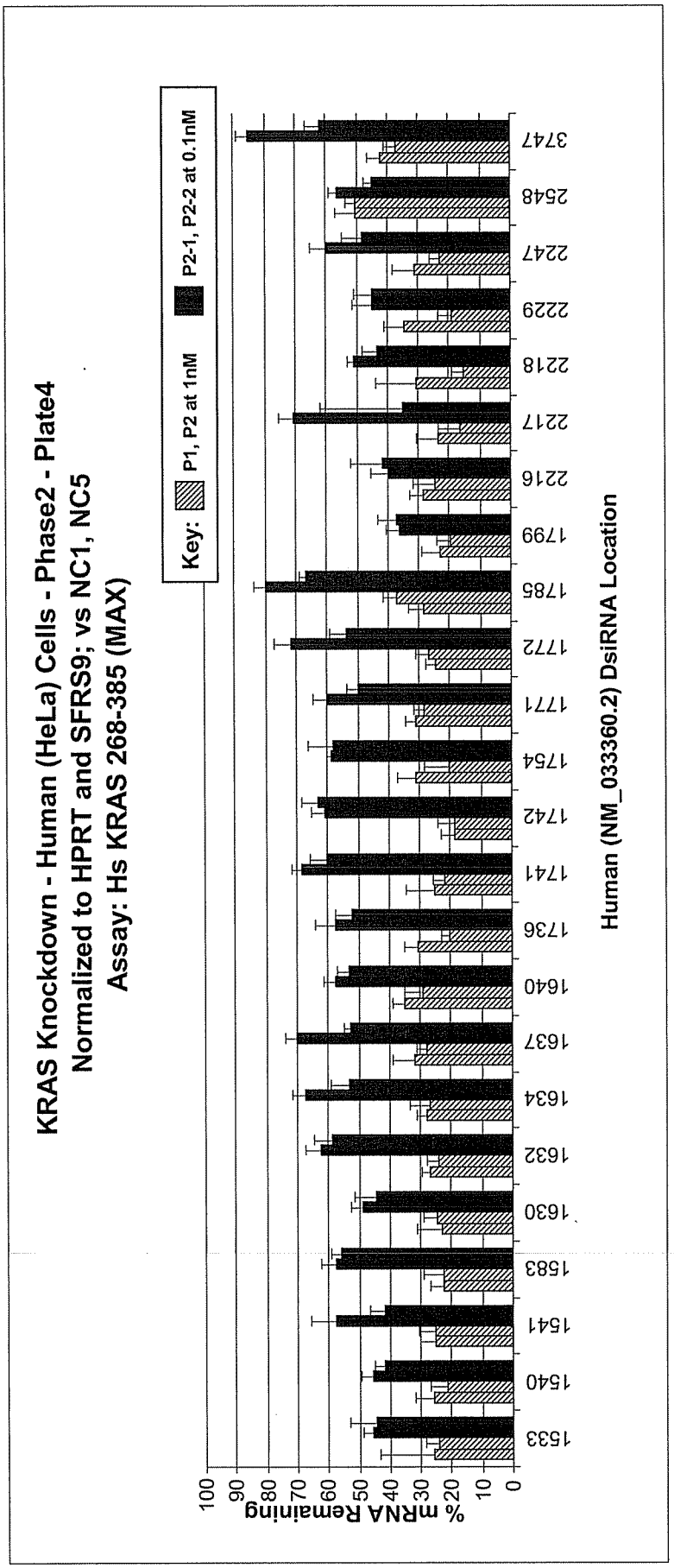

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate4
Normalized to HPRT and SFRS9; vs NC1, NC5
Assay: Hs KRAS 268-385 (MAX)
Key: P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
1533
1540
1541
1583
1630
1632
1634
1637
1640
1736
1741
1742
1754
1771
1772
1785
1799
2216
2217
2218
2229
2247
2548
3747
Human (NM_033360.2) DsiRNA Location

Figure 19

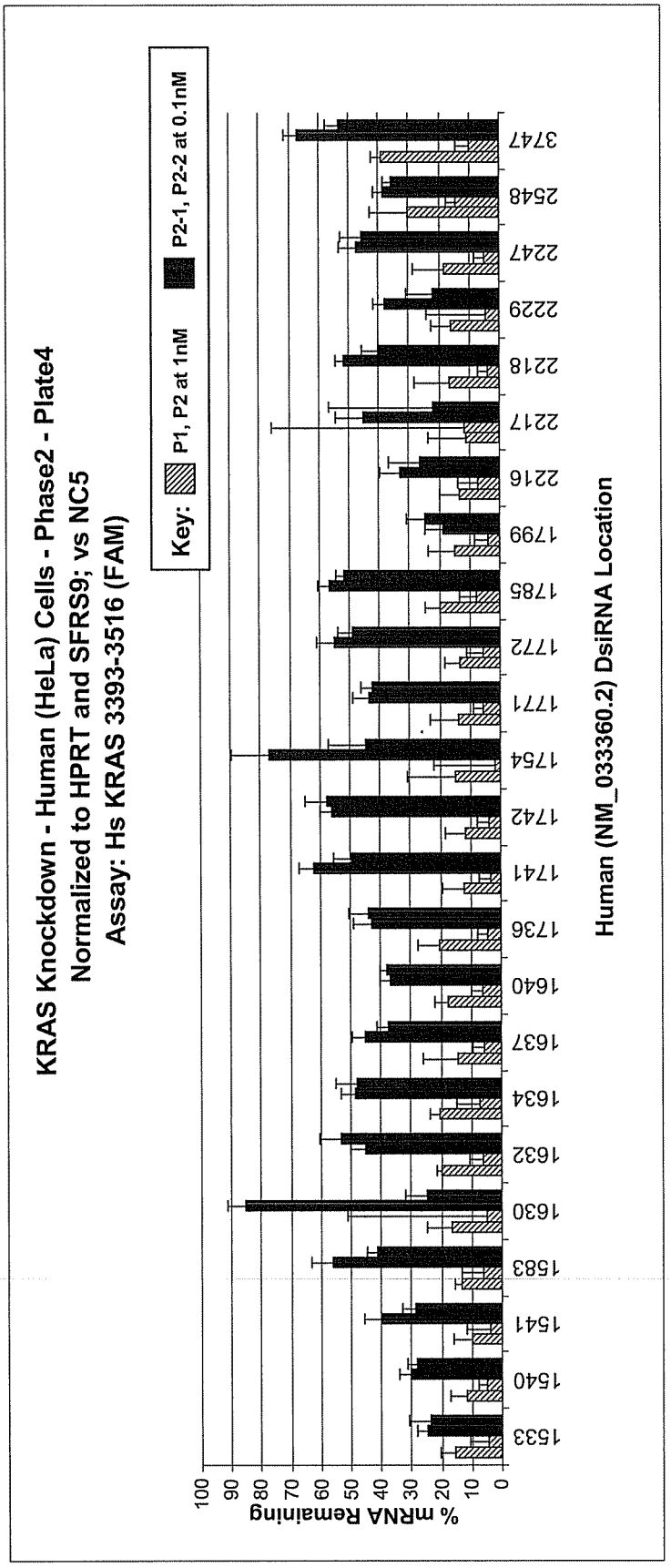

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate4
Normalized to HPRT and SFRS9; vs NC5
Assay: Hs KRAS 3393-3516 (FAM)
Key: P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
1533
1540
1541
1583
1630
1632
1634
1637
1640
1736
1741
1742
1754
1771
1772
1785
1799
2216
2217
2218
2229
2247
2548
3747
Human (NM_033360.2) DsiRNA Location

