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

Ago2 cleavage sites aligned

| DsRNA25/27mer | 3'...AGACAGAGGAGCCCAUCACAAAACAGU 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU 5' |
| siRNA21mer | 3'...AGACAGAGGAGCCCAUCACAAA 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU |
| DsRNA27/27 | 3'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU 3' | 5'...AGACAGAGGAGCCCAUCACAAAACAGU 5' |
| siRNA21mer | 3'...AGACAGAGGAGCCCAUCACAAA 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU |
| Blunt/Blunt | 3'...AGACAGAGGAGCCCAUCACAAA 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU |
| D siRNAs | 3'...AGACAGAGGAGCCCAUCACAAAACAGU 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU 5' |
| Blunt/Blunt | 3'...AGACAGAGGAGCCCAUCACAAA 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU |
| Blunt/Fray-R | 3'...AGACAGAGGAGCCCAUCACAAA 3' | 5'...CGCCCGCGCCCGAGGAGGAGGAGGAGGAGGU |

Title: METHODS AND COMPOSITIONS FOR THE SPECIFIC INHIBITION OF MYC BY DOUBLE-STRANDED RNA

Abstract: This invention relates to compounds, compositions, and methods useful for reducing MYC target RNA and protein levels via use of dsRNAs, e.g., Dicer substrate siRNA (DsRNA) agents.
METHODS AND COMPOSITIONS FOR THE SPECIFIC INHIBITION OF MYC BY DOUBLE-STRANDED RNA

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. 61/701,136, entitled "Methods and Compositions for the Specific Inhibition of MYC by Double-Stranded RNA," filed September 14, 2012; and U.S. provisional patent application No. 61/786,695, entitled "Methods and Compositions for the Specific Inhibition of MYC by Double-Stranded RNA," filed March 15, 2013. The entire contents of the aforementioned patent applications are incorporated herein by this reference.

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 c-Myc gene expression and/or activity.

BACKGROUND OF THE INVENTION

The c-MYC (MYC) gene is a key molecular regulator of cellular growth and differentiation. Myc protein is a transcription factor that activates expression of many genes via binding of consensus sequences (Enhancer Box sequences (E-boxes)) and recruitment of histone acetyltransferases (HATs). Myc can also act as a transcriptional repressor. By binding Miz-1 transcription factor and displacing the p300 co-activator, Myc inhibits expression of Miz-1 target genes. In addition, Myc has a direct role in the control of DNA replication (Dominguez-Sola et al. Nature 448 (7152): 445-51).

Various mitogenic signaling pathways, including Wnt, Shh and EGF (via the MAPK/ERK pathway), have been demonstrated to activate Myc. Myc's role in modifying the expression of its target genes has been shown to cause numerous biological effects. The first to be discovered was its capability to drive cell proliferation (upregulates cyclins, downregulates p21), but Myc also plays a very important role in regulating cell growth (upregulates ribosomal RNA and proteins), apoptosis (downregulates Bcl-2), differentiation and stem cell self-renewal. Myc is a strong proto-oncogene and its upregulation has been
described in many types of cancers. Myc overexpression stimulates gene amplification (Denis et al. Oncogene 6 (8): 1453-7), via a mechanism believed to involve DNA over-replication.

At least because of the MYC oncogene's propensity to increase cell proliferation when specifically mutated or overexpressed, MYC is an attractive target for inhibitory oncotherapeutics, including small molecule and nucleic acid inhibitors of MYC.

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).

Provided herein are improved nucleic acid agents that target MYC. In particular, those targeting MYC have been specifically exemplified.

BRIEF SUMMARY OF THE INVENTION

The present invention is directed to nucleic acid compositions that reduce expression of MYC. Such compositions contain nucleic acids such as double stranded RNA ("dsRNA"), and methods for preparing them. The nucleic acids of the invention are capable of reducing the expression of a target MYC gene in a cell, either in vitro or in a mammalian subject.

In one aspect, the invention provides an isolated nucleic acid having an oligonucleotide strand of 15-35 nucleotides in length, where the oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence of Table 15 along at least 15 nucleotides of the oligonucleotide strand length to reduce MYC target mRNA expression when the nucleic acid is introduced into a mammalian cell.

Another aspect of the invention provides an isolated nucleic acid having an oligonucleotide strand of 19-35 nucleotides in length, where the oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence of Table 14 along at least 19 nucleotides of the oligonucleotide strand length to reduce MYC target mRNA expression when the nucleic acid is introduced into a mammalian cell.

An additional aspect of the invention provides an isolated double stranded nucleic acid (dsNA) having first and second nucleic acid strands possessing RNA, where the first
strand is 15-35 nucleotides in length and the second strand of the dsNA is 19-35 nucleotides in length, where the second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence of Table 15 along at least 15 nucleotides of the second oligonucleotide strand length to reduce MYC target mRNA expression when the double stranded nucleic acid is introduced into a mammalian cell.

A further aspect of the invention provides an isolated double stranded nucleic acid (dsNA) having first and second nucleic acid strands, where the first strand is 15-35 nucleotides in length and the second strand of the dsNA is 19-35 nucleotides in length, where the second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence of Table 14 along at least 19 nucleotides of the second oligonucleotide strand length to reduce MYC target mRNA expression when the double stranded nucleic acid is introduced into a mammalian cell.

Another aspect of the invention provides an isolated double stranded nucleic acid (dsNA) having first and second nucleic acid strands, where the first strand is 15-35 nucleotides in length and the second strand of the dsNA is 19-35 nucleotides in length, where the second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence of Table 13 along at least 19 nucleotides of the second oligonucleotide strand length to reduce MYC target mRNA expression, and wherein, starting from the 5’ end of the MYC mRNA sequence of Table 13 (position 1), mammalian Ago2 cleaves the mRNA at a site between positions 9 and 10 of the sequence, when the double stranded nucleic acid is introduced into a mammalian cell.

An additional aspect of the invention provides an isolated dsNA molecule formed by: (a) a sense region and an antisense region, where the sense region and the antisense region together form a duplex region of 25-35 base pairs and the antisense region contains a sequence that is the complement of a sequence of Table 12; and (b) from zero to two 3’ overhang regions, where each overhang region is six or fewer nucleotides in length.

A further aspect of the invention provides an isolated dsNA molecule formed by: (a) a sense region and an antisense region, where the sense region and the antisense region together form a duplex region of 25-35 base pairs and the antisense region contains a sequence that is the complement of a sequence of Table 12; and (b) from zero to two 3’ overhang regions, wherein each overhang region is six or fewer nucleotides in length, and where, starting from the 5’ end of the MYC mRNA sequence of Table 11 (position 1),
mammalian Ago2 cleaves the mRNA at a site between positions 9 and 10 of the sequence, when the double stranded nucleic acid is introduced into a mammalian cell.

Another aspect of the invention provides an isolated double stranded nucleic acid (dsNA) having first and second nucleic acid strands and a duplex region of at least 25 base pairs, where the first strand is 25-34 nucleotides in length and the second strand of the dsNA is 26-35 nucleotides in length and possesses 1-5 single-stranded nucleotides at its 3’ terminus, where the second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence of Table 11 along at least 19 nucleotides of the second oligonucleotide strand length to reduce MYC 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 nucleic acid (dsNA) having first and second nucleic acid strands and a duplex region of at least 25 base pairs, where the first strand is 25-34 nucleotides in length and the second strand of the dsNA is 26-35 nucleotides in length and possesses 1-5 single-stranded nucleotides at its 3’ terminus, wherein the 3’ terminus of the first oligonucleotide strand and the 5’ terminus of the second oligonucleotide strand form a blunt end, and the second oligonucleotide strand is sufficiently complementary to a target MYC sequence of SEQ ID NOs: 1309-1635 and 1963-3270 along at least 19 nucleotides of the second oligonucleotide strand length to reduce MYC mRNA expression when the double stranded nucleic acid is introduced into a mammalian cell.

In one embodiment, the isolated dsNA has a duplex region of at least 25 base pairs, 19-21 base pairs or 21-25 base pairs. In another embodiment, the second oligonucleotide strand possesses 1-5 single-stranded nucleotides at its 3’ terminus. In a further embodiment, the first strand is 25-35 nucleotides in length. In certain embodiments, the invention also provides for an isolated dsNA where the first strand is 26-35 nucleotides in length, 27-35 nucleotides in length, 28-35 nucleotides in length, 29-35 nucleotides in length, 30-35 nucleotides in length, 31-35 nucleotides in length, 33-35 nucleotides in length, 34-35 nucleotides in length, 17-35 nucleotides in length, 19-35 nucleotides in length, 21-35 nucleotides in length, 23-35 nucleotides in length, 17-33 nucleotides in length, 17-31 nucleotides in length, 17-29 nucleotides in length, 17-27 nucleotides in length, 21-35 nucleotides in length or 19-33 nucleotides in length.

In one embodiment, the second strand is 25-35 nucleotides in length. In certain embodiments, the invention also provides for an isolated dsNA where the second strand is 26-35 nucleotides in length, 27-35 nucleotides in length, 28-35 nucleotides in length, 29-35

In another embodiment, the second oligonucleotide strand is complementary to a target MYC cDNA sequence of GenBank Accession Nos. NM_002467.4 and NM_010849.4 along at most 27 nucleotides of the second oligonucleotide strand length. In one embodiment, the dsNA includes a modified nucleotide. Optionally, the modified nucleotide residue is 2'-O-methyl, 2'-methoxyethoxy, 2'-fluoro, 2'-allyl, 2'-O-[2-(methylamino)-2-oxoethyl], 4'-thio, 4'-CH2-0-2'-bridge, 4'-(CH2)2-0-2'-bridge, 2'-LNA, 2'-amino or 2'-0-(N-methylcarbamate).

In certain embodiments, 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. Optionally, the modified nucleotide residue of the 3' terminus of the first strand is a deoxyribonucleotide, an acyclonucleotide or a fluorescent molecule. In certain embodiments, position 1 of the 3' terminus of the first oligonucleotide strand is a deoxyribonucleotide.

In one 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 a further embodiment, starting from the 5' end of a MYC mRNA sequence of Table 10 (position 1), mammalian Ago2 cleaves the mRNA at a site between positions 9 and 10 of the sequence, thereby reducing MYC target mRNA expression when the double stranded nucleic acid is introduced into a mammalian cell. In certain embodiments, starting from the 5' end of a MYC mRNA sequence of SEQ ID NOs: 1309-1635 or 1963-2289, mammalian Ago2 cleaves the mRNA at a site between positions 9 and 10 of the mRNA sequence, thereby reducing MYC target mRNA 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: 328-654.

In another embodiment, the first strand includes a sequence of SEQ ID NOs: 1-327, 982-1308 and 1636-1962.
In certain embodiments, a dsNA of the invention includes a pair of first strand/second strand sequences of Table 2.

In some embodiments, each of the first and the second strands has a length which is at least 26 nucleotides. The invention also provides for an isolated dsNA wherein each of the first and the second strands has a length which is at least 27 nucleotides, at least 28 nucleotides, at least 29 nucleotides, at least 30 nucleotides, at least 31 nucleotides, at least 32 nucleotides, at least 33 nucleotides, at least 34 nucleotides or at least 35 nucleotides.

In certain embodiments, the nucleotides of the 1-5 single-stranded nucleotides of the 3’ terminus of the second strand include a modified nucleotide. Optionally, the modified nucleotide of the 1-5 single-stranded nucleotides of the 3’ terminus of the second strand is a 2’-O-methyl ribonucleotide. In some embodiments, all nucleotides of the 1-5 single-stranded nucleotides of the 3’ terminus of the second strand are modified nucleotides. In one embodiment, the 1-5 single-stranded nucleotides of the 3’ terminus of the second strand are 1-3 or, optionally, 1-2 nucleotides in length. In certain embodiments, the 1-5 single-stranded nucleotides of the 3’ terminus of the second strand is two nucleotides in length and includes a 2’-O-methyl modified ribonucleotide.

In one embodiment, the second oligonucleotide strand possesses a modification pattern of AS-M1 to AS-M46 and AS-M1* to AS-M46*. In another embodiment, the first oligonucleotide strand possesses a modification pattern of SMI to SM22.

In another embodiment, each of the first and the second strands has a length which is at least 26 and at most 30 nucleotides. The invention also provides for an isolated dsNA wherein either or each of the first and the second strands has a length which is at least 27 and at most 30 nucleotides, at least 28 and at most 30 nucleotides and at least 29 or at most 30 nucleotides.

In certain embodiments, the dsNA is cleaved endogenously in a cell by Dicer.

In some embodiments, the amount of the isolated 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 one embodiment, an isolated dsNA of the invention possesses greater potency than an isolated 21mer siRNA directed to the identical at least 19 nucleotides of the target MYC mRNA in reducing target MYC mRNA 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 another embodiment, an isolated dsNA of the invention is sufficiently complementary to the target MYC mRNA sequence to reduce MYC target mRNA expression by an amount (expressed by %) of 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 related embodiments, the invention provides for an isolated dsNA that is sufficiently complementar to a target MYC mRNA sequence along at least 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 or more nucleotides of the second oligonucleotide strand length to reduce MYC target mRNA expression when the dsNA is introduced into a mammalian cell.

In one embodiment, the first and second strands of a dsNA of the invention are joined by a chemical linker. Optionally, the 3' terminus of the first strand and the 5' terminus of the second strand are joined by a chemical linker.

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

In some embodiments, an isolated nucleic acid of the invention possesses a modified nucleotide that is a deoxyribo nucleotide, a dideoxyribo nucleotide, an acyclonucleotide, a 3'-deoxyadenosine (cordycepin), a 3'-azido-3'-deox ythymidine (AZT), a 2',3'-dideoxyinosine (ddl), a 2',3'-dideoxy-3'-thiacytidine (3TC), a 2',3'-didehydro-2',3'-dideoxythymidine (d4T), a monophosphate nucleotide of 3'-azido-3'-deox ythymidine (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'-0-alkyl ribonucleotide, a 2'-0-methyl ribonucleotide, a 2'-amino ribonucleotide, a 2'-fluoro ribonucleotide, or a locked nucleic acid.

In one embodiment, a dsNA of the invention possesses a phosphate backbone modification that is a phosphonate, a phosphorothioate or a phosphotriester.

Optionally, a dsNA of the invention possesses a modification that is a morpholino nucleic acid or a peptide nucleic acid (PNA).

Another aspect of the invention provides a method for reducing expression of a target MYC gene in a mammalian cell involving contacting a mammalian cell in vitro with an isolated dsNA of the invention in an amount sufficient to reduce expression of a target MYC mRNA in the cell.

In one embodiment, MYC mRNA levels are reduced by an amount (expressed by %) of at least 90% at least 8 days after the cell is contacted with the dsNA. In another
embodiment, MYC mRNA levels are reduced by an amount (expressed by %) of at least 70% at least 10 days after the cell is contacted with the dsNA.

A further aspect of the invention provides a method for reducing expression of a target MYC mRNA in a mammal involving administering an isolated nucleic acid of the invention in an amount sufficient to reduce expression of a target MYC mRNA in the mammal.

Another aspect of the invention provides a method for reducing tumor burden in a mammal involving administering an isolated nucleic acid of the invention to a mammal in an amount sufficient to reduce tumor burden in the mammal.

In one embodiment, the tumor is a hepatocellular carcinoma. In another embodiment, the tumor burden is reduced by 50-80%, as compared to a suitable control.

In certain embodiments, the isolated nucleic acid is formulated in a lipid nanoparticle (LNP).

In some embodiments, the isolated nucleic acid 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 certain embodiments, the isolated nucleic acid of the invention possesses greater potency than isolated 21mer siRNAs directed to the identical at least 19 nucleotides of the target MYC mRNA in reducing target MYC mRNA 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 one embodiment, MYC mRNA levels are reduced in a tissue of the mammal by an amount (expressed by %) of at least 70% at least 3 days after the isolated dsNA is administered to the mammal. Optionally, the tissue is liver tissue.

In some embodiments, the administering step involves intravenous injection, intramuscular injection, intraperitoneal injection, infusion, subcutaneous injection, transdermal, aerosol, rectal, vaginal, topical, oral or inhaled delivery.

A further aspect of the invention provides a method for selectively inhibiting the growth of a cell that involves contacting a cell with an amount of an isolated nucleic acid of the invention 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.

Another aspect of the invention provides a formulation that includes the isolated nucleic acid of the invention, where the nucleic acid is present in an amount effective to reduce target MYC mRNA levels when the nucleic acid is introduced into a mammalian cell *in vitro* by an amount (expressed by %) of at least 10%, at least 50% or at least 80-90%.

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.

An additional aspect of the invention provides a formulation containing the isolated dsNA of the invention, where the dsNA is present in an amount effective to reduce target MYC mRNA levels when the dsNA is introduced into a cell of a mammalian subject by an amount (expressed by %) of the group consisting of at least 10%, at least 50% and at least 80-90%.

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.

Another aspect of the invention provides a mammalian cell containing an isolated nucleic acid of the invention.

A further aspect of the invention provides a pharmaceutical composition containing the isolated nucleic acid of the invention and a pharmaceutically acceptable carrier.

An additional aspect of the invention provides a kit that includes the isolated nucleic acid of the invention and instructions for its use.

In another aspect, the invention provides a method for treating or preventing a MYC-associated disease or disorder in a subject that involves administering an isolated nucleic acid of the invention and a pharmaceutically acceptable carrier to the subject in an amount sufficient to treat or prevent the MYC-associated disease or disorder in the subject, thereby treating or preventing the MYC-associated disease or disorder in the subject.

In one embodiment, the MYC-associated disease or disorder is liver, renal, breast, lung, ovarian, cervical, esophageal, oropharyngeal or pancreatic cancer. Optionally, the MYC-associated disease or disorder is hepatocellular carcinoma.
Another aspect of the invention provides a composition possessing MYC inhibitory activity consisting essentially of an isolated nucleic acid of the invention.

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 MYC gene expression pathways or other cellular processes that mediate the maintenance or development of such traits, diseases and conditions. In certain aspects, 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 MYC gene expression. The anti-MYC dsRNAs of the invention are useful, for example, in providing compositions for treatment of traits, diseases and conditions that can respond to modulation of MYC in a subject, such as cancer and/or other proliferative diseases, disorders, or conditions. Efficacy, potency, toxicity and other effects of an anti-MYC dsRNA can be examined in one or more animal models of proliferative disease (exemplary animal models of proliferative disease are recited below).

**BRIEF DESCRIPTION OF THE DRAWINGS**

*Figure 1* shows the structures of exemplary DsiRNA agents of the invention targeting a site in the MYC RNA referred to herein as the "MYC-953" target site. **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 MYC sequence.

*Figures 2A to 2H* present primary screen data showing DsiRNA-mediated knockdown of human MYC (Figures 2A to 2D) and mouse MYC (Figures 2E to 2H) in human and mouse cells, respectively. For each DsiRNA tested, three independent qPCR amplicons were assayed (in human cells, amplicons "514-620", "1227-1347" and "1771-1872" were assayed, while in mouse cells, amplicons "539-663", "1339-1428" and "1971-2062" were assayed).

*Figures 3A to 3H* show histograms of human and mouse MYC inhibitory efficacies observed for indicated DsiRNAs. "PI" indicates phase 1 (primary screen), while "P2" indicates phase 2. In phase 1, DsiRNAs were tested at 1 nM in the environment of A549 cells (human cell assays; Figures 3A to 3D) or mouse cells (Hepa 1-6 cell assays; Figures 3E to 3H). In phase 2, DsiRNAs were tested at 1 nM and at 0.1 nM (duplicate assays) in the environment of A549
cells. Individual bars represent average human (Figures 3A to 3D) or mouse (Figures 3E to 3H) MYC levels observed in triplicate, with standard errors shown. Human MYC levels were normalized to HPRT and SFRS9 levels, while mouse MYC levels were normalized to HPRT and Rpl23 levels.

Figures 4A to 4H present histograms showing efficacy data for 24 independent MYC-targeting DsiRNA sequences across four different guide (antisense) strand 2'-0-methyl modification patterns ("M17", "M35", "M48" and "M8", respectively, as shown in Figures 4A to 4H, noting that modification patterns are recited as passenger strand modification pattern (here, "MO", or unmodified)-guide strand modification pattern, e.g., "M0-M17", "M0-M35", "M0-M48" or "M0-M8") in human A549 cells (Figures 4A to 4D) and mouse Hepa 1-6 cells (Figures 4E to 4H) at 0.1 nM (duplicate assays) and 1 nM.

Figures 5A to 5F present histograms showing efficacy data for 19 independent MYC-targeting DsiRNA sequences across varying passenger (sense) and guide (antisense) strand 2’-O-methyl modification patterns (modification patterns are recited as passenger strand modification pattern -guide strand modification pattern) in human A549 cells at 0.1 nM (duplicate assays) and 1 nM, with comparison to phase I (unmodified) levels of inhibition at 1 nM also shown.

Figures 6A to 6D show histograms demonstrating efficacy data for seven independent MYC-targeting DsiRNA sequences that incorporate mismatches with respect to the MYC mRNA target sequence, in human A549 cells at 0.1 nM (duplicate assays) and 1 nM, with comparison to phase 4 results (obtained with the native sequence only, which does not include any mismatches) at 1 nM also shown.

Figures 7A to 7L present an additional 2’-O-methyl modification screen performed upon MYC-622, MYC-953 and MYC-1711 duplexes. Figures 7A to 7H show schematic depictions of duplex modifications used in such assays, while Figures 7I and 7J present schematic depictions of individual sense strand and antisense strand 2’-O-methyl modification patterns, respectively. Figures 7K and 7L display histograms showing efficacy data for these MYC-targeting DsiRNA sequences across the varying passenger (sense) and guide (antisense) strand 2’-O-methyl modification patterns (modification patterns are recited as passenger strand modification pattern -guide strand modification pattern) in human A549
cells at 0.1 nM (duplicate assays) and 1 nM, with comparison to phase 5 (possessing a M12-M48 modification) levels of inhibition at 1 nM also shown.

Figure 8 presents in vivo efficacy data for lipid nanoparticle (LNP)-formulated exemplary MYC-targeting duplexes possessing 2'-0-methyl modification patterns of both guide and passenger strands, in mice bearing human Hep3B tumors.

Figure 9 shows in vivo efficacy data for exemplary lipid nanoparticle (LNP)-formulated β-Catenin- and MYC-targeting duplexes, respectively, in mice bearing human HepG2 tumors.

Figure 10 shows in vivo dose-response knockdown efficacy data for an exemplary lipid nanoparticle (LNP)-formulated MYC-targeting duplex (here, MYC-1711) in mice bearing human Hep3B tumors.

Figure 11 shows that in vivo duration of effect for an exemplary lipid nanoparticle (LNP)-formulated MYC-targeting duplex (here, MYC-1711) in mice bearing human Hep3B tumors was at least 4 days for mice administered MYC-1711 at 1 mg/kg, and that significant knockdown persisted for at least 168 hours when mice were administered MYC-1711 at 5 mg/kg.

Figure 12 shows that lipid nanoparticle (LNP)-formulated MYC-targeting duplex (here, MYC-1711) was a highly effective in vivo anti-tumor agent when administered to mice bearing human Hep3B tumors. Notably, such phenotypic efficacy of MYC-targeting duplexes at producing tumor reduction also exhibited dose-response. (***, P<0.001; ****, P<0.0001)

Figure 13 shows that MYC-1711 duplexes presenting a number of different 2'-0-methyl patterns (here, "M12-M48", "M32-M48", "M50-M73" and "M50-M48" patterned duplexes) exhibited significant Hep3B tumor reduction in vivo.

Figure 14 shows that low-dose DsiRNA administrations (twice-a-week (BIW) or even once-a-week (QW)) were highly effective at reducing Hep3B tumor size in vivo.

Figure 15 shows that MYC-targeting DsiRNA (here, MYC-621) exhibited significant reduction of HT29 colon cancer tumor volume in vivo.

Figure 16 shows that MYC-targeting DsiRNA exhibited significant reduction of MIA PaCa-2 pancreatic cancer tumor volume in vivo.
DETAILED DESCRIPTION OF THE INVENTION

The present invention is directed to compositions that contain nucleic acids, for example double stranded RNA ("dsRNA"), and methods for preparing them, that are capable of reducing the level and/or expression of the MYC 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 MYC 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) MYC 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 MYC misregulation (e.g., tumor formation and/or growth, etc.). The DsiRNA agents of the invention modulate MYC RNAs such as those corresponding to the cDNA sequences referred to by GenBank Accession Nos. NM_002467.4 (human MYC) and NM_010849.4 (mouse MYC, transcript variant 1), which are referred to herein generally as "MYC."

The below description of the various aspects and embodiments of the invention is provided with reference to exemplary MYC RNAs, generally referred to herein as MYC. However, such reference is meant to be exemplary only and the various aspects and embodiments of the invention are also directed to alternate MYC RNAs, such as mutant MYC RNAs or additional MYC splice variants. Certain aspects and embodiments are also directed to other genes involved in MYC pathways, including genes whose misregulation acts in association with that of MYC (or is affected or affects MYC regulation) to produce phenotypic effects that may be targeted for treatment (e.g., tumor formation and/or growth,
etc.). BAK1, Noxa, BCL2L1, Bcl-2-associated death promoter, PCNA, DADI, TNKS and BH3 interacting domain death agonist are examples of genes that interact with MYC. Such additional genes, including those of pathways that act in coordination with MYC, can be targeted using dsRNA and the methods described herein for use of MYC-targeting dsRNAs. Thus, the inhibition and the effects of such inhibition of the other genes can be performed as described herein.

The term "MYC" refers to nucleic acid sequences encoding a Myc protein, peptide, or polypeptide (e.g., MYC transcripts, such as the sequences of MYC Genbank Accession Nos. NM_002467.4 and NM_010849.4). In certain embodiments, the term "MYC" is also meant to include other MYC encoding sequence, such as other MYC isoforms, mutant MYC genes, splice variants of MYC genes, and MYC gene polymorphisms. The term "MYC" is also used to refer to the polypeptide gene product of a MYC gene/transcript, e.g., a Myc protein, peptide, or polypeptide, such as those encoded by MYC Genbank Accession Nos. NP_002458.2 and NP_034979.3.

As used herein, a "MYC-associated disease or disorder" refers to a disease or disorder known in the art to be associated with altered MYC expression, level and/or activity. Notably, a "MYC-associated disease or disorder" includes cancer and/or proliferative diseases, conditions, or disorders. Certain exemplary "MYC-associated disease or disorders" include liver cancer (e.g. hepatocellular carcinoma or HCC), lung cancer (e.g., NSCLC), colorectal cancer, prostate cancer, pancreatic cancer, ovarian cancer, cervical cancer, brain cancer (e.g., glioblastoma), renal cancer (e.g., papillary renal carcinoma), stomach cancer, esophageal cancer, medulloblasoma, thyroid carcinoma, rhabdomyosarcoma, osteosarcoma, squamous cell carcinoma (e.g., oral squamous cell carcinoma), melanoma, breast cancer, and hematopoietic disorders (e.g., leukemias and lymphomas, and other immune cell-related disorders). Other hyperproliferative diseases or disorders may also be targeted, including, e.g., bladder, cervical (uterine), endometrial (uterine), head and neck, and oropharyngeal cancers.

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 hepatocellular carcinoma (HCC), 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, 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, dsRNA-mediated inhibition of a MYC target sequence is assessed. In such embodiments, MYC RNA levels can be assessed by art-recognized methods (e.g., RT-PCR, Northern blot, expression array, etc.), optionally via comparison of MYC levels in the presence of an anti-MYC dsRNA of the invention relative to the absence of such an anti-MYC dsRNA. In certain embodiments, MYC levels in the presence of an anti-MYC dsRNA are compared to those observed in the presence of vehicle alone, in the presence of a dsRNA directed against an unrelated target RNA, or in the absence of any treatment.

It is also recognized that levels of Myc protein can be assessed and that Myc protein levels are, under different conditions, either directly or indirectly related to MYC RNA levels and/or the extent to which a dsRNA inhibits MYC expression, thus art-recognized methods of assessing Myc protein levels (e.g., Western blot, immunoprecipitation, other antibody-based methods, etc.) can also be employed to examine the inhibitory effect of a dsRNA of the invention.
An anti-MYC dsRNA of the invention is deemed to possess "MYC inhibitory activity" if a statistically significant reduction in MYC RNA (or when the Myc protein is assessed, Myc protein levels) is seen when an anti-MYC dsRNA of the invention is administered to a system (e.g., cell-free in vitro system), cell, tissue or organism, as compared to a selected 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 MYC RNA (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, "MYC inhibitory activity" is defined based upon a % or absolute level of reduction in the level of MYC in a system, cell, tissue or organism. For example, in certain embodiments, a dsRNA of the invention is deemed to possess MYC inhibitory activity if at least a 5% reduction or at least a 10% reduction in MYC RNA is observed in the presence of a dsRNA of the invention relative to MYC levels seen for a suitable control. (For example, in vivo MYC levels in a tissue and/or subject can, in certain embodiments, be deemed to be inhibited by a dsRNA agent of the invention if, e.g., a 5% or 10% reduction in MYC levels is observed relative to a control.) In certain other embodiments, a dsRNA of the invention is deemed to possess MYC inhibitory activity if MYC RNA levels are observed to be reduced by at least 15% relative to a selected control, by at least 20% relative to a selected control, by at least 25% relative to a selected control, by at least 30% relative to a selected control, by at least 35% relative to a selected control, by at least 40% relative to a selected control, by at least 45% relative to a selected control, by at least 50% relative to a selected control, by at least 55% relative to a selected control, by at least 60% relative to a selected control, by at least 65% relative to a selected control, by at least 70% relative to a selected control, by at least 75% relative to a selected control, by at least 80% relative to a selected control, by at least 85% relative to a selected control, by at least 90% relative to a selected control, by at least 95% relative to a selected control, by at least 96% relative to a selected control, by at least 97% relative to a selected control, by at least 98% relative to a selected control or by at least 99% relative to a selected control. In some embodiments, complete inhibition of MYC is required for a dsRNA to be deemed to possess MYC inhibitory activity. In certain models (e.g., cell culture), a dsRNA is deemed to possess MYC inhibitory activity if at least a 50% reduction in MYC levels is observed relative to a suitable control. In certain other embodiments, a dsRNA is deemed to possess MYC inhibitory activity if at least an 80% reduction in MYC levels is observed relative to a suitable control.
By way of specific example, in Example 2 below, a series of DsiRNAs targeting MYC were tested for the ability to reduce MYC mRNA levels in human A549 or mouse Hepa 1-6 cells *in vitro*, at 1 nM concentrations in the environment of such cells and in the presence of a transfection agent (Lipofectamine™ RNAiMAX, Invitrogen). Within Example 2 below, MYC inhibitory activity was ascribed to those DsiRNAs that were observed to effect at least a 70% reduction of MYC mRNA levels under the assayed conditions. It is contemplated that MYC inhibitory activity could also be attributed to a dsRNA under either more or less stringent conditions than those employed for Example 2 below, even when the same or a similar assay and conditions are employed. For example, in certain embodiments, a tested dsRNA of the invention is deemed to possess MYC inhibitory activity if at least a 10% reduction, at least a 20% reduction, at least a 30% reduction, at least a 40% reduction, at least a 50% reduction, at least a 60% reduction, at least a 75% reduction, at least an 80% reduction, at least an 85% reduction, at least a 90% reduction, or at least a 95% reduction in MYC mRNA levels is observed in a mammalian cell line *in vitro* at 1 nM dsRNA concentration or lower in the environment of a cell, relative to a suitable control.