Figure 20

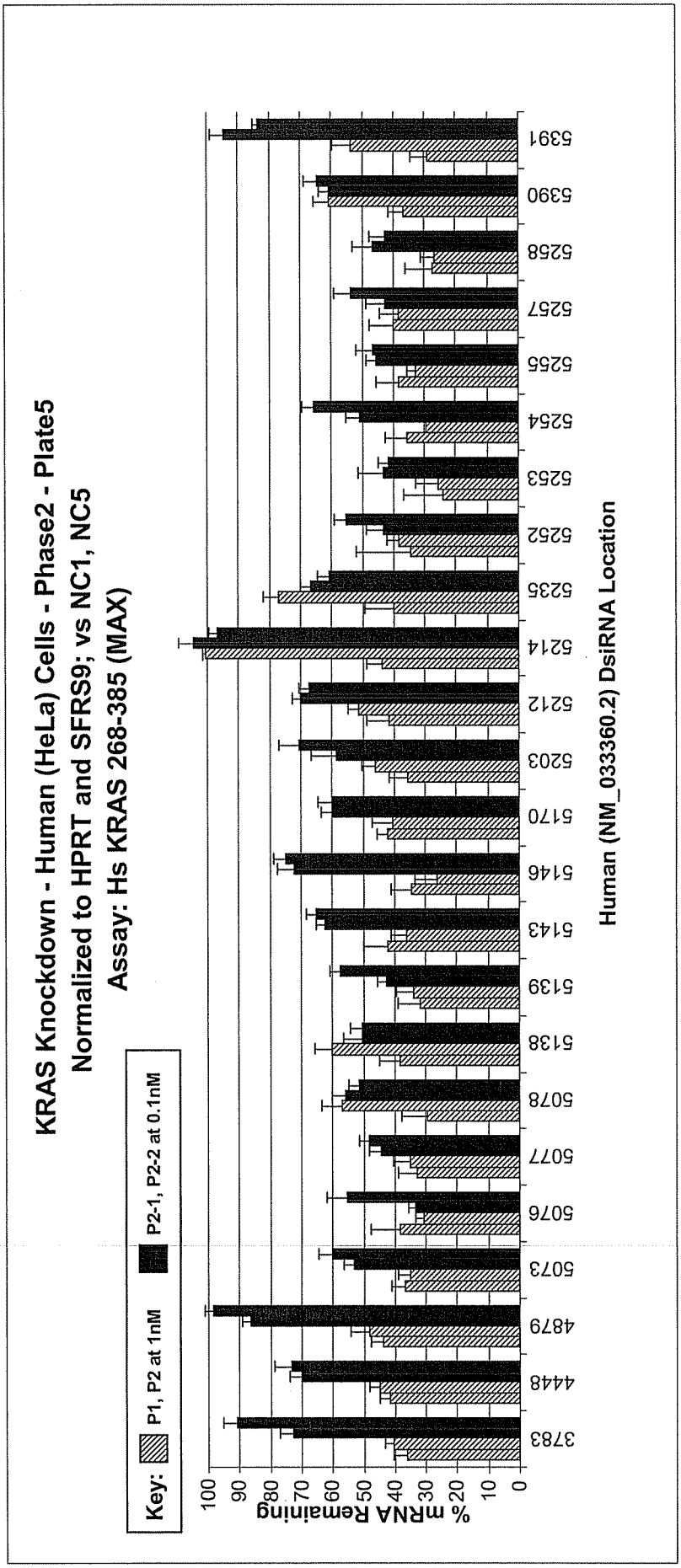

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate5
Normalized to HPRT and SFRS9; vs NC1, NC5
Assay: Hs KRAS 268-385 (MAX)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
3783
4448
4879
5073
5076
5077
5078
5138
5139
5143
5146
5170
5203
5212
5214
5235
5252
5253
5254
5255
5257
5258
5390
5391
Human (NM_033360.2) DsiRNA Location

Figure 21

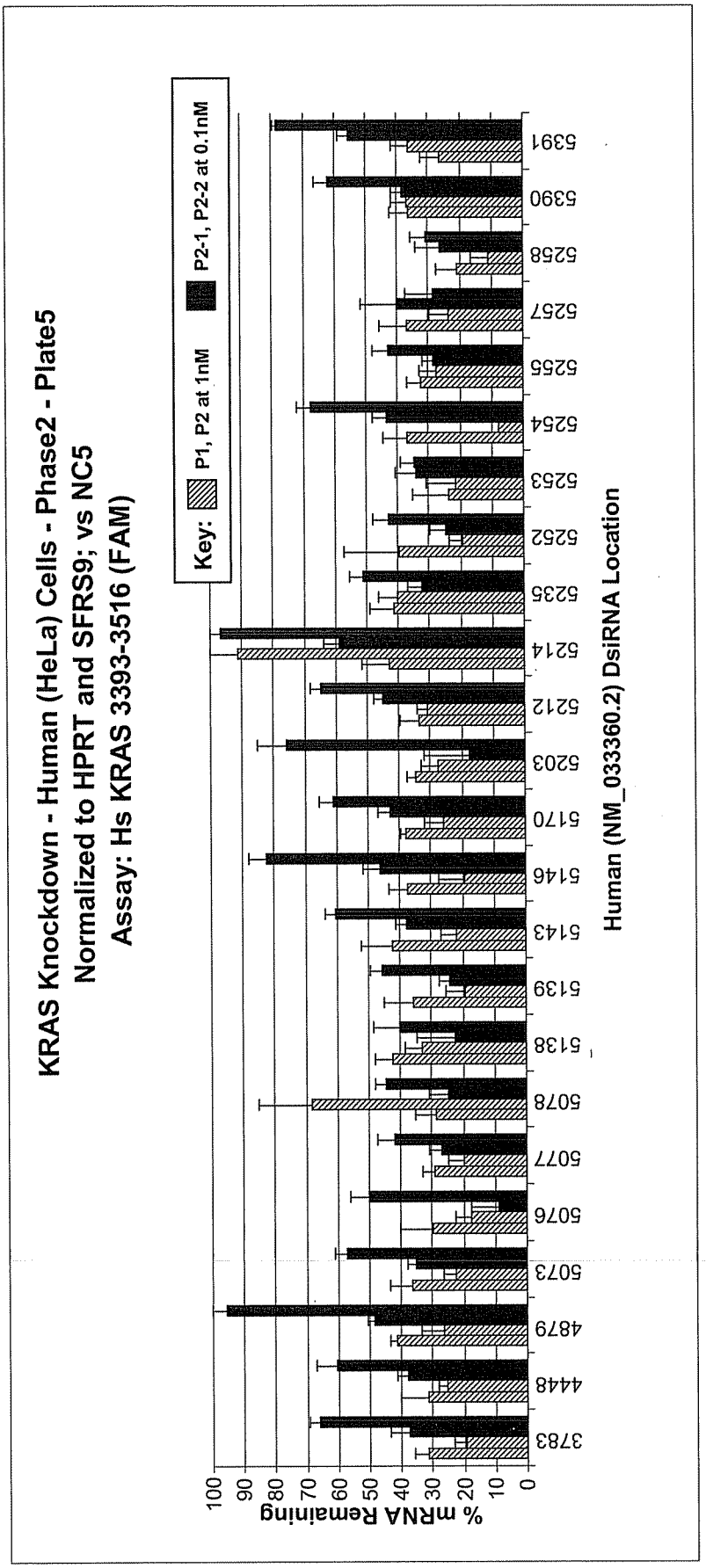

KRAS Knockdown - Human (HeLa) Cells - Phase2 - Plate5
Normalized to HPRT and SFRS9; vs NC5
Assay: Hs KRAS 3393-3516 (FAM)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
3783
4448
4879
5073
5076
5077
5078
5138
5139
5143
5146
5170
5203
5212
5214
5235
5252
5253
5254
5255
5257
5258
5390
5391
Human (NM_033360.2) DsiRNA Location