Use of other endpoints for determination of whether a double stranded RNA of the invention possesses MYC inhibitory activity is also contemplated. Specifically, in one embodiment, in addition to or as an alternative to assessing MYC mRNA levels, the ability of a tested dsRNA to reduce Myc protein levels (*e.g.*, at 48 hours after contacting a mammalian cell *in vitro* or *in vivo*) is assessed, and a tested dsRNA is deemed to possess MYC inhibitory activity if at least a 10% reduction, at least a 20% reduction, at least a 30% reduction, at least a 40% reduction, at least a 50% reduction, at least a 60% reduction, at least a 70% reduction, at least a 75% reduction, at least an 80% reduction, at least an 85% reduction, at least a 90% reduction, or at least a 95% reduction in Myc protein levels is observed in a mammalian cell contacted with the assayed double stranded RNA *in vitro* or *in vivo*, relative to a suitable control. Additional endpoints contemplated include, *e.g.*, assessment of a phenotype associated with reduction of MYC levels - *e.g.*, reduction of growth of a contacted mammalian cell line *in vitro* and/or reduction of growth of a tumor *in vivo*, including, *e.g.*, halting or reducing the growth of tumor or cancer cell levels as described in greater detail elsewhere herein.

MYC inhibitory activity can also be evaluated over time (duration) and over concentration ranges (potency), with assessment of what constitutes a dsRNA possessing MYC inhibitory activity adjusted in accordance with concentrations administered and
duration of time following administration. Thus, in certain embodiments, a dsRNA of the
invention is deemed to possess MYC inhibitory activity if at least a 50% reduction in MYC
activity is observed/persists 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 of
the dsRNA to a cell or organism. In additional embodiments, a dsRNA of the invention is
deemed to be a potent MYC inhibitory agent if MYC inhibitory activity (e.g., in certain
embodiments, at least 50% inhibition of MYC) 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, for example,
within an in vitro assay for MYC inhibitory activity as described herein. In certain
embodiments, a potent MYC inhibitory dsRNA of the invention is defined as one that is
capable of MYC inhibitory activity (e.g., in certain embodiments, at least 20% reduction of
MYC levels) at a formulated concentration of 10 mg/kg or less when administered to a
subject in an effective delivery vehicle (e.g., an effective lipid nanoparticle formulation).
Preferably, a potent MYC inhibitory dsRNA of the invention is defined as one that is capable
of MYC inhibitory activity (e.g., in certain embodiments, at least 50% reduction of MYC
levels) at a formulated concentration of 5 mg/kg or less when administered to a subject in an
effective delivery vehicle. More preferably, a potent MYC inhibitory dsRNA of the
invention is defined as one that is capable of MYC inhibitory activity (e.g., in certain
embodiments, at least 50% reduction of MYC levels) at a formulated concentration of 5
gg/kg or less when administered to a subject in an effective delivery vehicle. Optionally, a
potent MYC inhibitory dsRNA of the invention is defined as one that is capable of MYC
inhibitory activity (e.g., in certain embodiments, at least 50% reduction of MYC levels) at a
formulated concentration of 2 mg/kg or less, or even 1 mg/kg or less, when administered to a
subject in an effective delivery vehicle.

In certain embodiments, potency of a dsRNA of the invention is determined in
reference to the number of copies of a dsRNA present in the cytoplasm of a target cell that
are required to achieve a certain level of target gene knockdown. For example, in certain
embodiments, a potent dsRNA is one capable of causing 50% or greater knockdown of a
target mRNA when present in the cytoplasm of a target cell at a copy number of 1000 or
fewer RISC-loaded antisense strands per cell. More preferably, a potent dsRNA is one
capable of producing 50% or greater knockdown of a target mRNA when present in the
cytoplasm of a target cell at a copy number of 500 or fewer RISC-loaded antisense strands
per cell. Optionally, a potent dsRNA is one capable of producing 50% or greater knockdown of a target mRNA when present in the cytoplasm of a target cell at a copy number of 300 or fewer RISC-loaded antisense strands per cell.

In further embodiments, the potency of a DsiRNA of the invention can be defined in reference to a 19 to 23mer dsRNA directed to the same target sequence within the same target gene. For example, a DsiRNA of the invention that possesses enhanced potency relative to a corresponding 19 to 23mer dsRNA can be a DsiRNA that reduces a target gene by an additional 5% or more, an additional 10% or more, an additional 20% or more, an additional 30% or more, an additional 40% or more, or an additional 50% or more as compared to a corresponding 19 to 23mer dsRNA, when assayed in an in vitro assay as described herein at a sufficiently low concentration to allow for detection of a potency difference (e.g., transfection concentrations at or below 1 nM in the environment of a cell, at or below 100 pM in the environment of a cell, at or below 10 pM in the environment of a cell, at or below 1 nM in the environment of a cell, in an in vitro assay as described herein; notably, it is recognized that potency differences can be best detected via performance of such assays across a range of concentrations - e.g., 0.1 pM to 10 nM - for purpose of generating a dose-response curve and identifying an IC_{50} value associated with a DsiRNA/dsRNA).

MYC inhibitory levels and/or MYC levels may also be assessed indirectly, e.g., measurement of a reduction of the size, number and/or rate of growth or spread of polyps or tumors in a subject may be used to assess MYC levels and/or MYC inhibitory efficacy of a double-stranded nucleic acid of the instant invention.

In certain embodiments, the phrase "consists essentially of" is used in reference to the anti-MYC dsRNAs of the invention. In some such embodiments, "consists essentially of refers to a composition that comprises a dsRNA of the invention which possesses at least a certain level of MYC inhibitory activity (e.g., at least 50% MYC inhibitory activity) and that also comprises one or more additional components and/or modifications that do not significantly impact the MYC inhibitory activity of the dsRNA. For example, in certain embodiments, a composition "consists essentially of a dsRNA of the invention where modifications of the dsRNA of the invention and/or dsRNA-associated components of the composition do not alter the MYC inhibitory activity (optionally including potency or duration of MYC 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 dsRNA of the
invention in isolation. In certain embodiments, a composition is deemed to consist essentially of a dsRNA of the invention even if more dramatic reduction of MYC 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 MYC inhibitory activity is not significantly elevated (e.g., observed levels of MYC inhibitory activity are within 10% those observed for the isolated dsRNA 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) and unlocked nucleic acids (UNAs; see, e.g., Jensen et al. *Nucleic Acids Symposium Series* 52: 133-4), and derivatives thereof.

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; Uhlman & Peyman, *supra*, all are hereby incorporated by reference herein). 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, deoxycytidine monophosphate, and deoxythymidine monophosphate. Modifications include those naturally occurring 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'-methoxymethoxy, 2'-fluoro, 2'-allyl, 2'-0-[2-(methylamino)-2-oxoethyl], 4'-thio, 4'-CH$_2$-0-2'-bridge, 4'-(CH$_2$)$_2$-0-2'-bridge, 2'-LNA or other bicyclic or "bridged" nucleoside analog, and 2'-0-(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'-0-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. "Modified nucleotides" of the instant invention can also include nucleotide analogs as described above.

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'-MNNMN-3'; 3'-MNNMN-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'-MMNNMMNNMNN-3'; 3'-MMNNMMNNMNN-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 Γ (gamma) 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, which are herein incorporated by reference. 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-nitropyrrrole), 5-bromouracil, 2-aminopurine, 4-thio-dT, 7-(2-thienyl)-imidazo[4,5-b]pyridine (D) and pyrrole-2-carbaldehyde (Pa), 2-amino-6-(2-thienyl)purine (S), 2-oxopyridine (Y), difluorotolyl, 4-fluoro-6-methylbenzimidazole, 4-methylbenzimidazole, 3-methyl isocarboxystyril, 5-methyl isocarboxystyril, and 3-methyl-7-propynyl isocarboxystyril, 7-azaindolyl, 6-methyl-7-azaindolyl, imidizopyridinyl, 9-methyl-imidizopyridinyl, pyrrolypizinyl, isocarboxystyril, 7-propynyl isocarboxystyril, propynyl-7-azaindolyl, 2,4,5-trimethylphenyl, 4-methylindolyl, 4,6-dimethylindolyl, phenyl, napthalenyl, anthracenyl,

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-nitropyrrrole (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 ll;23(21):4363-70; Loakes et al., 3-Nitropyrrrole and 5-nitroindole as universal bases in primers for DNA sequencing and PCR. Nucleic Acids Res. 1995 Jul ll;23(13):2361-6; Loakes and Brown, 5-Nitroindole as an universal base analogue. Nucleic Acids Res. 1994 Oct ll;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 NaHP04 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 USA. 1990 Nov;87(21):8467-71; Antao et al., Nucleic Acids Res. 1991 Nov II;19(21):5901-5). Examples of DNA tetraloops include the d(GNNA) family of tetraloops (e.g., d(GTAA), 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 MYC gene/RNA.

An anti-MYC DsiRNA of the instant invention possesses strand lengths of at least 25 nucleotides. Accordingly, in certain embodiments, an anti-MYC 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 or more 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-MYC 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-MYC DsiRNA agent is comprised of two oligonucleotide strands of differing lengths, with the anti-MYC 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., MYC 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. For example, a dsRNA that is "sufficiently complementary" to a target RNA or cDNA sequence to trigger the destruction of
the target RNA by the RNAi machinery or process can be identified as a dsRNA that causes a detectable reduction in the level of the target RNA in an appropriate assay of dsRNA activity (e.g., an in vitro assay as described in Example 2 below), or, in further examples, a dsRNA that is sufficiently complementary to a target RNA or cDNA sequence to trigger the destruction of the target RNA by the RNAi machinery or process can be identified as a dsRNA that produces at least a 5%, at least a 10%, at least a 15%, at least a 20%, at least a 25%, at least a 30%, at least a 35%, at least a 40%, at least a 45%, at least a 50%, at least a 55%, at least a 60%, at least a 65%, at least a 70%, at least a 75%, at least a 80%, at least a 85%, at least a 90%, at least a 95%, at least a 98% or at least a 99% reduction in the level of the target RNA in an appropriate assay of dsRNA activity. In additional examples, a dsRNA that is sufficiently complementary to a target RNA or cDNA sequence to trigger the destruction of the target RNA by the RNAi machinery or process can be identified based upon assessment of the duration of a certain level of inhibitory activity with respect to the target RNA or protein levels in a cell or organism. For example, a dsRNA that is sufficiently complementary to a target RNA or cDNA sequence to trigger the destruction of the target RNA by the RNAi machinery or process can be identified as a dsRNA capable of reducing target mRNA levels by at least 20% at least 48 hours post-administration of said dsRNA to a cell or organism. Preferably, a dsRNA that is sufficiently complementary to a target RNA or cDNA sequence to trigger the destruction of the target RNA by the RNAi machinery or process is identified as a dsRNA capable of reducing target mRNA levels by at least 40% at least 72 hours post-administration of said dsRNA to a cell or organism, by at least 40% at least four, five or seven days post-administration of said dsRNA to a cell or organism, by at least 50% at least 48 hours post-administration of said dsRNA to a cell or organism, by at least 50% at least 72 hours post-administration of said dsRNA to a cell or organism, by at least 50% at least four, five or seven days post-administration of said dsRNA to a cell or organism, by at least 80% at least 48 hours post-administration of said dsRNA to a cell or organism, by at least 80% at least 72 hours post-administration of said dsRNA to a cell or organism, or by at least 80% at least four, five or seven days post-administration of said dsRNA to a cell or organism.

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'-0-alkyl (e.g., 2'-0-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-MYC DsiRNA agents of the instant invention, can be found below.

Where a first sequence is referred to as "substantially complementary" with respect to a second sequence herein, the two sequences can be fully complementary, or they may form one or more, but generally not more than 4, 3 or 2 mismatched base pairs upon hybridization, while retaining the ability to hybridize under the conditions most relevant to their ultimate application. However, where two oligonucleotides are designed to form, upon hybridization, one or more single stranded overhangs, such overhangs shall not be regarded as mismatches with regard to the determination of complementarity. For example, a dsRNA comprising one oligonucleotide 21 nucleotides in length and another oligonucleotide 23 nucleotides in length, wherein the longer oligonucleotide comprises a sequence of 21 nucleotides that is fully complementary to the shorter oligonucleotide, may yet be referred to as "fully complementary" for the purposes of the invention.

The term "double-stranded RNA" or "dsRNA", as used herein, refers to a complex of ribonucleic acid molecules, having a duplex structure comprising two anti-parallel and substantially complementary, as defined above, nucleic acid strands. The two strands forming the duplex structure may be different portions of one larger RNA molecule, or they may be separate RNA molecules. Where separate RNA molecules, such dsRNA are often referred to as siRNA ("short interfering RNA") or DsiRNA ("Dicer substrate siRNAs"). Where the two strands are part of one larger molecule, and therefore are connected by an uninterrupted chain of nucleotides between the 3'-end of one strand and the 5' end of the respective other strand forming the duplex structure, the connecting RNA chain is referred to
as a "hairpin loop", "short hairpin RNA" or "shRNA". Where the two strands are connected covalently by means other than an uninterrupted chain of nucleotides between the 3'-end of one strand and the 5' end of the respective other strand forming the duplex structure, the connecting structure is referred to as a "linker". The RNA strands may have the same or a different number of nucleotides. The maximum number of base pairs is the number of nucleotides in the shortest strand of the dsRNA minus any overhangs that are present in the duplex. In addition to the duplex structure, a dsRNA may comprise one or more nucleotide overhangs. In addition, as used herein, "dsRNA" may include chemical modifications to ribonucleotides, internucleoside linkages, end-groups, caps, and conjugated moieties, including substantial modifications at multiple nucleotides and including all types of modifications disclosed herein or known in the art. Any such modifications, as used in an siRNA- or DsiRNA-type molecule, are encompassed by "dsRNA" for the purposes of this specification and claims.

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 known 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.

<table>
<thead>
<tr>
<th>final conc.</th>
<th>Vender</th>
<th>Cat#</th>
<th>Lot#</th>
<th>m.w./Stock</th>
<th>To make 50 mL solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NaCl</td>
<td>Sigma</td>
<td>S-5150</td>
<td>41K8934</td>
<td>5M</td>
<td>1 mL</td>
</tr>
<tr>
<td>KCl</td>
<td>Sigma</td>
<td>P-9541</td>
<td>70K0002</td>
<td>74.55</td>
<td>0.298 g</td>
</tr>
<tr>
<td>MgCl₂</td>
<td>Sigma</td>
<td>M-1028</td>
<td>120K8933</td>
<td>1M</td>
<td>0.4 mL</td>
</tr>
<tr>
<td>sucrose</td>
<td>Fisher</td>
<td>BP220-212</td>
<td>907105</td>
<td>342.3</td>
<td>1 g</td>
</tr>
<tr>
<td>Tris-HCl</td>
<td>Fisher</td>
<td>BP1757-500</td>
<td>12419</td>
<td>1M</td>
<td>0.8 mL</td>
</tr>
<tr>
<td>NaH₂PO₄</td>
<td>Sigma</td>
<td>S-3193</td>
<td>52H-029515</td>
<td>120.0</td>
<td>0.006 g</td>
</tr>
<tr>
<td>EDTA</td>
<td>Sigma</td>
<td>E-7889</td>
<td>110K89271</td>
<td>0.5M</td>
<td>2 μL</td>
</tr>
<tr>
<td>H₂O</td>
<td>Sigma</td>
<td>W-4502</td>
<td>51K2359</td>
<td>to 50 mL</td>
<td></td>
</tr>
<tr>
<td>pH = 7.0 at 20°C</td>
<td>adjust with</td>
<td>HCl</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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'-0-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 certain dsRNAs of the invention (e.g., "DsiRNAs"), 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, hereby incorporated by reference.

Dicer "cleavage" can be 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 et al. (2006) Science 311: 195-8). As shown in Figure 1, 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 Figure 1 may be similarly identified via art-recognized methods, including those described in Macrae et al. While the Dicer cleavage events depicted in Figure 1 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. "Blunt" or "blunt end" means that there are no unpaired nucleotides at that end of the dsRNA, i.e., no nucleotide overhang. For clarity, chemical caps or non-nucleotide chemical moieties conjugated to the 3' end or 5' end of an siRNA are not considered in determining whether an siRNA has an overhang or is blunt ended. In certain embodiments, the invention provides a dsRNA molecule for inhibiting the expression of the MYC target gene in a cell or mammal, wherein the dsRNA comprises an antisense strand comprising a region of complementarity which is complementary to at least a part of an mRNA formed in the expression of the MYC target gene, and wherein the region of complementarity is less than 35 nucleotides in length, optionally 19-24 nucleotides in length or 25-30 nucleotides in length, and wherein the dsRNA, upon contact with a cell expressing the MYC target gene, inhibits the expression of the MYC target gene by at least 10%, 25%, or 40%.

A dsRNA of the invention comprises two RNA strands that are sufficiently complementary to hybridize to form a duplex structure. One strand of the dsRNA (the antisense strand) comprises a region of complementarity that is substantially complementary, and generally fully complementary, to a target sequence, derived from the sequence of an mRNA formed during the expression of the MYC target gene, the other strand (the sense strand) comprises a region which is complementary to the antisense strand, such that the two strands hybridize and form a duplex structure when combined under suitable conditions. Generally, the duplex structure is between 15 and 35, optionally between 25 and 30, between 26 and 30, between 18 and 25, between 19 and 24, or between 19 and 21 base pairs in length. Similarly, the region of complementarity to the target sequence is between 15 and 35, optionally between 18 and 30, between 25 and 30, between 19 and 24, or between 19 and 21 nucleotides in length. The dsRNA of the invention may further comprise one or more single-stranded nucleotide overhang(s). It has been identified that dsRNAs comprising duplex structures of between 15 and 35 base pairs in length can be effective in inducing RNA interference, including DsiRNAs (generally of at least 25 base pairs in length) and siRNAs (in certain embodiments, duplex structures of siRNAs are between 20 and 23, and optionally,
specifically 21 base pairs (Elbashir et al., EMBO 20: 6877-6888). It has also been identified that dsRNAs possessing duplexes shorter than 20 base pairs can be effective as well (e.g., 15, 16, 17, 18 or 19 base pair duplexes). In certain embodiments, the dsRNAs of the invention can comprise at least one strand of a length of 19 nucleotides or more. In certain embodiments, it can be reasonably expected that shorter dsRNAs comprising a sequence complementary to one of the sequences of Table 5, minus only a few nucleotides on one or both ends may be similarly effective as compared to the dsRNAs described above and in Tables 2-4 and 6-7. Hence, dsRNAs comprising a partial sequence of at least 15, 16, 17, 18, 19, 20, or more contiguous nucleotides sufficiently complementary to one of the sequences of Table 5, and differing in their ability to inhibit the expression of the MYC target gene in an assay as described herein by not more than 5, 10, 15, 20, 25, or 30% inhibition from a dsRNA comprising the full sequence, are contemplated by the invention. In one embodiment, at least one end of the dsRNA has a single-stranded nucleotide overhang of 1 to 5, optionally 1 to 4, in certain embodiments, 1 or 2 nucleotides. Certain dsRNA structures having at least one nucleotide overhang possess superior inhibitory properties as compared to counterparts possessing base-paired blunt ends at both ends of the dsRNA molecule.

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 TI, 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 dsRNA agents of the instant invention contemplates the possibility of using such dsRNA agents not only against target RNAs of MYC possessing perfect complementarity with the presently described dsRNA agents, but also against target MYC 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 dsRNA agents. Similarly, it is contemplated that the presently described dsRNA agents of the instant invention might be readily altered by the skilled artisan to enhance the extent of complementarity between said dsRNA agents and a target MYC RNA, e.g., of a specific allelic variant of MYC (e.g., an allele of enhanced therapeutic interest). Indeed, dsRNA agent sequences with insertions, deletions, and single point mutations relative to the target MYC sequence can also be effective for inhibition. Alternatively, dsRNA 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 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 x 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

In another embodiment, a gapped alignment the alignment is optimized is formed 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, a global alignment the alignment is optimizedis formed 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 dsRNA antisense strand and the portion of the MYC RNA sequence is preferred. Alternatively, the dsRNA may be defined functionally as a nucleotide sequence (or oligonucleotide sequence) that is capable of hybridizing with a portion of the MYC 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

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 dsRNA molecule having complementarity to an antisense region of the dsRNA molecule. In addition, the sense region of a dsRNA molecule can comprise a nucleic acid sequence having homology with a target nucleic acid sequence.

By "antisense region" is meant a nucleotid e sequence of a dsRNA molecule having complementarity to a target nucleic acid sequence. In addition, the antisense region of a dsRNA molecule comprises a nucleic acid sequence having complementarity to a sense region of the dsRNA 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 MYC, in certain embodiments, the target nucleic acid is MYC RNA, e.g., in certain embodiments, MYC mRNA. MYC RNA target sites can also interchangeably be referenced by corresponding cDNA sequences. Levels of MYC may also be targeted via targeting of upstream effectors of MYC, or the effects of modulated or misregulated MYC may also be modulated by targeting of molecules downstream of MYC in the MYC 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 dsRNA 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, dsRNA molecules of the invention that down regulate or reduce MYC gene expression are used for treating, preventing or reducing MYC-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 (MYC) 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 Figure 1, 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 interference of target nucleic acids, and contains proteins and protein complexes required for RNAi, e.g., Dicer and RISC.

In certain embodiments, dsRNAs of the invention are Dicer substrate siRNAs ("DsiRNAs"). DsiRNAs can possess certain advantages as compared to inhibitory nucleic acids that are not dicer substrates ("non-DsiRNAs"). Such advantages include, but are not limited to, enhanced duration of effect of a DsiRNA relative to a non-DsiRNA, as well as enhanced inhibitory activity of a DsiRNA as compared to a non-DsiRNA (e.g., a 19-23mer siRNA) when each inhibitory nucleic acid is suitably formulated and assessed for inhibitory
activity in a mammalian cell at the same concentration (in this latter scenario, the DsiRNA
would be identified as more potent than the non-DsiRNA). Detection of the enhanced
potency of a DsiRNA relative to a non-DsiRNA is often most readily achieved at a
formulated concentration (e.g., transfection concentration of the dsRNA) that results in the
DsiRNA eliciting approximately 30-70% knockdown activity upon a target RNA (e.g., a
mRNA). For active DsiRNAs, such levels of knockdown activity are most often achieved at
in vitro mammalian cell DsiRNA transfection concentrations of 1 nM or less of as suitably
formulated, and in certain instances are observed at DsiRNA transfection concentrations of
200 pM or less, 100 pM or less, 50 pM or less, 20 pM or less, 10 pM or less, 5 pM or less, or
even 1 pM or less. Indeed, due to the variability among DsiRNAs of the precise
concentration at which 30-70% knockdown of a target RNA is observed, construction of an
IC\textsubscript{50} curve via assessment of the inhibitory activity of DsiRNAs and non-DsiRNAs across a
range of effective concentrations is a preferred method for detecting the enhanced potency of
a DsiRNA relative to a non-DsiRNA inhibitory agent.

In certain embodiments, a DsiRNA (in a state as initially formed, prior to dicer
cleavage) is more potent at reducing MYC target gene expression in a mammalian cell than a
19, 20, 21, 22 or 23 base pair sequence that is contained within it. In certain such
embodiments, a DsiRNA prior to dicer cleavage is more potent than a 19-21mer contained
within it. Optionally, a DsiRNA prior to dicer cleavage is more potent than a 19 base pair
duplex contained within it that is synthesized with symmetric dTdT overhangs (thereby
forming a siRNA possessing 21 nucleotide strand lengths having dTdT overhangs). In
certain embodiments, the DsiRNA is more potent than a 19-23er siRNA (e.g., a 19 base
pair duplex with dTdT overhangs) that targets at least 19 nucleotides of the 21 nucleotide
target sequence that is recited for a DsiRNA of the invention (without wishing to be bound by
theory, the identity of a such a target site for a DsiRNA is identified via identification of the
Ago2 cleavage site for the DsiRNA; once the Ago2 cleavage site of a DsiRNA is determined
for a DsiRNA, identification of the Ago2 cleavage site for any other inhibitory dsRNA can be
performed and these Ago2 cleavage sites can be aligned, thereby determining the alignment
of projected target nucleotide sequences for multiple dsRNAs). In certain related
embodiments, the DsiRNA is more potent than a 19-23mer siRNA that targets at least 20
nucleotides of the 21 nucleotide target sequence that is recited for a DsiRNA of the invention.
Optionally, the DsiRNA is more potent than a 19-23mer siRNA that targets the same 21
nucleotide target sequence that is recited for a DsiRNA of the invention. In certain
embodiments, the DsiRNA is more potent than any 21mer siRNA that targets the same 21 nucleotide target sequence that is recited for a DsiRNA of the invention. Optionally, the DsiRNA is more potent than any 21 or 22mer siRNA that targets the same 21 nucleotide target sequence that is recited for a DsiRNA of the invention. In certain embodiments, the DsiRNA is more potent than any 21, 22 or 23mer siRNA that targets the same 21 nucleotide target sequence that is recited for a DsiRNA of the invention. As noted above, such potency assessments are most effectively performed upon dsRNAs that are suitably formulated (e.g., formulated with an appropriate transfection reagent) at a concentration of 1 nM or less. Optionally, an IC_{50} assessment is performed to evaluate activity across a range of effective inhibitory concentrations, thereby allowing for robust comparison of the relative potencies of dsRNAs so assayed.

The dsRNA molecules of the invention are added directly, or can be complexed with lipids (e.g., 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 Figure 1, 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 Figure 1, and the below exemplary structures can be used in all uses described for the DsiRNA agents of Figure 1, and the below exemplary structures.

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

By "RNA" is meant a molecule comprising at least one, and preferably at least 4, 8 and 12 ribonucleotide residues. The at least 4, 8 or 12 RNA residues may be contiguous. 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 dsRNA 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 dsRNA 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 dsRNA 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-MYC DsiRNA Agents**

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

In one such embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’

wherein "X"=RNA and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’

wherein "X"=RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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.

DsiRNAs of the invention can carry a broad range of modification patterns (e.g., 2'-0-methyl RNA patterns, e.g., within extended DsiRNA agents). Certain modification patterns of the second strand of DsiRNAs of the invention are presented below.

In one embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' -YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' -YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers and underlined residues are 2'-O-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:
wherein "X"=RNA and "X"=2'-0-methyl RNA. In a further related embodiment, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M7" or "M7" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers and underlined residues are 2'-0-methyl RNA monomers. In a related embodiment, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M6" or "M6" modification pattern.
In other embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M5" or "M5" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -YXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXX & - 3' \\
3' \cdot xxx XXXXXXXXXXXXXXXXXXXXXX & - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXDD & - 3' \\
3' \cdot xxx XXXXXXXXXXXXXXXXXXXXXX & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M4" or "M4" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXX & - 3' \\
3' \cdot xxx XXXXXXXXXXXXXXXXXXXXXX & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXDD & - 3' \\
3' \cdot xxx XXXXXXXXXXXXXXXXXXXXXX & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXX & - 3' \\
3' \cdot xxx XXXXXXXXXXXXXXXXXXXXXX & - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M8" or "M8" modification pattern.

In other embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxx XXXXXXXXXXXXXXXXXXXXXX xxxx - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, 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' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - xxx XXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxx XXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxx XXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M3" or "M3" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - xxx XXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers.
RNA monomers that are optionally 2'-0-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:

\[ \begin{align*}
5' & \cdots \text{xxxxxxxxx} \cdots \cdots \cdots \dd \cdots - 3' \\
3' & \cdots \text{xxxxxx} \cdots \cdots \cdots \cdots \cdots \cdots \cdots \cdots \dd \cdots - 5'
\end{align*} \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ \begin{align*}
5' & \cdots \text{xxxxxxx} \cdots \cdots \cdots \dd \cdots - 3' \\
3' & \cdots \text{xxx} \cdots \cdots \cdots \cdots \cdots \cdots \cdots \cdots \dd \cdots - 5'
\end{align*} \]

wherein "X"=RNA and "X"=2'-0-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:

\[ \begin{align*}
5' & \cdots \text{xxxxxxx} \cdots \cdots \cdots \dd \cdots - 3' \\
3' & \cdots \text{xxx} \cdots \cdots \cdots \cdots \cdots \cdots \cdots \cdots \dd \cdots - 5'
\end{align*} \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M2" or "M2" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ \begin{align*}
5' & \cdots \text{xxxxxxx} \cdots \cdots \cdots \dd \cdots - 3' \\
3' & \cdots \text{xxxx} \cdots \cdots \cdots \cdots \cdots \cdots \cdots \cdots \dd \cdots - 5'
\end{align*} \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ \begin{align*}
5' & \cdots \text{xxxxxxx} \cdots \cdots \cdots \dd \cdots - 3' \\
3' & \cdots \text{xxxx} \cdots \cdots \cdots \cdots \cdots \cdots \cdots \cdots \dd \cdots - 5'
\end{align*} \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ \text{5'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{3'} \]
\[ \text{3'} \cdot \underbrace{\text{XXX XXXXXXXXXXXXXXXXXXXXX}} \underbrace{\text{XXXX}} - \text{5'} \]

wherein "X"=RNA and "X"=2'-0-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:

\[ \text{5'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXDD}} - \text{3'} \]
\[ \text{3'} \cdot \underbrace{\text{XXX XXXXXXXXXXXXXXXXXXXXX}} \underbrace{\text{XXXX}} - \text{5'} \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M1" or "MI" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ \text{5'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{3'} \]
\[ \text{3'} \cdot \underbrace{\text{YXXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{5'} \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ \text{5'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXDD}} - \text{3'} \]
\[ \text{3'} \cdot \underbrace{\text{YXXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{5'} \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ \text{5'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{3'} \]
\[ \text{3'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{5'} \]

wherein "X"=RNA and "X"=2'-0-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:

\[ \text{5'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXDD}} - \text{3'} \]
\[ \text{3'} \cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXX}} - \text{5'} \]
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M9" or "M9" modification pattern.