Figure 22

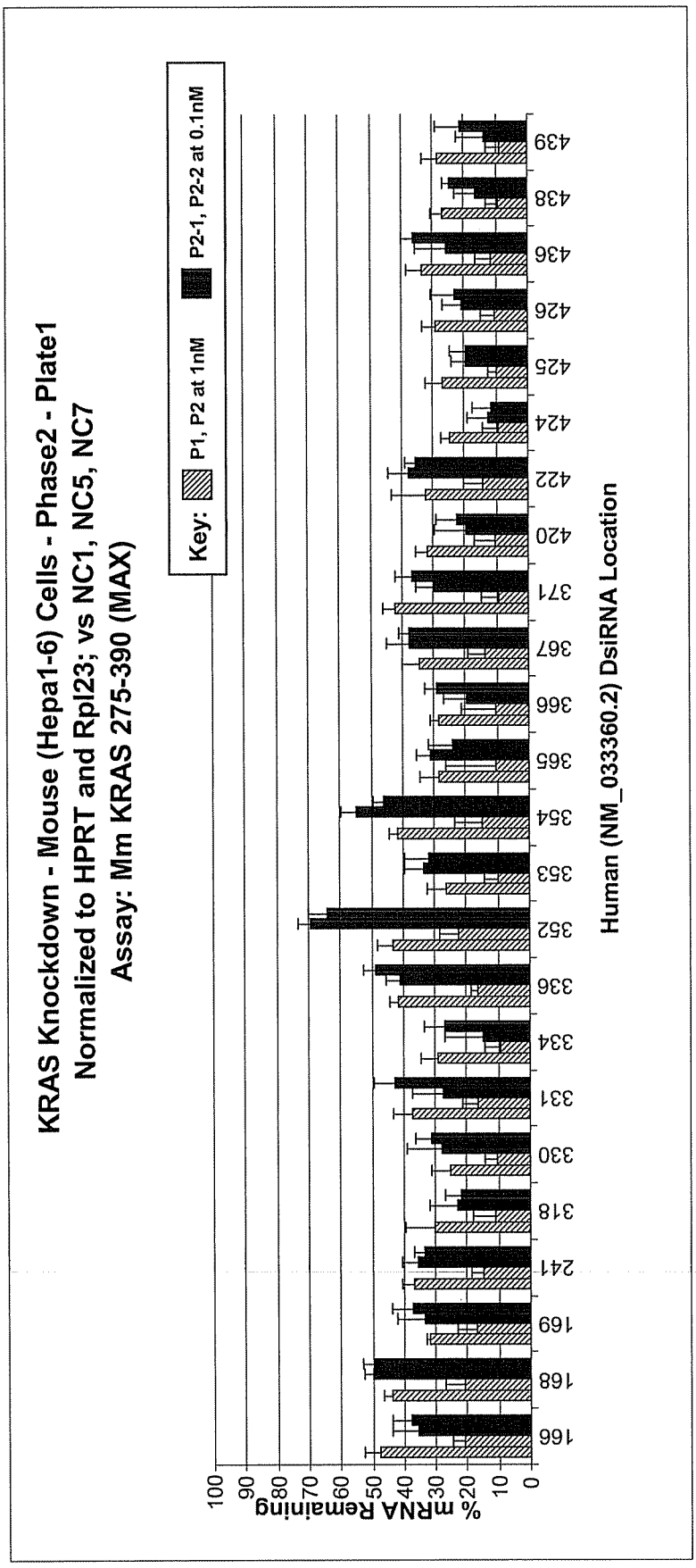

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate1
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm KRAS 275-390 (MAX)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
166
168
169
241
318
330
331
334
336
352
353
354
365
366
367
371
420
422
424
425
426
436
438
439
Human (NM_033360.2) DsiRNA Location

Figure 23

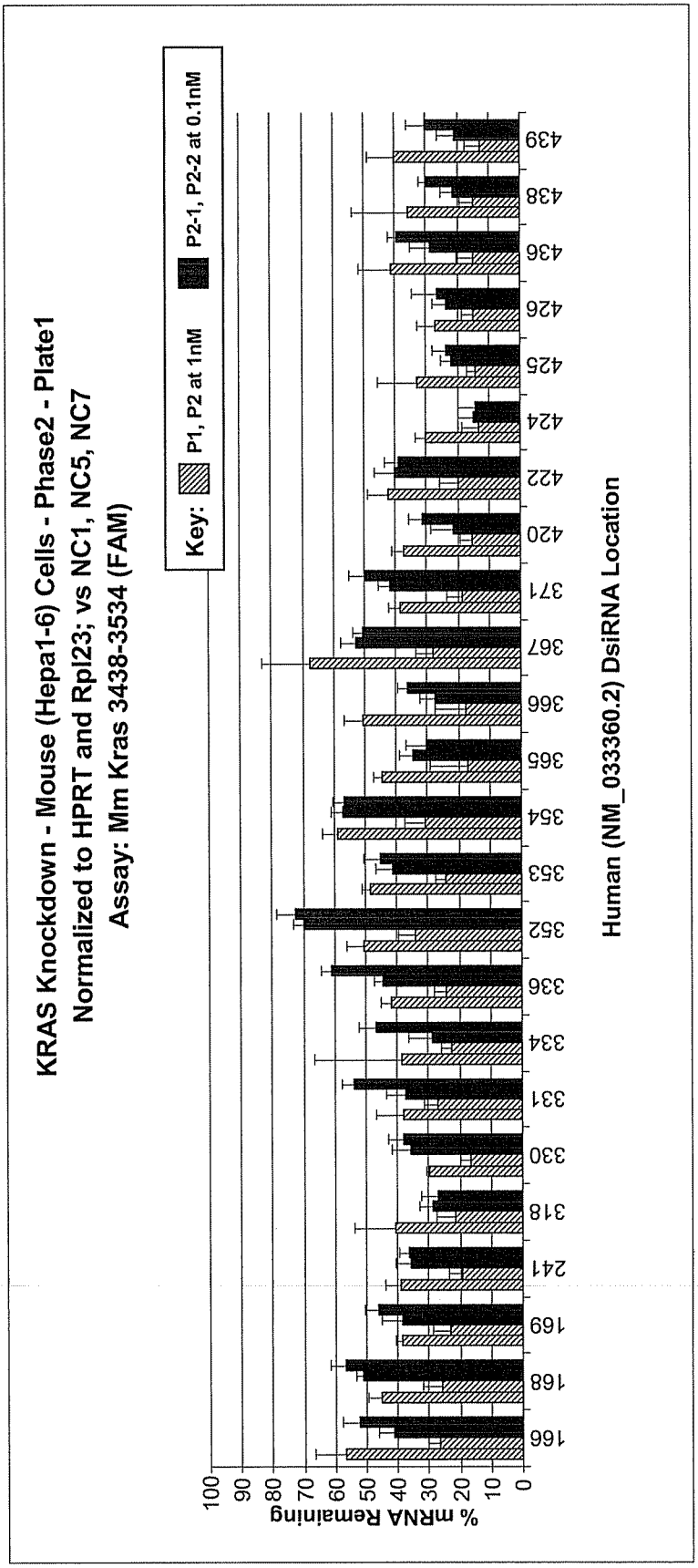

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate1
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm Kras 3438-3534 (FAM)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
166
168
169
241
318
330
331
334
336
352
353
354
365
366
367
371
420
422
424
425
426
436
438
439
Human (NM_033360.2) DsiRNA Location