In other embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXX xxxx - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXx xxxx - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXx xxxx - 5'

wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXx xxxx - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M10" or "M10" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXx xxxx - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA. "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD \]
\[ 3' -\text{underlined} \] XXXX - 5' \]

wherein "X"=RNA, "X"=2' -O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX \]
\[ 3' -\text{underlined} \] XXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD \]
\[ 3' -\text{underlined} \] XXXX - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-MH" or "Mil" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX \]
\[ 3' -\text{underlined} \] XXXX - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD \]
\[ 3' -\text{underlined} \] XXXX - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -__XXXXXXXXXXXXXXXXXXXXXXXXX xxxx - 5'

wherein "X"=RNA 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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX xxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M12" or "Ml 2" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX _ _ _ _ - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX _ _ _ _ - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX _ _ _ _ - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX _ _ _ _ - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense
strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M13" or "M13" modification pattern.

In other embodiments, the DsiRNA comprises:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXX\text{-}3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX\text{-}5' \]

wherein "X"=RNA, "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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXXDD\text{-}3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX\text{-}5' \]

wherein "X"=RNA, "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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXX\text{-}3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX\text{-}5' \]

wherein "X"=RNA 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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXXDD\text{-}3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX\text{-}5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M21" or "M21" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXX\text{-}3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX\text{-}5' \]

wherein "X"=RNA, "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:

\[
\begin{align*}
5' & -\underbrace{XXXXXXX...XXX}_{\text{D}} - 3' \\
3' & \underbrace{XXXXXXX...XXX}_{\text{D}} - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & -\underbrace{XXXXXXX...XXX}_{\text{D}} - 3' \\
3' & \underbrace{XXXXXXX...XXX}_{\text{D}} - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & -\underbrace{XXXXXXX...XXX}_{\text{D}} - 3' \\
3' & \underbrace{XXXXXXX...XXX}_{\text{D}} - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M14" or "M14" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & -\underbrace{XXXXXXX...XXX}_{\text{D}} - 3' \\
3' & \underbrace{XXXXXXX...XXX}_{\text{D}} - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & -\underbrace{XXXXXXX...XXX}_{\text{D}} - 3' \\
3' & \underbrace{XXXXXXX...XXX}_{\text{D}} - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXX  ____ - 5’

wherein "X"=RNA and "X"=2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXXX  ____ - 5’

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M15" or "M15" modification pattern.

In further embodiments, the DsiRNA comprises:

5’ -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXX  _____ - 5’

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXX  _____ - 5’

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXX  _____ - 5’

wherein "X"=RNA and "X"=2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXX  _____ - 5’

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also
referred to herein as the "AS-M16" or "M16" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -YXXXXXXXXXXXXXXXXXXXXXXXXX xxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXDDD - 3'
3' -YXXXXXXXXXXXXXXXXXXXXXXXXX xxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -X XXXXXXXXXXXXXXXXXXXXXXXXXXXX xxx - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXDDD - 3'
3' -X XXXXXXXXXXXXXXXXXXXXXXXXXXXX xxx - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M17" or "M17" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -YXXXXXXXXXXXXXXXXXXXXXXXXX __ - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:
wherein "X"=RNA, "Χ"=2' -O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \text{-----------------------------} - 3' \\
3' \text{-----------------------------} - 5'
\]

wherein "X"=RNA and "Χ"=2'-0-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:

\[
5' \text{-----------------------------} - 3' \\
3' \text{-----------------------------} - 5'
\]

wherein "X"=RNA, "Χ"=2' -O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M18" or "MI8" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' \text{-----------------------------} - 3' \\
3' \text{-----------------------------} - 5'
\]

wherein "X"=RNA, "Χ"=2' -O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \text{-----------------------------} - 3' \\
3' \text{-----------------------------} - 5'
\]

wherein "X"=RNA, "Χ"=2' -O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \text{-----------------------------} - 3' \\
3' \text{-----------------------------} - 5'
\]
wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXX XXXXXXXXXXXXXXXXXXXXX - 5'
```

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M19" or "M19" modification pattern.

In further embodiments, the DsiRNA comprises:

```
5' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXX XXXXXXXXXXXXXXXXXXXXXX - 5'
```

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXX XXXXXXXXXXXXXXXXXXXXX - 5'
```

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXX XXXXXXXXXXXXXXXXXXXXX - 5'
```

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXX XXXXXXXXXXXXXXXXXXXXX - 5'
```

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M20" or "M20" modification pattern.
In additional embodiments, the DsiRNA comprises:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXX - 3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX \underline{xxxx} - 5' \]

wherein "X"=RNA, "\underline{X}"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX \underline{xxxx} - 5' \]

wherein "X"=RNA, "\underline{X}"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX \underline{xxxx} - 5' \]

wherein "X"=RNA, "\underline{X}"=2'-0-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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX \underline{xxxx} - 5' \]

wherein "X"=RNA, "\underline{X}"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M22" or "M22" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXX - 3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX \underline{xxxx} - 5' \]

wherein "X"=RNA, "\underline{X}"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3'\text{-}YXXXXXXXXXXXXXXXXXXXXX \underline{xxxx} - 5' \]
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxx xxxxxxxxxxxxxxxxxxxxxxxxxx __ - 5'

wherein "X"=RNA and "Χ"=2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3'
3' - xxx xxxxxxxxxxxxxxxxxxxxxxxxxx __ - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M24" or "M24" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxx __ - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3'
3' - xxx xxxxxxxxxxxxxxxxxxxxxxxxxx __ - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxx xxxxxxxxxxxxxxxxxxxxxxxxxx __ - 5'

wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M25" or "M25" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M26" or "M26" modification pattern.

In additional embodiments, the DsiRNA comprises:
5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' 
3' -XXXXXXXXXXXXXXXXXXXXXXXXx xxxx - 5' 
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' 
3' -XXXXXXXXXXXXXXXXXXXXXXXXx xxxx - 5' 
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3' 
3' -xxxx XXXXXXXXXXXXXXXXXXXxxxx - 5' 
wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' 
3' -xxx XXXXXXXXXXXXXXXXXXXxxxx - 5' 
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M27" or "M27" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3' 
3' -XXXXXXXXXXXXXXXXXXXXXXXXx - 5' 
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' 
3' -x XXXXXXXXXXXXXXXXXXXxxxx - 5' 
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-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' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M28" or "M28" modification pattern.

In further embodiments, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' & -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M29" or "M29" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' & -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' & -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M30" or "M30" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' & -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' & -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M31" or "M31" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' & -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3' \]
\[ 3' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \underline{\text{xxx}} - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M32" or "M32" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \underline{\text{xxx}} - 3' \]
\[ 3' - \text{YYYY XXX XXX XXX XXX XXX} \underline{\text{xxx}} - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3' \]
\[ 3' - \text{YYYY XXX XXX XXX XXX XXX} \underline{\text{xxx}} - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \underline{\text{xxx}} - 3' \]
\[ 3' - \text{XXX XXX XXX XXX XXX XXX} \underline{\text{xxx}} - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3' \]
\[ 3' - \text{XXX XXX XXX XXX XXX XXX} \underline{\text{xxx}} - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M34" or "M34" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXX} - 3' \]
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} DD \quad - 3'
\]

\[
3' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} XXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} \underline{DD} \quad - 3'
\]

\[
3' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} XXXX - 5'
\]

wherein "X"=RNA and "Χ"=2'-0-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:

\[
5' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} \underline{DD} \quad - 3'
\]

\[
3' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} XXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M35" or "M35" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
5' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} \underline{DD} \quad - 3'
\]

\[
3' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} XXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} \underline{DD} \quad - 3'
\]

\[
3' - \underline{XXXXXXXXXXXXXXXXXXXXXXXXX} XXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3' 
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx ___ - 5'

wherein "X"=RNA and "X"=2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3' 
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx ___ - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M37" or "M37" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3' 
3' - yxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3' 
3' - yxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3' 
3' - xxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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:

\[
5' - XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M38" or "M38" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
5' - XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA and "Χ"=2'-0-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:

\[
5' - XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M40" or "M40" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' - XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3'\]
\[3' - \text{XXXXXXXXXXXXXXXXXXXXXXXX} - 5'\]

wherein "X"=RNA, "Χ"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3'\]
\[3' - \text{XXXXXXXXXXXXXXXXXXXXXXXX} - 5'\]

wherein "X"=RNA and "Χ"=2'-0-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:

\[5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3'\]
\[3' - \text{XXXXXXXXXXXXXXXXXXXXXXXXX} - 5'\]

wherein "X"=RNA, "Χ"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M41" or "M41" modification pattern.

In further embodiments, the DsiRNA comprises:

\[5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXX} - 3'\]
\[3' - \text{XXXXXXXXXXXXXXXXXXXXXXXX} - 5'\]

wherein "X"=RNA, "Χ"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXX} \text{DD} - 3'\]
\[3' - \text{XXXXXXXXXXXXXXXXXXXXXXXX} - 5'\]

wherein "X"=RNA, "Χ"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxddd - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M36" or "M36" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxddd - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXDD} & - 3' \\
3' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXX} & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M42" or "M42" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXXX} & - 3' \\
3' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXXXX} & \text{ - XXXX} & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXDD} & - 3' \\
3' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXX} & \text{ - XXXX} & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXXX} & - 3' \\
3' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXXX} & \text{ - XXXX} & - 5'
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXDD} & - 3' \\
3' & \text{ - XXXXXXXXXXXXXXXXXXXXXXXX} & \text{ - XXXX} & - 5'
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M43" or "M43" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXXX} & - 3' \\
3' & \text{ -XXXXXXXXXXXXXXXXXXXXXXXXXXX} & \text{ - XXXX} & - 5'
\end{align*}
\]
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxx DDD - 3'
3' -xxxxxxxxxxxxxxxxxxxxxxx xxxx - 5'
```

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxx xxxxxxxxxx xxxx - 5'
```

wherein "X"=RNA and "Χ"=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' -xxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3'
3' - xxx xxxxxxxxxx xxxx - 5'
```

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M44" or "M44" modification pattern.

In further embodiments, the DsiRNA comprises:

```
5' -xxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' -xxxx xxxxxxxxxx xxxx - 5'
```

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3'
3' -xxxx xxxxxxxxxx xxxx - 5'
```

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-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:

\[ 5' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 3' \]
\[ 3' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 3' \]
\[ 3' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 5' \]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M45" or "M45" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 3' \]
\[ 3' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 5' \]

wherein "X"=RNA, "Y"=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:

\[ 5' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 3' \]
\[ 3' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 5' \]

wherein "X"=RNA, "Y"=2'-O-methyl RNA, 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 related embodiment, the DsiRNA comprises:

\[ 5' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 3' \]
\[ 3' \ldots XXXXXXXXXXXXXXXXXXXXX \ldots - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & : \text{-XXXXXXXXXXXXXXXXXXXXXXX}\text{DD} ~ \text{- 3'} \\
3' & : \text{XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 5'}
\end{align*}
\]

wherein "X"=RNA, "Χ"=2'O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M46" or "M46" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & : \text{-XXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 3'} \\
3' & : \text{XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 5'}
\end{align*}
\]

wherein "X"=RNA, "Χ"=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:

\[
\begin{align*}
5' & : \text{-XXXXXXXXXXXXXXXXXXXXXXX}\text{DD} ~ \text{- 3'} \\
3' & : \text{XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 5'}
\end{align*}
\]

wherein "X"=RNA, "Χ"=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:

\[
\begin{align*}
5' & : \text{-XXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 3'} \\
3' & : \text{XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 5'}
\end{align*}
\]

wherein "X"=RNA and "Χ"=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:

\[
\begin{align*}
5' & : \text{-XXXXXXXXXXXXXXXXXXXXXXX}\text{DD} ~ \text{- 3'} \\
3' & : \text{XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 5'}
\end{align*}
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M47" or "M47" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & : \text{-XXXXXXXXXXXXXXXXXXXXXXX} ~ \text{- 3'}
\end{align*}
\]
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

3' -XXXXXXXXXXXXXXXXXXXXXXX  xxxx - 5'

In another related embodiment, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXX  xxxx - 5'

wherein "X"=RNA, "Χ"=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' -XXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXxxxx  xxxx - 5'

wherein "X"=RNA, "Χ"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M48" or "M48" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXxxxxx - 3'
3' - XXXXXXXXXXXXXXXXXXXxxxxx  xxxx - 5'

wherein "X"=RNA, "Χ"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXxxxxx  xxxx - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4
RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxx xxx xxx xxx _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _._ _ _
bottom strand is the antisense strand. In a further related embodiment, the DsiRNA comprises:

\[
5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXX\text{DD} - 3'
\]

\[
3'\text{-}xxx Xxxxxxxxxxxxxxxxxxxxxx xxxx - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M54" or "M54" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
\]

\[
3'\text{-}yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXX\text{DD} - 3'
\]

\[
3'\text{-}yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
\]

\[
3'\text{-}xxx Xxxxxxxxxxxxxxxxxxxxxx xxxx - 5'
\]

wherein "X"=RNA and "Χ"=2'-0-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:

\[
5'\text{-}XXXXXXXXXXXXXXXXXXXXXXXXX\text{DD} - 3'
\]

\[
3'\text{-}xxx Xxxxxxxxxxxxxxxxxxxxxx xxxx xxxx - 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M55" or "M55" modification pattern.
In further embodiments, the DsiRNA comprises:

\[
5' \cdots \text{XXXXXXXXXXXXXXXXXXXXXXXXXXX} \cdots 3' \\
3' \cdots \underline{\text{XXXXXXXXXXXXXXXXXXXXXXXXX}} \underline{\text{XXX}} \cdots 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \cdots \text{XXXXXXXXXXXXXXXXXXXXXXXXXDD} \cdots 3' \\
3' \cdots \underline{\text{XXXXXXXXXXXXXXXXXXXXXXXXXX}} \underline{\text{XXX}} \cdots 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \cdots \text{XXXXXXXXXXXXXXXXXXXXXXXXX} \cdots 3' \\
3' \cdots \underline{\text{XXXXXXXXXXXXXXXXXXXXXXXXX}} \underline{\text{XXX}} \cdots 5'
\]

wherein "X"=RNA and "Χ"=2'-0-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:

\[
5' \cdots \text{XXXXXXXXXXXXXXXXXXXXXXXXXDD} \cdots 3' \\
3' \cdots \underline{\text{XXXXXXXXXXXXXXXXXXXXXXXXXX}} \underline{\text{XXX}} \cdots 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M56" or "M56" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' \cdots \text{XXXXXXXXXXXXXXXXXXXXXXXXXXX} \cdots 3' \\
3' \cdots \underline{\text{XXXXXXXXXXXXXXXXXXXXXXXXX}} \underline{\text{XXX}} \cdots 5'
\]

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \cdots \text{XXXXXXXXXXXXXXXXXXXXXXXXXDD} \cdots 3' \\
3' \cdots \underline{\text{XXXXXXXXXXXXXXXXXXXXXXXXXX}} \underline{\text{XXX}} \cdots 5'
\]
3' -XXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXX XXX XXX XXX XXXX XXXX - 5'
wherein "X"=RNA and "Χ"=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' -XXXXXXXXXXXXXXXXXXXXXXXXXDDD - 3'
3' - XXX XXX XXX XXX XXXX XXXX - 5'
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M57" or "M57" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXX XXX XXX XXX XXXX XXXX - 5'
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDDD - 3'
3' - XXX XXX XXX XXX XXXX XXXX - 5'
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
wherein "X"=RNA and "X"=2'-0-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:

\[
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXD - 3' \\
3' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M58" or "M58" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXXD - 3' \\
3' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXXD - 3' \\
3' \cdot XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also
referred to herein as the "AS-M59" or "M59" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5'\ldots XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX X
antisense strand. In one related embodiment, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'- YXXX XXXXXX XXXX XXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXX 3'
3'- XXXX XXXXXX XXXX XXXX - 5'

wherein "X"=RNA and "Χ"=2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXX 3'
3'- XXXX XXXXXX XXXX XXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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. This modification pattern is also referred to herein as the "AS-M61" or "M61" modification pattern.

In further embodiments, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXX 3'
3'- YXXX XXXXXX XXXX XXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'- YXXX XXXXXX XXXX XXXX - 5'

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - xxxxxxx xxxx xxxxxxxxx xxxx xxxx xxx - 5'

wherein "X”=RNA and "X”=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxxxxxx xxxxxxxxx xxxxx xxxx xxx - 5'

wherein "X”=RNA, "X”=2' -O-methyl RNA, and "D”=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M62” or "M62” modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - xxxxxxxx xxxxxxxx xx xx xx xx xx xx - 5'

wherein "X”=RNA, "X”=2' -O-methyl RNA, "Y” is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxxxxxx xxxxxxxxx xxxxx xxxx xxx - 5'

wherein "X”=RNA, "X”=2' -O-methyl RNA, "Y” is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - xxxxxxx xxxxxxxxx xxxxx xxxx xxx - 5'

wherein "X”=RNA and "X”=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxxxxxx xxxxxxxxx xxxxx xxxx xxx - 5'

wherein "X”=RNA, "X”=2' -O-methyl RNA, and "D”=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.
strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M63" or "M63" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
5'\cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}}_{\text{RNA}} - 3' \\
3'\cdot \underbrace{\text{xxxxxxxxxxxxxxxxxxxxxxxxxxxx}}_{\text{RNA}} \underbrace{\text{xxxx}}_{\text{DNA}} - 5' 
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5'\cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}}_{\text{RNA}} - 3' \\
3'\cdot \underbrace{\text{xxxxxxxxxxxxxxxxxxxxxxxxxxxx}}_{\text{RNA}} \underbrace{\text{xxxx}}_{\text{DNA}} - 5' 
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5'\cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}}_{\text{RNA}} - 3' \\
3'\cdot \underbrace{\text{xxx \underbrace{\text{xxxxxxxxxxxxxxxxxxxxxx}}_{\text{RNA}}}}_{\text{RNA}} \underbrace{\text{xxxx}}_{\text{DNA}} - 5' 
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5'\cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}}_{\text{RNA}} - 3' \\
3'\cdot \underbrace{\text{xxx xxxxxxxxxxxxxxxxxxxxxxxxx}}_{\text{RNA}} \underbrace{\text{xxxx}}_{\text{DNA}} - 5' 
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M64" or "M64" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5'\cdot \underbrace{\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX}}_{\text{RNA}} - 3' \\
3'\cdot \underbrace{\text{yyyyxxxxxxxxxxxxxxxxxxxx}}_{\text{RNA}} \underbrace{\text{xxxx}}_{\text{DNA}} - 5' 
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - Yxxxx xxxxxxxxxx xxxxxx - 5'

wherein "X"=RNA, "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' -xxxxx xxxxxxxxxxxxxxxxx xxxxx - 5'
3' -  Y crater  xxxxxxxxxx xxxxxx -  5'

wherein "X"=RNA 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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - Xxxxx xxxxxxxx x xxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M65" or "M65" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - Yxxxx xxxxxxxx x xxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - Yxxxx xxxxxxxx x xxxxx - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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

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comprises:
5′-XXXXXXXXXXXXXXXXXXXXXXXXXX - 3′
3′-xxxxxxx XXXXXXXXXXXXXXXXX - 5′
wherein "X"=RNA and "X"=2'-0-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′-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3′
3′-xxxxxxx XXXXXXXXXXXXXXXXX Xxxx - 5′
wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M66" or "M66" modification pattern.

In additional embodiments, the DsiRNA comprises:
5′-XXXXXXXXXXXXXXXXXXXXXXXXXX - 3′
3′-xxxxxxx XXXXXXXXXXXXXXXXX - 5′
wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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′-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3′
3′-xxxxxxx XXXXXXXXXXXXXXXXX Xxxx - 5′
wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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′-XXXXXXXXXXXXXXXXXXXXXXXXXX - 3′
3′-xxx XXXXXXXXXXXXXXXXXXXXX - 5′
wherein "X"=RNA and "X"=2'-0-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′-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3′
3′-xxxxx XXXXXXXXXXXXXXXXX - 5′
wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M67" or "M67" modification pattern.

In further embodiments, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - yyyyyyyyyyyyyyyyyyyyyyyyyy - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, 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' - xxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3'
3' - yyyyyyyyyyyyyyyyyyyyyyyyyy - 5'

wherein "X"=RNA, "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 related embodiment, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - yyyyyyyyyyyyyyyyyyyyyyyyyy - 5'

wherein "X"=RNA 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' - xxxxxxxxxxxxxxxxxxxxxxxxxxDD - 3'
3' - yyyyyyyyyyyyyyyyyyyyyyyyyy - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M68" or "M68" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - yyyyyyyyyyyyyyyyyyyyyyyyyy - 5'

wherein "X"=RNA, "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.
RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & : \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXDD} \\
3' & : \text{xxxx xxxx xxxx} \\
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & : \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX} \\
3' & : \text{xxx xxxxxxxx xxxxx xxx} \\
\end{align*}
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
\begin{align*}
5' & : \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD} \\
3' & : \text{xxxx xxxx xxxx} \\
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M69" or "M69" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
\begin{align*}
5' & : \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXX} \\
3' & : \text{yyyy xxxxxxxx xxxxxxx xxx} \\
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
\begin{align*}
5' & : \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD} \\
3' & : \text{yyyy xxxxxxxx xxxxxxx xxx} \\
\end{align*}
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX} - 3' \\
3' - \text{xxxx xx xxxxxxxx xxxxxxxx xxxx} - 5'
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3' \\
3' - \text{xxxx xx xxxxxxxx xxxxxxxx xxxx} - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M70" or "M70" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX} - 3' \\
3' - \underline{\text{xxxxxxxxxxxxxxxxxxxxxx}} \text{ xxxxx} - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3' \\
3' - \underline{\text{xxxxxxxxxxxxxxxxxxxxxx}} \text{ xxxxx} - 5'
\]

wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX} - 3' \\
3' - \underline{\text{xxx xxxxxxxxxxxxxxxxxxxxx}} \text{ xxxxx} - 5'
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5' - \text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3'
\]
3' - xxxxxxxxxxxxxxxxxxxxxxxxxx   xxxx - 5'
wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M71" or "M71" modification pattern.

In further embodiments, the DsiRNA comprises:
5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx   - 3'
3' - yxxxxxxxxxxxxxxxxxxxxxxxxxxx   xxxx - 5'
wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxDD   - 3'
3' - yxxxxxxxxxxxxxxxxxxxxxxxxxxx   xxxx - 5'
wherein "X"=RNA, "X"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx   - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxx   xxxx - 5'
wherein "X"=RNA and "X"=2'-0-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' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxDD   - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxx   xxxx - 5'
wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M72" or "M72" modification pattern.

In additional embodiments, the DsiRNA comprises:
5' -xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx   - 3'
3' - yxxxxxxxxxxxxxxxxxxxxxxxxxxx   - 5'
wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -YXXXXXXXXXXXXXXXXXXXXXXXXxxxx - 5'  
```

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' - xxx XXXXXXXXXXXXXXXXXXXXX xxxx - 5'  
```

wherein "X"=RNA and "Χ"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' - xxx XXXXXXXXXXXXXXXXXXXxx xxxx - 5'  
```

wherein "X"=RNA and "Χ"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M73" or "M73" modification pattern.

In additional embodiments, the DsiRNA comprises:

```
5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' - XXXXXXXXXXXXXXXXXXXXX xxx - 5'  
```

wherein "X"=RNA and "Χ"=2'-0-methyl RNA. In a further related embodiment, the DsiRNA comprises:

```
5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' - XXXXXXXXXXXXXXXXXXXXX xxx - 5'  
```

wherein "X"=RNA, "Χ"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M7*" or "M7*" modification pattern.

In further embodiments, the DsiRNA comprises:
wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M6*" or "M6*" modification pattern.

In other embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M5*" or "M5*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M4*" or "M4*" modification pattern.

In additional embodiments, the DsiRNA comprises:
wherein "X"=RNA and "X"=2'-0-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:

\[ \text{5'}^{\text{5}}\text{'-XXXXXXXXXXXXXXXXXXXXXXXXX}^{\text{3'}} \]
\[ \text{3'}^{\text{3}}\text{'-XXXXXXXXXXXXXXXXXXXXXXX Xxxx}^{\text{5'}} \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M8*" or "M8*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ \text{5'}^{\text{5}}\text{'-XXXXXXXXXXXXXXXXXXXXXXXXX}^{\text{3'}} \]
\[ \text{3'}^{\text{3}}\text{'-XXXXXXXXXXXXXXXXXXXXXXX Xxxx}^{\text{5'}} \]

In other embodiments, the DsiRNA comprises:

\[ \text{5'}^{\text{5}}\text{'-XXXXXXXXXXXXXXXXXXXXXXXXX}^{\text{3'}} \]
\[ \text{3'}^{\text{3}}\text{'-XXXXXXXXXXXXXXXXXXXXXXX Xxxx}^{\text{5'}} \]
wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M11*" or "Mil*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M13*" or "M13*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M14*" or "M14*" modification pattern.

In additional embodiments, the DsiRNA comprises:
wherein "X"=RNA 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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-O-methyl RNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M15*" or "M15*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M16*" or "M16*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA 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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-O-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M17*" or "M17*" modification pattern.

In further embodiments, the DsiRNA comprises:
wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX ___ - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M18*" or "M18*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX ___ - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX ___ - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M19*" or "M19*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX ___ - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXX ___ - 5'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX ___ - 5'

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M20*" or "M20*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]
\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M22*" or "M22*" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]
\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]
\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M24*" or "M24*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]
\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3\,' \]
\[ 3\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXX} - 5\,' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M25*" or "M25*" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXXX} - 3\,' \]
\[ 3\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXX} - 5\,' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3\,' \]
\[ 3\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXX} - 5\,' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M26*" or "M26*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \]
\[ 3\,'-\text{XXXXXXXXXXXXXXXXXXXXXXX} - 5\,' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3\,' \]
\[ 3\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M27*" or "M27*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5\,'-\text{XXXXXXXXXXXXXXXXXXXXXXXXXX} \]
\[ 3\,'-\text{XXXXXXXXXXXXXXXXXXXXXXX} - 5\,' \]

wherein "X"=RNA and "X"=2'-0-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:
comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M28*" or "M28*" modification pattern.

In further embodiments, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M29*" or "M29*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M34*" or "M34*" modification pattern.

In further embodiments, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M35*" or "M35*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M37*" or "M37*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M38*" or "M38*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M40*" or "M40*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M41*" or "M41*" modification pattern.

In further embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M36*" or "M36*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]

wherein "X"=RNA and "X"=2'-0-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:

\[ 5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3' \]

\[ 3' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 5' \]
comprises:

5’ -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M42*" or "M42*" modification pattern.

In further embodiments, the DsiRNA comprises:

5’ -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5’

wherein "X"=RNA and "X"=2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5’

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M43*" or "M43*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5’ -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5’

wherein "X"=RNA and "X"=2'-0-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’ -XXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5’

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M44*" or "M44*" modification pattern.

In further embodiments, the DsiRNA comprises:

5’ -XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3’
3’ -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5’
wherein "X"=RNA and "X"=2'-0-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:

\[
5'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3'
\]
\[
3'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 5'
\]
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M46*" or "M46*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 3'
\]
\[
3'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 5'
\]
wherein "X"=RNA and "X"=2'-0-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:

\[
5'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3'
\]
\[
3'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 5'
\]
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M47*" or "M47*" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
5'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 3'
\]
\[
3'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 5'
\]
wherein "X"=RNA and "X"=2'-0-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:

\[
5'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXXDD} - 3'
\]
\[
3'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 5'
\]
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M48*" or "M48*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5'\cdot\text{XXXXXXXXXXXXXXXXXXXXXXXXx}_x\text{x}_x - 3'
\]
wherein "X"=RNA and "X"=2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'-XXXXXXXXXXXXXXXXXXXXXX Xxxxx - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M52*" or "M52*" modification pattern.

In further embodiments, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'-XXXXXXXXXXXXXXXXXXXXXX Xxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'-XXXXXXXXXXXXXXXXXXXXXX Xxxxx - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M54*" or "M54*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5'-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'-XXXXXXXXXXXXXXXXXXXXXX Xxxxx - 5'

wherein "X"=RNA and "X"=2'-0-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'-XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3'-XXXXXXXXXXXXXXXXXXXXXX Xxxxx - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M55*" or "M55*" modification pattern.

In further embodiments, the DsiRNA comprises:
wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX- 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M56*" or "M56*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX- 5'

wherein "X"=RNA, "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX- 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M57*" or "M57*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX- 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXXXXXXXXXXXXXXXX XXXX- 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M58*" or "M58*" modification pattern.
In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' -XXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -XXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M59*" or "M59*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' -XXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -XXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M60*" or "M60*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'  
3' -XXXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXDD - 3'  
3' -XXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also
referred to herein as the "AS-M61*" or "M61*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M62*" or "M62*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M63*" or "M63*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXX XXXX - 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand.
strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M64*" or "M64*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M65*" or "M65*" modification pattern.

In further embodiments, the DsiRNA comprises:

\[
5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M66*" or "M66*" modification pattern.

In additional embodiments, the DsiRNA comprises:

\[
5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]

wherein "X"=RNA and "X"=2'-0-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:

\[
5' -XXXXXXXXXXXXXXXXXXXXXXXXXDD - 3' \\
3' - XXXXXXXXXXXXXXXXXXXXXXXXXXXXX - 5'
\]
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M67*" or "M67*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXX XXXXXXXXXXXXX- 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXX XXXXXXXXXXXXX- 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M68*" or "M68*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXX XXXXXXXXXXXXX- 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' -XXXXXXXXXXXXX XXXXXXXXXXXXX- 5'

wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M69*" or "M69*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' -XXXXXXXXXXXXXXXXXXXXXXXXXX - 3'
3' -XXXXXXXXXXXXX XXXXXXXXXXXXX- 5'

wherein "X"=RNA and "X"=2'-0-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' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD - 3'
3' - xxxxx xxxxxxxx xxxxxxx xxxxx - 5'
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M70*" or "M70*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxx - 5'
wherein "X"=RNA, "X"=2'-0-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' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxD - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxx - 5'
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M71*" or "M71*" modification pattern.

In further embodiments, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxx - 5'
wherein "X"=RNA and "X"=2'-0-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' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxD - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxx - 5'
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M72*" or "M72*" modification pattern.

In additional embodiments, the DsiRNA comprises:

5' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx - 3'
3' - xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxx - 5'
wherein "X"=RNA and "X"=2'-0-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:
wherein "X"=RNA, "X"=2'-0-methyl RNA, and "D"=DNA. The top strand is the sense strand, and the bottom strand is the antisense strand. This modification pattern is also referred to herein as the "AS-M73*" or "M73*" modification pattern.

In certain embodiments, the sense strand of a DsiRNA of the invention is modified -specific exemplary forms of sense strand modifications are shown below, and it is contemplated that such modified sense strands can be substituted for the sense strand of any of the DsiRNAs shown above to generate a DsiRNA comprising a below-depicted sense strand that anneals with an above-depicted antisense strand. Exemplary sense strand modification patterns include:

| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM1 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM2 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM3 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM4 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM5 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM6 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM7 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM8 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM9 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM10 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM11 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM12 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM13 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM14 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM15 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM16 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM17 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM18 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM19 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM20 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM21 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM22 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM23 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM24 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM25 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM26 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM27 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM28 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM29 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM30 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM31 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM32 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM33 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM34 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM35 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM36 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM37 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM38 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM39 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM40 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM41 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM42 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM43 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM44 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM45 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM46 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM47 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM48 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM49 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM50 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM51 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM52 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM53 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM54 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM55 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM56 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM57 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM58 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM59 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM60 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM61 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM62 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM63 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM64 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM65 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM66 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM67 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM68 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM69 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM70 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM71 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM72 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM73 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM74 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM75 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM76 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM77 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM78 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM79 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM80 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM81 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM82 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM83 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM84 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM85 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM86 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM87 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM88 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM89 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM90 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM91 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM92 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM93 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM94 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM95 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM96 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM97 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM98 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM99 " |
| 5' -XXXXXXXXXXXXXXXXXXXXXXXXXXDD  | 3' - " SM100 " |
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' -XXX XXXXXXXXXX XXXXXXXXXX - 3'
5' -XXX XXXXXXXXXX XXXXXXXXXX - 3'
5' -XXXXXXXXXXXXXXXXXXXXXXXXX - 3'
5' -XX XX XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XX X XXXXX XXXXXXXX - 3'
5' -XXX XXXXXXXXXX XXXXXXXXXX - 3'
5' -XXX XXXXXXXXXX XXXXXXXXXX - 3'

"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. Any of the residues of such agents can optionally be 2'-0-methyl RNA monomers - alternating positioning of 2'-0-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 \textit{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):

\[
5' - \text{x}\ldots\text{x} \quad N^*D_{\text{x}}D\ldotsD - 3'
\]
\[
3' - \text{x}\ldots\text{x} \quad N^*D_{\text{x}}D\ldotsD - 5'
\]

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[