Figure 24

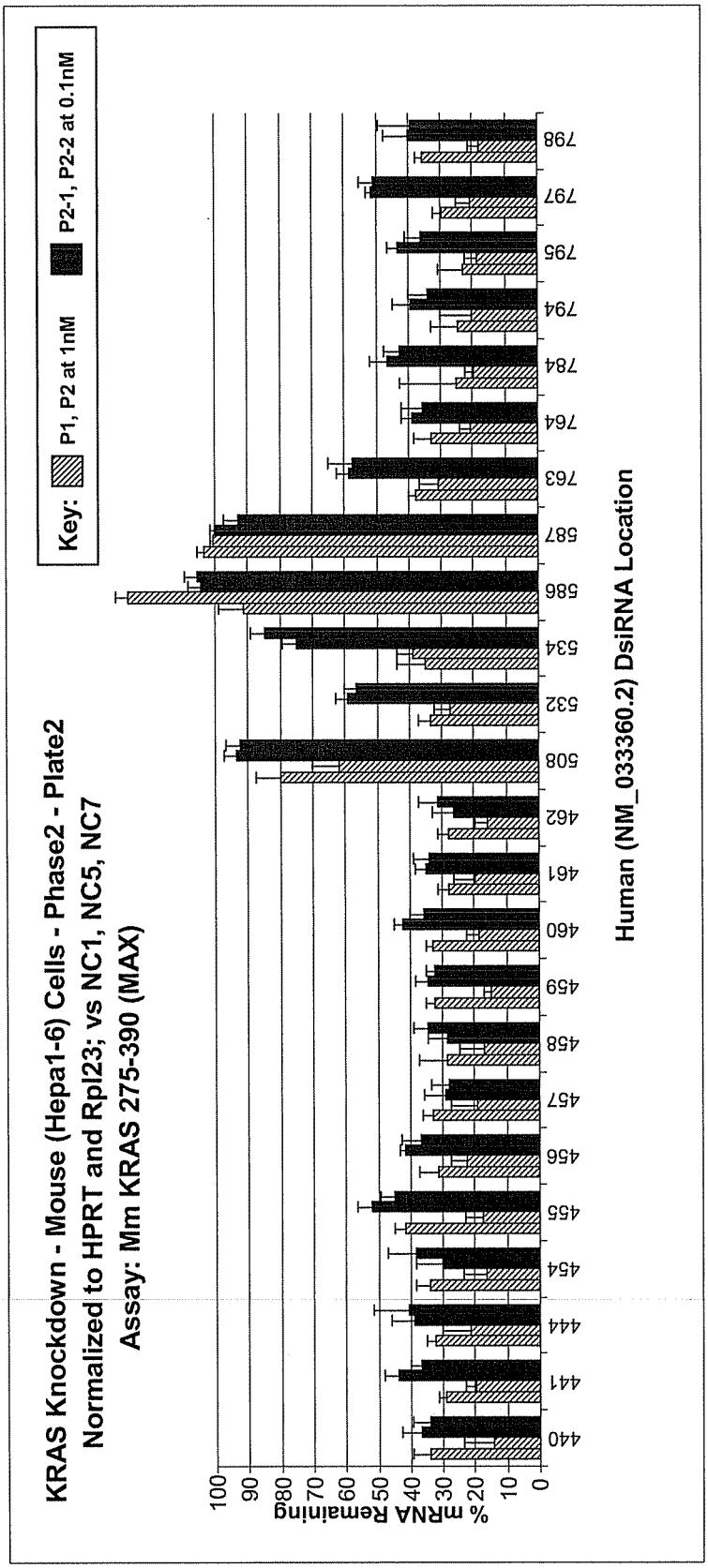

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate2
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm KRAS 275-390 (MAX)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
440
441
444
454
455
456
457
458
459
460
461
462
508
532
534
586
587
763
764
784
794
795
797
798
Human (NM_033360.2) DsiRNA Location

Figure 25

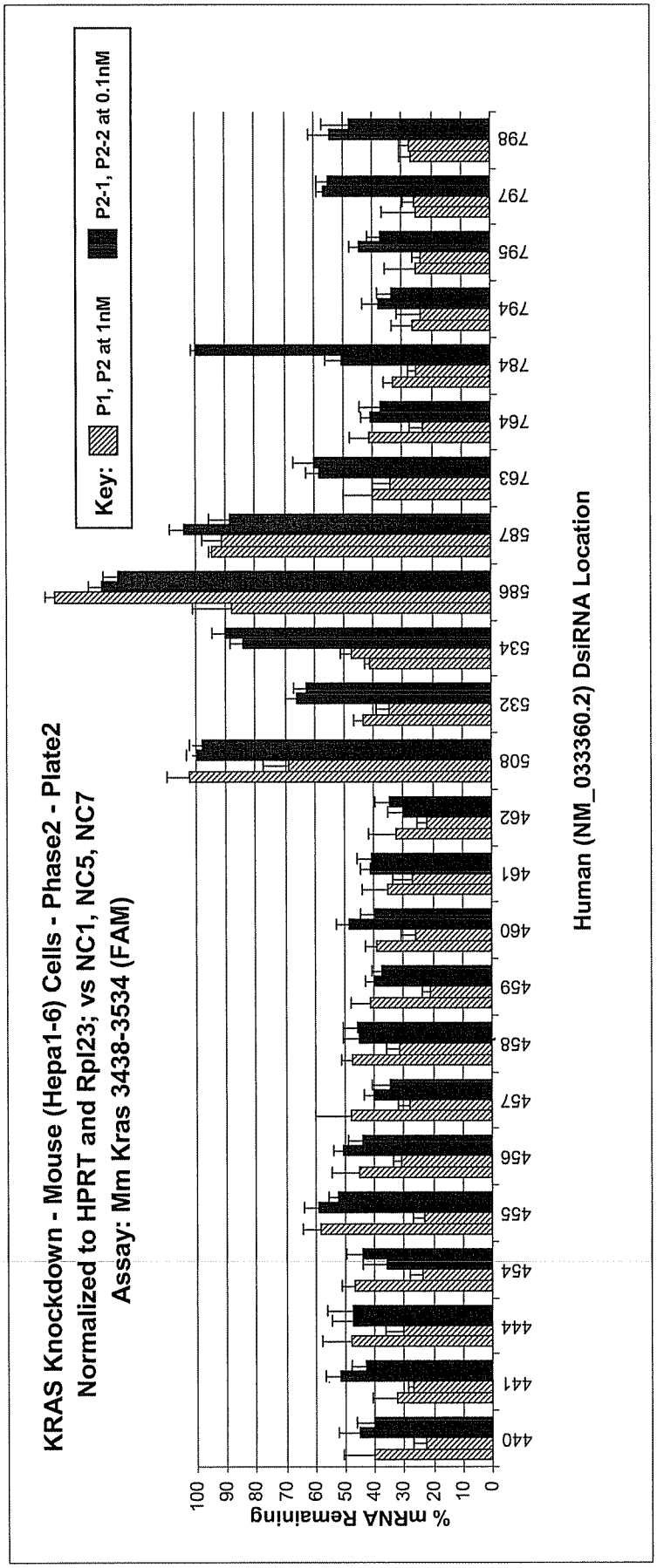

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate2
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm Kras 3438-3534 (FAM)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
440
441
444
454
455
456
457
458
459
460
461
462
508
532
534
586
587
763
764
784
794
795
797
798
Human (NM_033360.2) DsiRNA Location

Figure 26

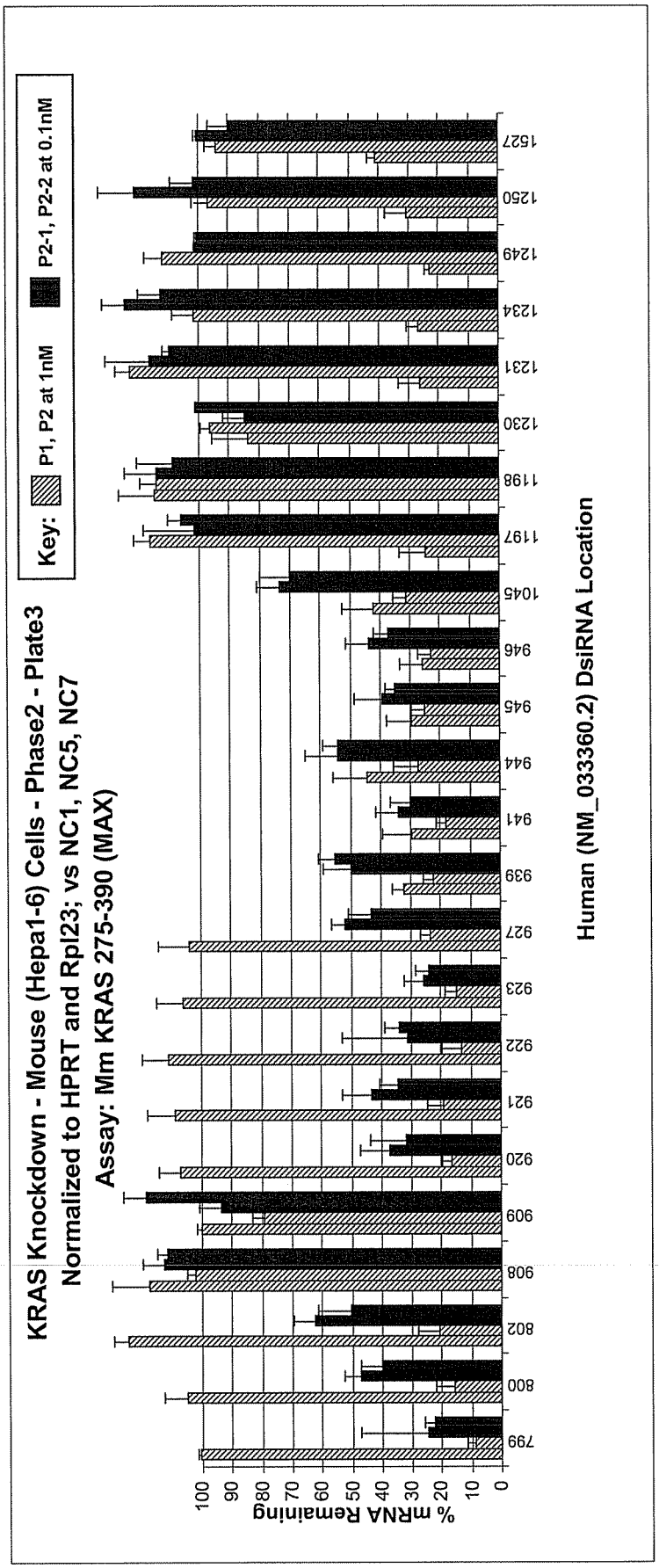

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate3
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm KRAS 275-390 (MAX)
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
799
800
802
908
909
920
921
922
923
927
939
941
944
945
946
1045
1197
1198
1230
1231
1234
1249
1250
1527
Human (NM_033360.2) DsiRNA Location

Figure 27

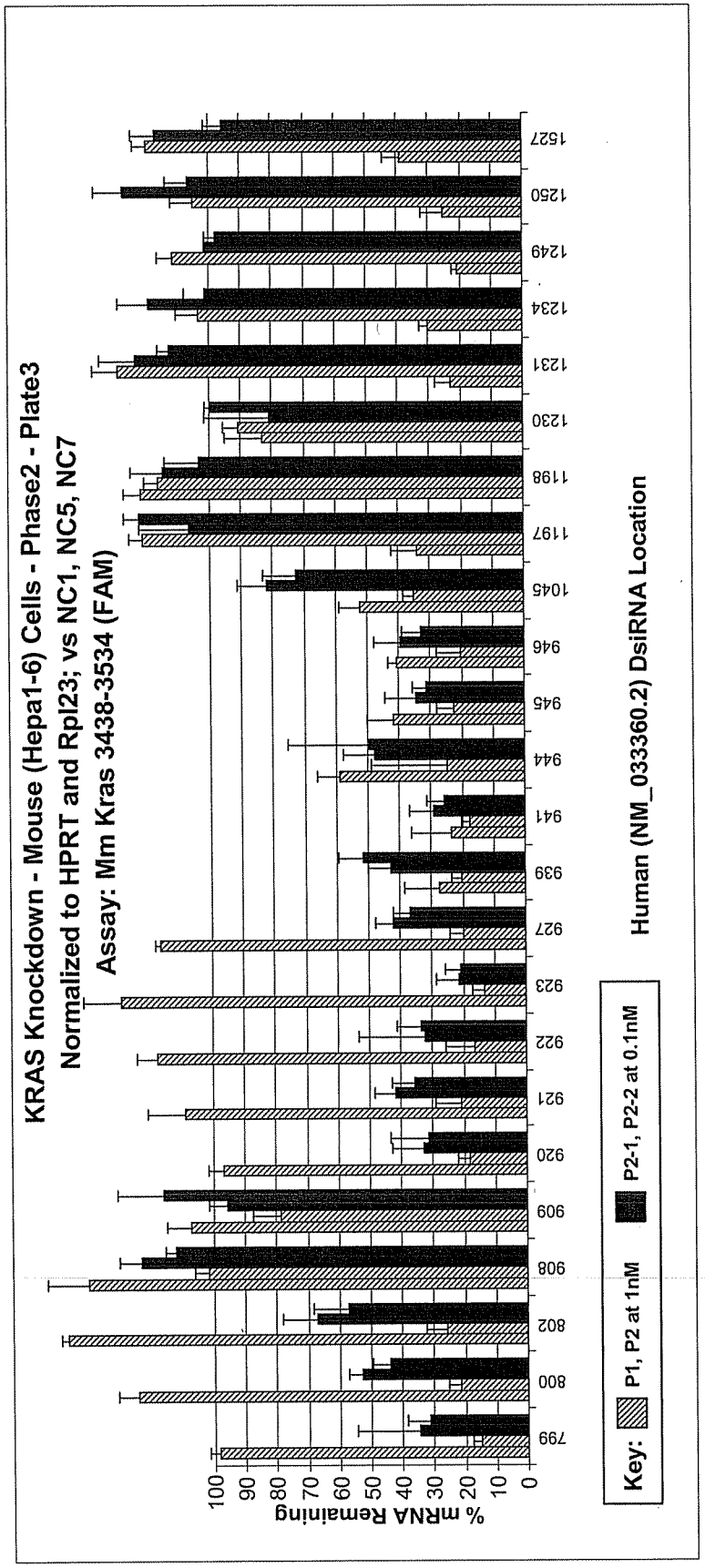

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate3
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm Kras 3438-3534 (FAM)
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
799
800
802
908
909
920
921
922
923
927
939
941
944
945
946
1045
1197
1198
1230
1231
1234
1249
1250
1527
Human (NM_033360.2) DsiRNA Location
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM

Figure 28

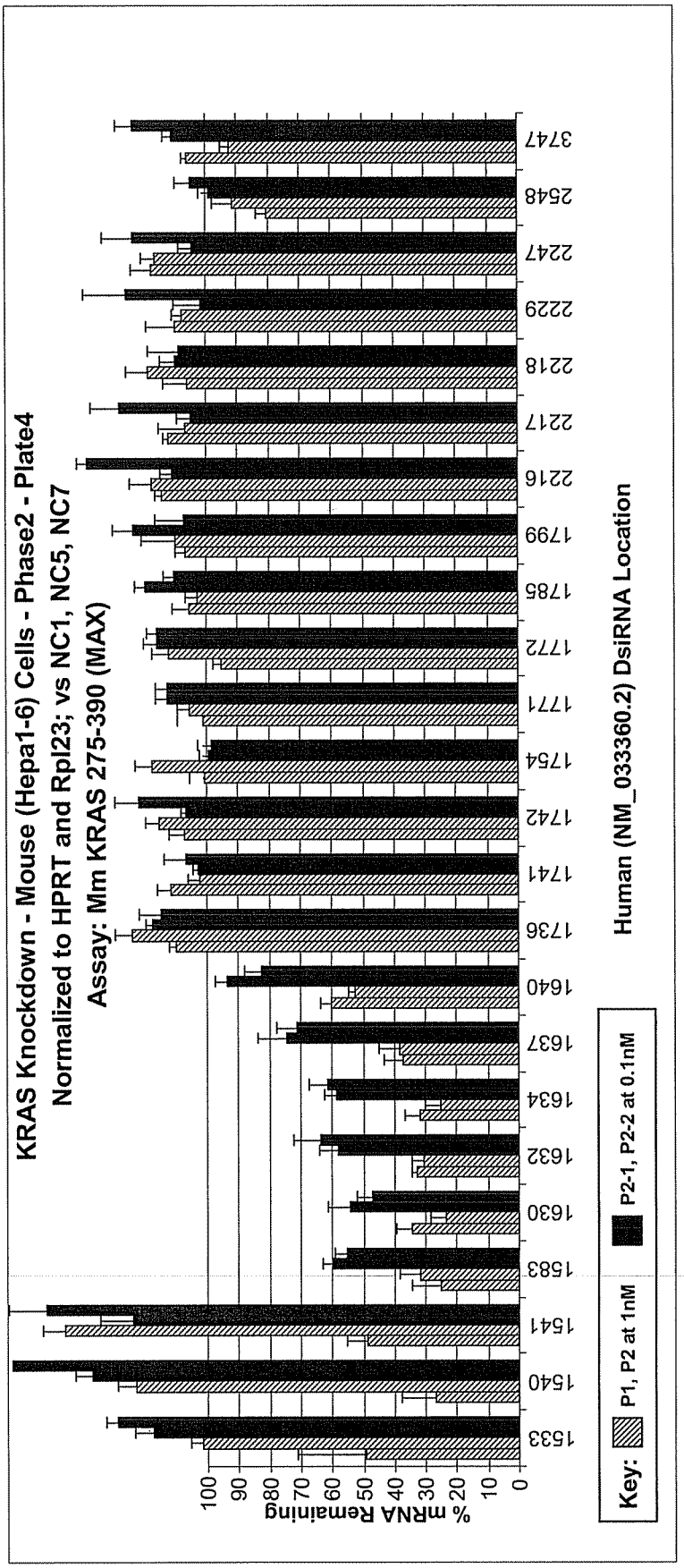

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate4
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm KRAS 275-390 (MAX)
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
1533
1540
1541
1583
1630
1632
1634
1637
1640
1736
1741
1742
1754
1771
1772
1785
1799
2216
2217
2218
2229
2247
2548
3747
Human (NM_033360.2) DsiRNA Location
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM

Figure 29

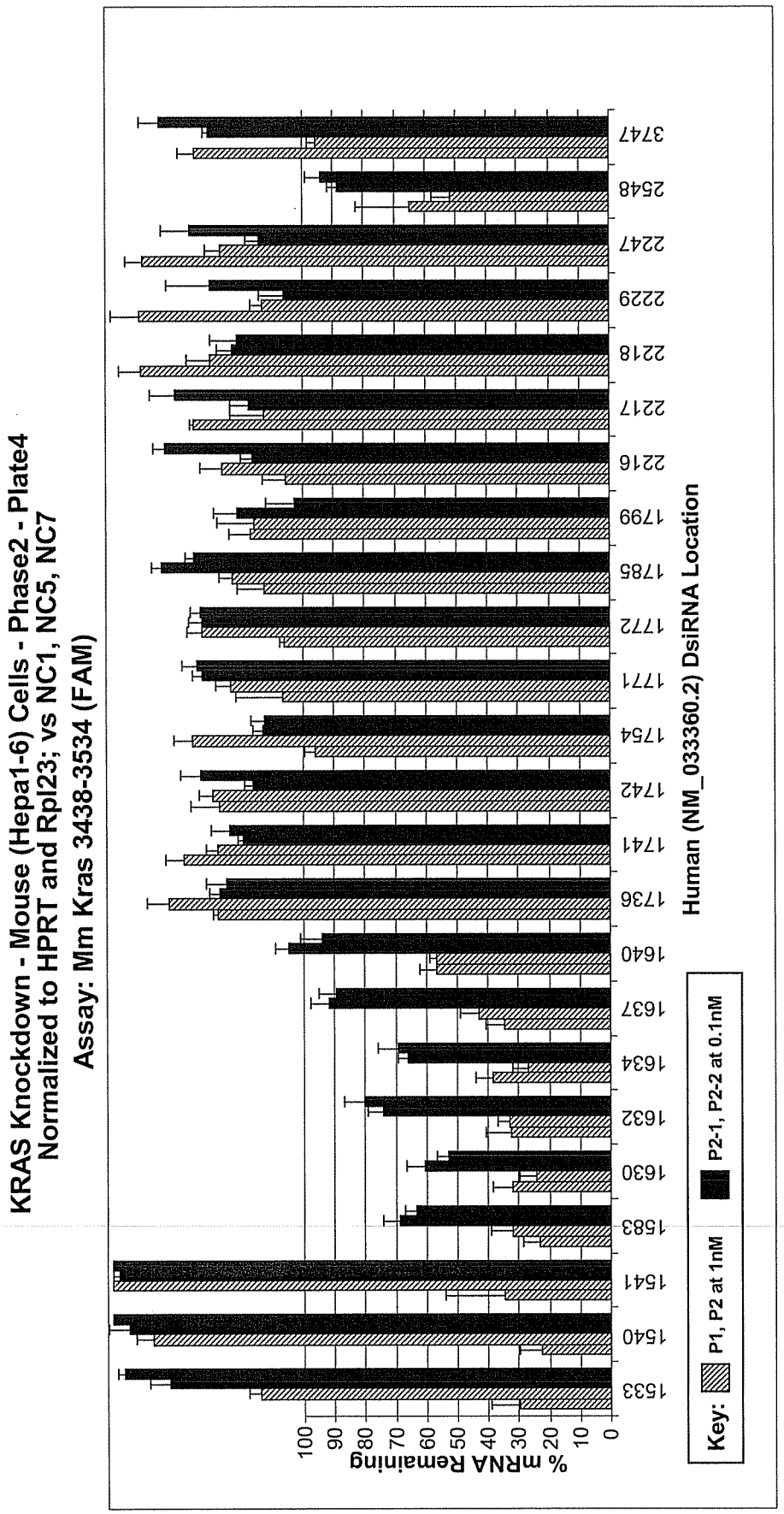

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate4
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm Kras 3438-3534 (FAM)
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
Human (NM_033360.2) DsiRNA Location
1533
1540
1541
1583
1630
1632
1634
1637
1640
1736
1741
1742
1754
1771
1772
1785
1799
2216
2217
2218
2229
2247
2548
3747
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM

Figure 30

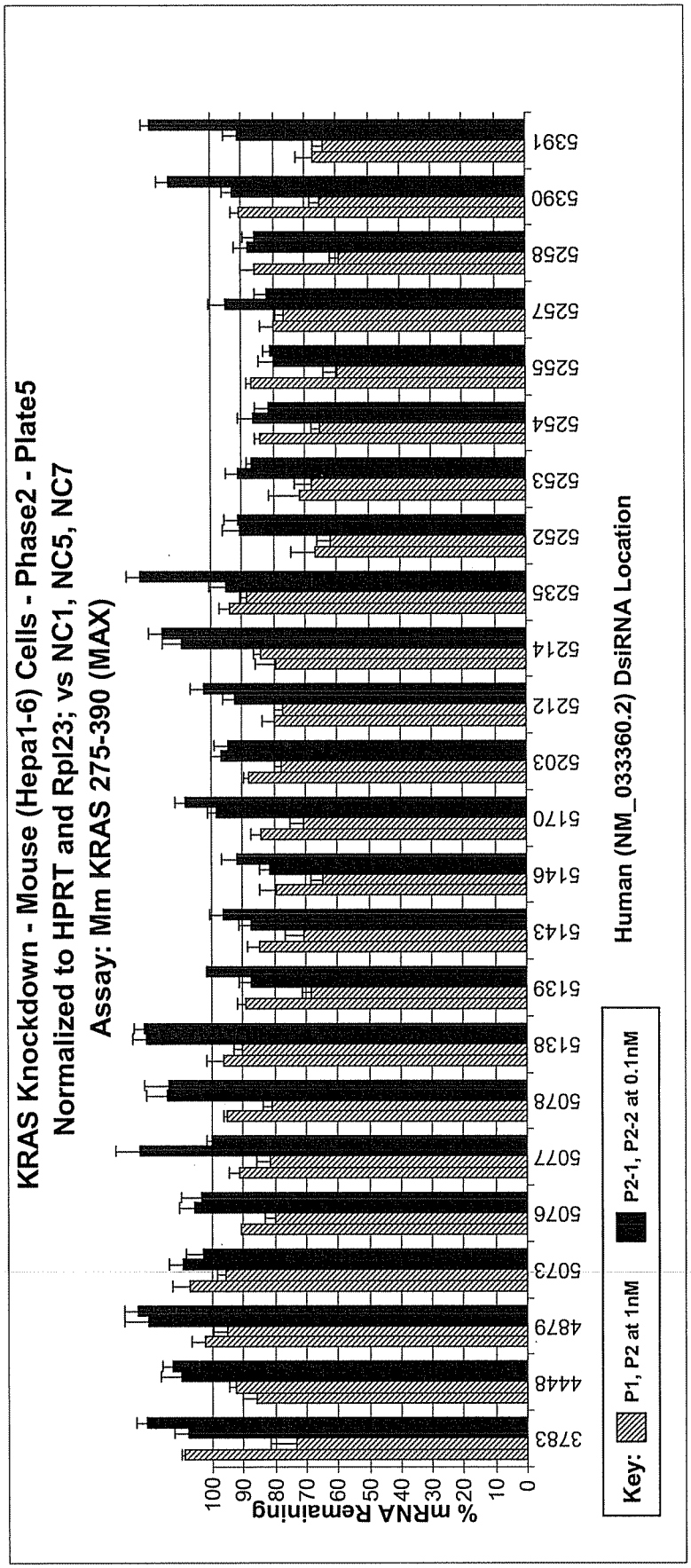
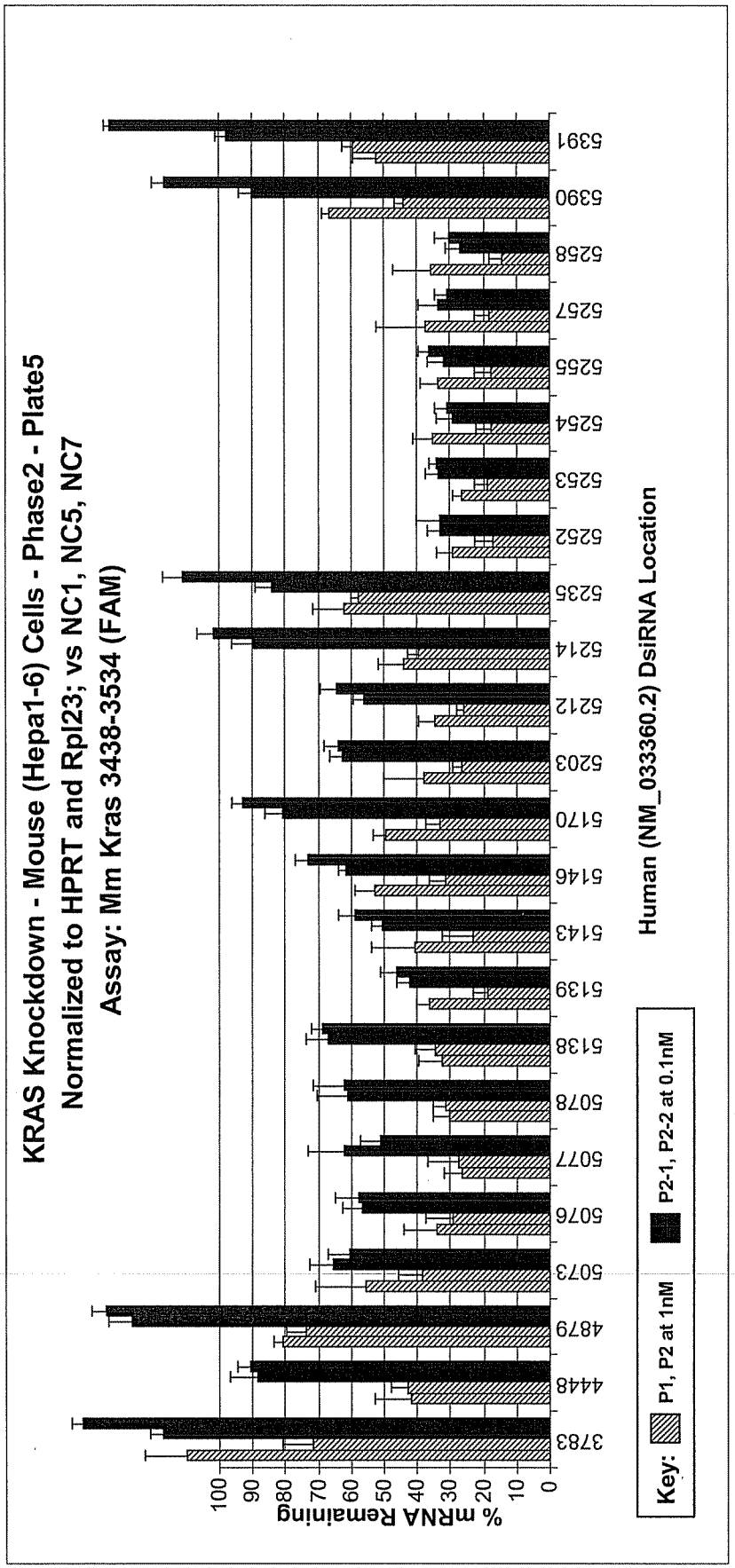
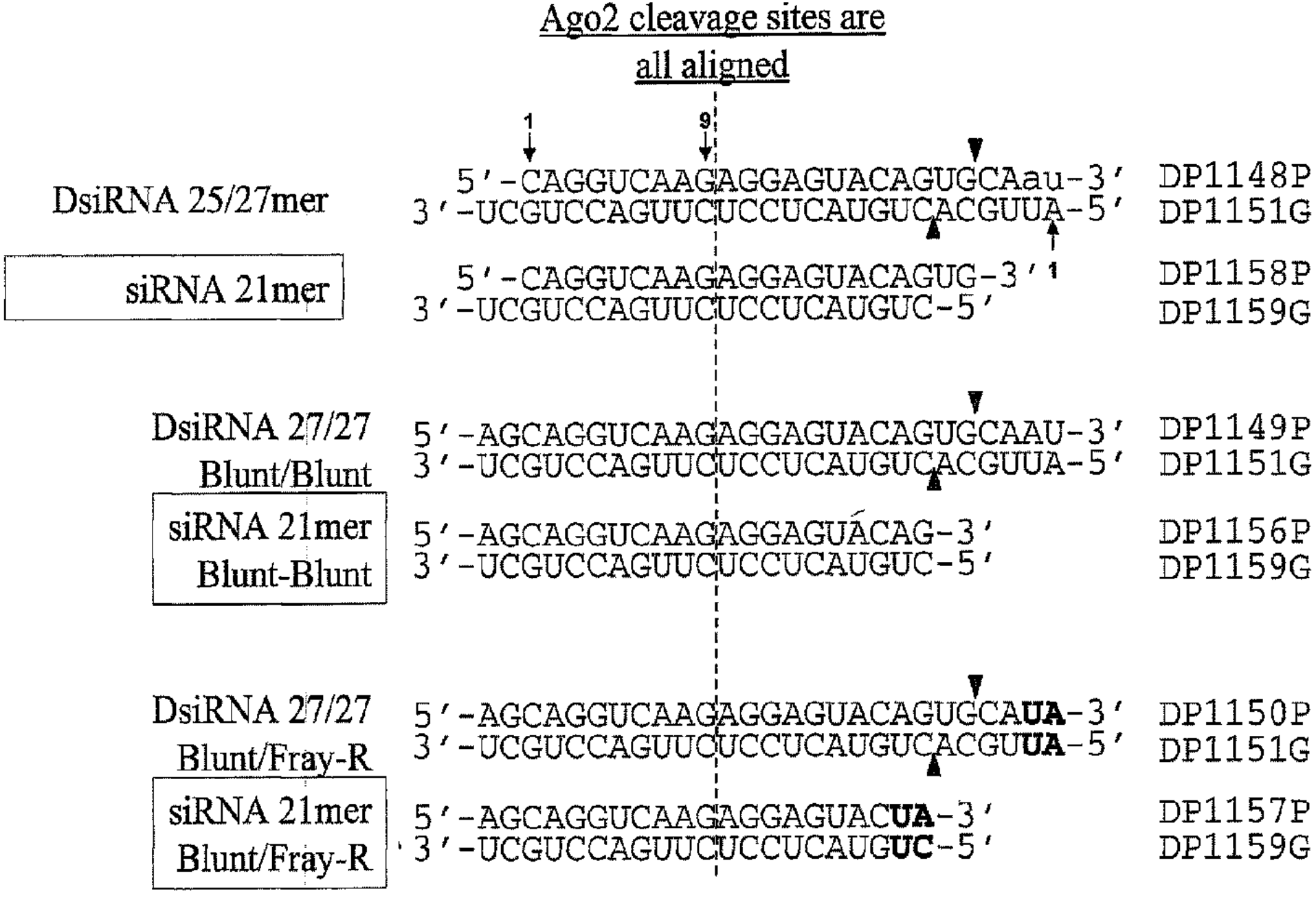

KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate5
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm KRAS 275-390 (MAX)
% mRNA Remaining
100
90
80
70
60
50
40
30
20
10
0
3783
4448
4879
5073
5076
5077
5078
5138
5139
5143
5146
5170
5203
5212
5214
5235
5252
5253
5254
5255
5257
5258
5390
5391
Human (NM_033360.2) DsiRNA Location
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM

Figure 31


KRAS Knockdown - Mouse (Hepa1-6) Cells - Phase2 - Plate5
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7
Assay: Mm Kras 3438-3534 (FAM)
% mRNA Remaining
0
10
20
30
40
50
60
70
80
90
100
3783
4448
4879
5073
5076
5077
5078
5138
5139
5143
5146
5170
5203
5212
5214
5235
5252
5253
5254
5255
5257
5258
5390
5391
Human (NM_033360.2) DsiRNA Location
Key:
P1, P2 at 1nM
P2-1, P2-2 at 0.1nM


Ago2 cleavage sites are all aligned
1
9
DsiRNA 25/27mer
5′-CAGGUCAAGAGGAGUACAGUGCAau-3′ DP1148P
3′-UCGUCCAGUUCUCCUCAUGUCACGUUA-5′ DP1151G
siRNA 21mer
5′-CAGGUCAAGAGGAGUACAGUG-3′ DP1158P
3′-UCGUCCAGUUCUCCUCAUGUC-5′ DP1159G
DsiRNA 27/27 Blunt/Blunt
5′-AGCAGGUCAAGAGGAGUACAGUGCAAU-3′ DP1149P
3′-UCGUCCAGUUCUCCUCAUGUCACGUUA-5′ DP1151G
siRNA 21mer Blunt-Blunt
5′-AGCAGGUCAAGAGGAGUACAG-3′ DP1156P
3′-UCGUCCAGUUCUCCUCAUGUC-5′ DP1159G
DsiRNA 27/27 Blunt/Fray-R
5′-AGCAGGUCAAGAGGAGUACAGUGCAUA-3′ DP1150P
3′-UCGUCCAGUUCUCCUCAUGUCACGUUA-5′ DP1151G
siRNA 21mer Blunt/Fray-R
5′-AGCAGGUCAAGAGGAGUACUA-3′ DP1157P
3′-UCGUCCAGUUCUCCUCAUGUC-5′ DP1159G