5' - \text{x}\ldots\text{x} \quad N^*D_{\text{x}}D\ldotsD - 3'
\]
\[
3' - \text{x}\ldots\text{x} \quad N^*D_{\text{x}}D\ldotsD - 5'
\]

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-methyl RNA monomers.
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′-XXXXXXXXXXXXXXXXXXXXXX N*D3DD- 3′

3′-YXXXXXXXXXXXXXXXXXXXXXX N*D3ZZ- 5′

wherein "X"=RNA, "X"=2′-0-methyl RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2′-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2′-0-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′-0-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′-XXXXXXXXXXXXXXXXXXXXXX N*D3DD- 3′

3′-YXXXXXXXXXXXXXXXXXXXXXX N*D3ZZ- 5′

wherein "X"=RNA, "X"=2′-0-methyl RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2′-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2′-0-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′-0-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′-XXXXXXXXXXXXXXXXXXXXXX N*D3DD- 3′

3′-YXXXXXXXXXXXXXXXXXXXXXX N*D3ZZ- 5′
wherein "X"=RNA, "X"=2'-0-methyl RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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:

\[ 5' \text{XXXXXXXXXXXXXXXXXXXXXXXXXXX} \quad \text{N}^* \quad \text{[X1 / D1]} \quad \text{NDD-3} ' \]
\[ 3' \text{XXXXXXXXXXXXXXXXXXXXXXXXXXN}^* \quad \text{[X2 / D2]} \quad \text{NZZ-5'} \]

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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, a 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:

\[
5' - D_{n}\text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX} \quad N^*_M - 3' \]
\[
3' - D_{n}\text{XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX} \quad N^*_M - 5'
\]

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 1-15 or, optionally, 1-8. "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'-0-methyl RNA monomers - alternating positioning of 2'-0-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/frayed" 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:

\[
5' - \text{xxxxxxxxxxxxxxxxxxxxxxDDXX} \quad 3' - \text{DDXXX}
\]
\[
3' - \text{YxxxxxxxxxxxxxxxxxxxxDDXXX} \quad 5'
\]

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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 will help 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_sXXXXXX...NNY-Z3'  
3'-D_sXXXXXX...NNY-Z5'

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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_sXXXXXX...NNY-Z3'  
3'-D_sXXXXXX...NNY-Z5'

wherein "X"=RNA, optionally a 2'-0-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_sXXXXXX...NNY-Z3'  
3'-D_sXXXXXX...NNY-Z5'

wherein "X"=RNA, optionally a 2'-0-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'-0-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:
wherein "X"=RNA, optionally a 2'-0-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:

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 D1N is present in the top strand and is base paired with a corresponding D2N in the bottom strand. Optionally, D1N and D1N+1 are base paired with corresponding D2N and D2N+1; D1N, D1N+1 and D1N+2 are base paired with corresponding D2N, D1N+1 and D1N+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:

wherein "X"=RNA, "D"=DNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0 -methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0 -methyl RNA monomers, and "N"=1 to 50 or more, but is optionally 1-8 or 1-10, where at least one D1N is present in the top strand and is base paired with a corresponding D2N in the bottom strand. Optionally, D1N and D1N+1 are base paired with corresponding D2N and D2N+1; D1N, D1N+1 and D1N+2 are base paired with corresponding D2N, D1N+1 and D1N+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'-0 -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' - DXXXXXXXXXXXXXXXXXXXX
3' - DXXXXXXXXXXXXXXXXXXXX

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'-0-methyl RNA monomers - alternating positioning of 2'-0-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. Exemplary structures for such a molecule are shown:

5' -XXDDXXXXXXXXXXXXXXXXXX
3' -DDXXXXXXXXXXXXXXXXXX

or

5' -DDXDDXXXXXXXXXXXXXXXXXX
3' -DDXDDXXXXXXXXXXXXXXXXXX

wherein "X"=RNA, "Y" is an optional overhang domain comprised of 0-10 RNA monomers that are optionally 2'-0-methyl RNA monomers - in certain embodiments, "Y" is an overhang domain comprised of 1-4 RNA monomers that are optionally 2'-0-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.

In any of the above 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 will help reduce off-target effects (as prior studies have shown a 2'-0-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 deoxyribonucleotides at the 3' end of the antisense strand.

Exemplary MYC targeting DsiRNA agents of the invention, and their associated
MYC target sequences, include the following, presented in the below series of tables:

Table Number:
(2) Selected Human Anti-MYC DsiRNA Agents (Asymmetries);
(3) Selected Human Anti-MYC DsiRNAs, Unmodified Duplexes (Asymmetries);
(4) Selected Mouse Anti-MYC DsiRNAs (Asymmetries);
(5) DsiRNA Target Sequences (21mers) In MYC mRNA;
(6) Selected Human Anti-MYC "Blunt/Fray" DsiRNAs;
(7) Selected Human Anti-MYC "Blunt/Blunt" DsiRNAs; and
(8) DsiRNA Component 19 Nucleotide Target Sequences In MYC mRNA

Table 2: Selected Human Anti-MYC DsiRNA Agents (Asymmetries)

<table>
<thead>
<tr>
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<td>3'-GUGACCUUGAAUGUUGGGCGCUGUC-5' (SEQ ID NO: 335)</td>
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MYC-417 Target: 5'-CACTGGAACTTACAACCCGAGCAAG-3' (SEQ ID NO: 662)
5'-GCAGCUGCUUAGACGCUGGAUUUt-3' (SEQ ID NO: 9)
3'-AAC_GUCGACGGAUACCGGACCUAAAAA_5' (SEQ ID NO: 336)

MYC-535 Target: 5'-TTGCAGCTGCTTAGACGCTGGATTTTT-3' (SEQ ID NO: 663)
5'-GCUGAAGCGUGGAUUUUUUCGgg-3' (SEQ ID NO: 10)
3'-GAC_GAUUCUGCCGACCUAAAAAAGCCC-5' (SEQ ID NO: 337)

MYC-541 Target: 5'-CTGCTTAGACGCTGGATTTTT-3' (SEQ ID NO: 664)
5'-GCUUAGACGCUGGAUUUUUUUCGgg-3' (SEQ ID NO: 11)
3'-CUG_CGACCUAAAAAACGCCAUCACCu-5' (SEQ ID NO: 338)

MYC-548 Target: 5' -GACGCTGATTITTTTCCGGTAGTGG-3' (SEQ ID NO: 665)
5'-GAAUUUUUUCGCCUAGGGAAAacc-3' (SEQ ID NO: 12)
3'-ACC_UAAAAAAGCCGCAUCACCUUuuuGG-5' (SEQ ID NO: 339)

MYC-553 Target: 5' -TGGATTTTTTTCGGGTAGTGGAAAACC-3' (SEQ ID NO: 666)
5'-CGGGUAGUGGAAAACCAGCAGCCTC-3' (SEQ ID NO: 13)
3'-AAC_CCACCUUAAAAAGGCCAUCACCUu-5' (SEQ ID NO: 340)

MYC-562 Target: 5' -TTGGGTTAGTGGAAAAACCACGACGCTC-3' (SEQ ID NO: 667)
5'-CUCAAGCGUUCUUACCAACACGga-3' (SEQ ID NO: 14)
3'-GGG_AUGUUCCAUACGGuGUGGUUGCu-5' (SEQ ID NO: 341)

MYC-601 Target: 5' -CCCTCAACGTGGCTACCAACAGGA-3' (SEQ ID NO: 668)
5'-GUUAGCUUCACCAACAGGAuAtg-3' (SEQ ID NO: 15)
3'-UGCAAUUCGUGGGuGUGGUUCGUAuAC-5' (SEQ ID NO: 342)

MYC-607 Target: 5' -ACGCTGGCTACCAACAGGAuACTG-3' (SEQ ID NO: 669)
5'-GACUCGGUGCAACCGGuUUUCUAAct-3' (SEQ ID NO: 16)
3'-UGG_UAGGCCCAUCGCGGuGCAuAAAGua-5' (SEQ ID NO: 343)

MYC-643 Target: 5' -ACGACTCGGTGCAAGCGTATTTCTACT-3' (SEQ ID NO: 670)
5'-GCAGCGUAuUUUCUAUCGCGACGag-3' (SEQ ID NO: 17)
3'-CAC_GUCGGCAUAaAAAGAGUCGCGCGuGC-5' (SEQ ID NO: 344)

MYC-651 Target: 5' -GTGCCAGCGGTATTTCTACTCGAGCAAG-3' (SEQ ID NO: 671)
5'-GAGGGAGAAUUCUUACCAACACGCAgCe-3' (SEQ ID NO: 18)
3'-GCC_UCCCUUUGAAGAGUGCUGGCUGC-5' (SEQ ID NO: 345)

MYC-676 Target: 5' -AGGAGAGAATCTCTACCCAGCGCAG-3' (SEQ ID NO: 672)
5'-GCGAGGAUAUCUGGAAAGAAAUCga-3' (SEQ ID NO: 19)
3'-GUC_GCUCUACUAAGACCUCUUUUAAAGcu-5' (SEQ ID NO: 346)

MYC-731 Target: 5' -CAGCAGGATATCTGGAAGAAATTCGA-3' (SEQ ID NO: 673)
5'-CGUUGGGUCACCCCUUCCUCtt-3' (SEQ ID NO: 20)
3'-AUG CAACGCCAGUGUGGGAAGAGGGAA- 5' (SEQ ID NO: 347)
MYC-816 Target: 5'-TACGTGCGGTCAACACCTTCTCTCCTT-3' (SEQ ID NO: 674)
5'-ACAUGGUGAACCAGAUUUCUCAcgt-3' (SEQ ID NO: 21)
3'-UCU GUACCACUCGUUCAAGAGAC-5' (SEQ ID NO: 348)
MYC-920 Target: 5'-AGACATGGTGAACCAGAGTTTGTACCTC-3' (SEQ ID NO: 675)
5'-CCGGACGACGAGACCUUCAUAAG-3' (SEQ ID NO: 22)
3'-UGG GCCUGCUGCUCUGGAAGUAGUUU-5' (SEQ ID NO: 349)
MYC-949 Target: 5'-ACCCGGACGACGAGACCTTCATCAAAA-3' (SEQ ID NO: 676)
5'-ACGAGACCTTCATCAAAAACATCATCA-3' (SEQ ID NO: 24)
3'-UGC UCUGGAAGUAGUUUUUGUAGUAGU-5' (SEQ ID NO: 351)
MYC-958 Target: 5'-AAAAACAUCAUCAUCCAGGACUGta-3' (SEQ ID NO: 677)
5'-AACUCCAGCUUGUACCUGCAGGAtc-3' (SEQ ID NO: 25)
3'-GGUCUCGAUUGUGGAGGUCGAACAUGGACGUCCUAG-5' (SEQ ID NO: 352)
MYC-987 Target: 5'-TGCTGCTCCACCTCCAGCTTGTACCTG-3' (SEQ ID NO: 678)
5'-ACCUCCAGCUUGUACCUGCAGGAtc-3' (SEQ ID NO: 26)
3'-AGG UCGAACAUGGACGUCCUAGACUCG-5' (SEQ ID NO: 353)
MYC-1104 Target: 5'-GTCTGCTCCACCTCCAGCTTGTACCTG-3' (SEQ ID NO: 679)
5'-ACCUCACCUUACUUAAACACAUca-3' (SEQ ID NO: 27)
3'-GGGGGAGGCAGGAGGUCGACUACC-5' (SEQ ID NO: 354)
MYC-1111 Target: 5'-GACGACCTTCATCAAAAACATCATCA-3' (SEQ ID NO: 680)
5'-CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 28)
3'-AGG UCAGCGACUCUGAGGAGGAACAUGGAC-5' (SEQ ID NO: 355)
MYC-1116 Target: 5'-CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 681)
5'-CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 29)
3'-GGU UCAGCGACUCGGAGGUCGAGGUCGAG-5' (SEQ ID NO: 356)
MYC-1210 Target: 5'-CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 682)
5'-CGACTCTGAGGAGGAACAAGAAGATGA-3' (SEQ ID NO: 30)
3'-GGU UCAGCGACUCGGAGGUCGAGGUCGAG-5' (SEQ ID NO: 357)
MYC-1340 Target: 5'-CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 683)
5'-GCAGCGACUCUGAGGAGGAACAAGAga-3' (SEQ ID NO: 31)
3'-GGU UCAGCGACUCGGAGGUCGAGGUCGAG-5' (SEQ ID NO: 358)
MYC-1346 Target: 5'-CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 684)
5'-CCUCACAGCCACUGGUCCUCAaga-3' (SEQ ID NO: 44)
3'-GAG GAGGGUCGGGUGACACCAGGUGUC-5' (SEQ ID NO: 371)
MYC-1465 Target: 5'-CTCCTCAGGCCCCACCTGCTCTCAAGA-3' (SEQ ID NO: 698)
5'-CCCUCACUGGAAGCACUUGC-3' (SEQ ID NO: 45)
3'-GAG GAGGGUGACCUCUCCGAUGGAC-5' (SEQ ID NO: 372)
MYC-1531 Target: 5'-CTCCCTCCACTCGGAAGGACTATCTCTG-3' (SEQ ID NO: 699)
5'-CUCGCAAGGACUAUCCUGCCGaa-3' (SEQ ID NO: 46)
3'-GUAGGCUCCUCCAUAGGACGACGGUU-5' (SEQ ID NO: 373)
MYC-1538 Target: 5'-CAGTCCGGAAGGACTATCTCCGCTGCAGA-3' (SEQ ID NO: 700)
5'-AUCCUGCGGCGAAGGUAAGGCAgt-3' (SEQ ID NO: 47)
3'-GAUGGACGAGGCUGUCCUGCCGAGUCC-5' (SEQ ID NO: 374)
MYC-1550 Target: 5'-CAGGUGCAAGGUGACGAGGACG-3' (SEQ ID NO: 48)
3'-GCUGCCGACCGUGUCCUGCCGAGUCC-5' (SEQ ID NO: 375)
MYC-1555 Target: 5'-CTGCTGCAAAGGGAGTTCGTGGACA-3' (SEQ ID NO: 702)
5'-CAAGAGGGUCAGGUGAGACG-3' (SEQ ID NO: 49)
3'-GUG UUCUGCGAAGUGCCUGACG-5' (SEQ ID NO: 376)
MYC-1560 Target: 5'-GCUGACAGGTTGCAAGGACGAGT-3' (SEQ ID NO: 703)
5'-GGGUCAGAGGUCAGGAGUCCAG-3' (SEQ ID NO: 50)
3'-GAC GCAGCGCGUCGACGAGGUC-5' (SEQ ID NO: 377)
MYC-1565 Target: 5'-GAGGTCGAAGTGGACGTGCAGATGT-3' (SEQ ID NO: 704)
5'-AGUGGUGACAGGUCAGGACA-3' (SEQ ID NO: 51)
3'-AGU UCAACCGUGACGUGACACG-5' (SEQ ID NO: 378)
MYC-1570 Target: 5'-TCAGATTGACAGTGTCAGTCTGCTGA-3' (SEQ ID NO: 705)
5'-GGACAGUGAGCAGGAGUCCGA-3' (SEQ ID NO: 52)
3'-AAC UCUGCCAGGACGUGAGGUGACG-5' (SEQ ID NO: 379)
MYC-1575 Target: 5'-TTGGACAGTGTCAGTCTGAGACG-3' (SEQ ID NO: 706)
5'-CACAGUCCCGACACAGCAGC-3' (SEQ ID NO: 53)
3'-AG UCUCAGGACUCUGUGCUUGGUG-5' (SEQ ID NO: 380)
MYC-1584 Target: 5'-GTCAAGTCTTGAGACATCGAC-3' (SEQ ID NO: 707)
5'-GAGACAGAUCGACAAACCGGAAA-3' (SEQ ID NO: 54)
3'-GAG UCUGUCAGGUGGUGGUGACUGG-5' (SEQ ID NO: 381)
MYC-1593 Target: 5'-CTGAGACAGATCGACAAACCGGAAA-3' (SEQ ID NO: 708)
5'-GAUCAGAAACAAACCGGAAAU-Cacc-3' (SEQ ID NO: 55)
3'-GUCUAGGUUGGUGGUGGUGGACG-5' (SEQ ID NO: 382)
3'-'AUC AAUAGGAAUUUUUCGGUGUCGUA- 5' (SEQ ID NO: 394)
MYC-1774 Target: 5'-'TAGTTATCTTAAAAAGCCACAGCAT-3' (SEQ ID NO: 721)
3'-'UUG GAAUUUUUCGGUGUCGUAUGUAG-5' (SEQ ID NO: 395)
MYC-1779 Target: 5'-'ATCCTTAAAAAGCCACAGCATAC-3' (SEQ ID NO: 722)
3'-'AUU UUUUCGGUGUCGUAUGGACAG- 5' (SEQ ID NO: 396)
MYC-1784 Target: 5'-'TAAAAAGCCACAGCATACATCTGTC-3' (SEQ ID NO: 723)
3'-'UAG GAAUUUUUCGGUGUCGUAUGUAG-5' (SEQ ID NO: 397)
MYC-1789 Target: 5'-'AAAGCCACAGCATACATCTTAAAAAAGCCACAGCAT-3' (SEQ ID NO: 724)
3'-'GUC GUAUGGACAGGGACGUUGGC-5' (SEQ ID NO: 725)
MYC-1795 Target: 5'-'CAGCATACATCTTAAAAAAGCCACAGCATACATC-3' (SEQ ID NO: 726)
3'-'UUU UCUGUGUCGUAUGGACAGGCAGG-5' (SEQ ID NO: 400)
MYC-1803 Target: 5'-'GTTCTGTCCGAACAGGAGCAAAAGCT-3' (SEQ ID NO: 727)
3'-'UGU GCGGUUUCGAGUAAAGACUUCUCCUGAACA-5' (SEQ ID NO: 401)
MYC-1816 Target: 5'-'AGCAGGAGGACAAACGCAAAAGCT-3' (SEQ ID NO: 728)
3'-'UCG CGGUUUCGAGUAAAGACUUCUCCUCG-5' (SEQ ID NO: 402)
MYC-1823 Target: 5'-'GGGAAGCTCAGCTTTCTCAGAACAGGAGCA-3' (SEQ ID NO: 729)
3'-'UUU UCUGUUGUGUUUGUGGACUUUCGT-3' (SEQ ID NO: 76)
MYC-1828 Target: 5'-'AAAAGCTCATTTCTGGAAGGACTTG-3' (SEQ ID NO: 730)
3'-'AGU AAUACAGCUGUUCUGUAGGCAG-5' (SEQ ID NO: 403)
MYC-1834 Target: 5'-'TCAGACTGTGGAAGGACTTG-3' (SEQ ID NO: 731)
3'-'GAC UUCUGAGAAAGCCAGCGGACCGG-5' (SEQ ID NO: 404)
MYC-1840 Target: 5'-'CTGAAAGGACTCTTGGGCGGAAAGC-3' (SEQ ID NO: 732)
5' -GGACUUGUUGCGAAACGACGAGaa-3' (SEQ ID NO: 79)
3' -GUGACAAACGCGGAAUUGCUGUCUU-5' (SEQ ID NO: 406)
MYC-1845 Target: 5' -GAGGACTTGCTGCCGAAACGACGAGAA-3' (SEQ ID NO: 733)
5' -UGUUGCGAAACGACGAGAA-3' (SEQ ID NO: 406)
MYC-1850 Target: 5' -GAGGACTTGCTGCCGAAACGACGAGAA-3' (SEQ ID NO: 733)
5' -CGGAAACGACGAGAA-3' (SEQ ID NO: 81)
MYC-1855 Target: 5' -TGGAGAACACGAAACGAGATTTGAAC-3' (SEQ ID NO: 735)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1882 Target: 5' -AACAACCATCCAAGCTGGAACGCAAACCTTT-3' (SEQ ID NO: 736)
5' -GAACACCUACGAAACGAGUGCGAAGAACGCAUCG-3' (SEQ ID NO: 83)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1888 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1893 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1900 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1990 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1906 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1911 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1921 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1990 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' -GCUACGGAACGAAACGUGCCGAAACG-3' (SEQ ID NO: 84)
3' -AAGACCUUGUUGCGAAGAACUGGCAUCG-5' (SEQ ID NO: 408)
MYC-1931 Target: 5' -TGAAACAGCTACGGAACGCAAACCTTTG-3' (SEQ ID NO: 737)
5' - CUUCUACAGAAUGUCCUGAGCaa - 3'  (SEQ ID NO: 91)
3' - AGG AAGAUUGUCUU CAGGACUGGCU - 5'  (SEQ ID NO: 418)

MYC-1937 Target: 5' - TCTTTCTACAGAAATGTTCAGCAA - 3'  (SEQ ID NO: 745)
5' - CAGAAAUGUCCUGAGCACCAacct - 3'  (SEQ ID NO: 92)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 419)

MYC-1944 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 746)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 420)

MYC-1953 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 747)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 421)

MYC-1959 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 748)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 422)

MYC-1965 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 749)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 423)

MYC-1970 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 750)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 424)

MYC-1976 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 751)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 425)

MYC-1981 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 752)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 426)

MYC-1989 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 753)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 427)

MYC-1994 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 754)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 428)

MYC-2001 Target: 5' - AACAGAAATGTTCAGGACACCTTA - 3'  (SEQ ID NO: 755)
5' - CAGAAAUGUCCUGAGCAUACC - 3'  (SEQ ID NO: 93)
3' - UUG UCUUACAGGACUGGUUGGAG - 5'  (SEQ ID NO: 429)
MYC-2006 Target: 5' -CACAACCTTGGCTGAGTCTTGAGACTG-3 ' (SEQ ID NO: 756)
5' -GGCUGAGUCUUGAGACUGAAAGAtt-3 ' (SEQ ID NO: 103)
3' -AAC CAG CAC ACAAC CGACUUGACUUGUCAAUCUUAA- 5' (SEQ ID NO: 430)
MYC-2013 Target: 5' -TTGGCTGAGTCTTGAGACTGAAAGATT-3 ' (SEQ ID NO: 757)
5' -GCUUUGACUGAAAGAUAUUAGCca-3 ' (SEQ ID NO: 104)
3' -CUC AGA ACUCUGACUUUCUAAAUCGGU-5' (SEQ ID NO: 431)
MYC-2019 Target: 5' -GAGTCTTGAGACTGAAAGATTTAGCCA-3 ' (SEQ ID NO: 758)
5' -GACUGAAAGAUUUAGCUAAUGta-3' (SEQ ID NO: 105)
3' -CUC AGAACUCUGACUUUCUAAAUCGGUAUUACAU-5' (SEQ ID NO: 432)
MYC-2026 Target: 5' -GAGACTGAAAGATTTAGCCATAATGTA-3 ' (SEQ ID NO: 759)
5' -AAAGAUUUAGCCAUAAUGUAAACtg-3 ' (SEQ ID NO: 106)
3' -AC UUUCUAAAUCGGUAUUACAUUUGAC-5' (SEQ ID NO: 433)
MYC-2031 Target: 5' -TGAAAGATTTAGCCATAATGTAAACTG-3 ' (SEQ ID NO: 760)
5' -GCCAUAAUGUAAACUGCCUCAAAtt-3 ' (SEQ ID NO: 107)
3' -UAC AUUUGACGGAGUUUAACCUGAAAC-5' (SEQ ID NO: 434)
MYC-2040 Target: 5' -TAGCCATAATGTAAACTGCCTCAAATT-3 ' (SEQ ID NO: 761)
5' -GUAAACUGCCUCAAAUUGGACUUtg-3 ' (SEQ ID NO: 108)
3' -UGA CGGAGUUUAACCUGAAACCCGUAU-5' (SEQ ID NO: 435)
MYC-2048 Target: 5' -ATGTAAACTGCTCAAATTTGGACTTTG-3 ' (SEQ ID NO: 762)
5' -UGCCUAAAUUUGACUUUGGCCATA-3 ' (SEQ ID NO: 109)
3' -ACU UUCUAAAUUGCCGUAUUACAUUGAC-5' (SEQ ID NO: 436)
MYC-2054 Target: 5' -ACTGCCTCAAATTTGGACTTTGGGCATA-3 ' (SEQ ID NO: 763)
5' -CAAAUUGGACUUUGGCCAUAAGa-3 ' (SEQ ID NO: 110)
3' -GAG UUUAACCGCGAAGGCUUAACCGUGUAAA-5' (SEQ ID NO: 437)
MYC-2059 Target: 5' -CTCAAATTTGGACTTTGGGCATAAAAGA-3 ' (SEQ ID NO: 764)
5' -GACUUGGCGCAUAAAGAACAUUt-3 ' (SEQ ID NO: 111)
3' -ACC UGAAACCCGUAUUUUCUUGAAAAA-5' (SEQ ID NO: 438)
MYC-2066 Target: 5' -TGGACTTTGGGCATAAAAGAACCTTTT-3 ' (SEQ ID NO: 765)
5' -GSCAUUAAAAACGCUUUAUAUGCtt-3 ' (SEQ ID NO: 112)
3' -ACC CGUAUUUUCUGAAAAUACGAA-5' (SEQ ID NO: 439)
MYC-2073 Target: 5' -TGGGCATAAAAGAACCTTTTATGCTT-3 ' (SEQ ID NO: 766)
5' -AAAAGAACCUCUUUUUAGCUUACCat-3 ' (SEQ ID NO: 113)
3' -IUAIIUUCUUGAAAAUACGAAUGGUA-5' (SEQ ID NO: 440)
MYC-2078 Target: 5' -ATAAAAGAACCTTTTTATGCTTACC-3 ' (SEQ ID NO: 767)
5' -AACUUUUUUAUGCUUACCUUUt-3 ' (SEQ ID NO: 114)

134
5'-'CCAUUAAAUGUAAAUAACUUUAAta-3' (SEQ ID NO: 126)
3'-'ACGUAAUUUCAUUUAUUGAAAUa_5' (SEQ ID NO: 453)
MYC-2188  Target:  5'-'TGCCATTAAGTAAACTTTTATAA-3' (SEQ ID NO: 780)
5'-'UUAAUAAAAGGUAACGAAAac-3' (SEQ ID NO: 127)
3'-'GAAUAAUUGGAAUAAUCGAUAG-5' (SEQ ID NO: 454)
MYC-2207  Target:  5'-'CTTTAATACGTGTATACGTTAC-3' (SEQ ID NO: 781)
5'-'CAGGUUUAAAACGUUUAUAGCAGUUac-3' (SEQ ID NO: 127)
3'-'GUUGUCUUAAGGUAAUAAUUAU-5' (SEQ ID NO: 455)
MYC-2233  Target:  5'-'CACAGAATTTCAATCCTAGTATATAGT-3' (SEQ ID NO: 782)
5'-'CUAGUAUUAUAGGUACUAUAAACcc-3' (SEQ ID NO: 129)
3'-'UGGAUCAUUAUACGUAAUUGGG-5' (SEQ ID NO: 456)
MYC-2260  Target:  5'-'ACCTAGTATTTAGGGTACTATAGT-3' (SEQ ID NO: 783)
5'-'AAUAUCAUUAUAAACC CuomoUtt-3' (SEQ ID NO: 130)
3'-'UUAAUUCGAAUUAUUGGAUAA--5' (SEQ ID NO: 457)
MYC-2267  Target:  5'-'ATTAGGACTTAAACCTGCTTTT-3' (SEQ ID NO: 784)
5'-'ACUUAACCAGCUUUUUUUUatt-3' (SEQ ID NO: 131)
3'-'CAUGAUAUUUGGAAUAAAUAAUAA-5' (SEQ ID NO: 458)
MYC-2274  Target:  5'-'GCTTATACGTGTATACGTTAC-3' (SEQ ID NO: 785)
5'-'GCUAAUUUUUUUAUUAAGUACaa-3' (SEQ ID NO: 132)
3'-'UGGAUAAUAAUAAUAUUAucaGua-5' (SEQ ID NO: 459)
MYC-2282  Target:  5'-'AACCTTATTTTTTATTTATTAATCCA-3' (SEQ ID NO: 786)
5'-'UUUUUUUUAUUAUAGCAUUGgU-3' (SEQ ID NO: 133)
3'-'AAUAAAAAAUAUUAAUUGGCAAAAC-5' (SEQ ID NO: 460)
MYC-2287  Target:  5'-'TAATTTTTTTATTTGATACATTGGG-3' (SEQ ID NO: 787)
5'-'UAAACGUACUUUUGCUUUUUua-3' (SEQ ID NO: 134)
3'-'AAAUAUUACUUUACGGAAAUAAA_5' (SEQ ID NO: 461)
MYC-2295  Target:  5'-'TTATTATAGACTATTGTGTTTA-3' (SEQ ID NO: 788)
5'-'AGUAAUUAUUGCUUUUAAAGUt-3' (SEQ ID NO: 135)
3'-'AAUUAUGUAAACGGAAAUAAUCAAC-5' (SEQ ID NO: 462)
MYC-2300  Target:  5'-'TTAAGTACATTGTGTTTAAGTTT-3' (SEQ ID NO: 789)
5'-'UUUUUGCUUUUUAAUAGUGAUuUtt-3' (SEQ ID NO: 136)
3'-'UGUAAAAUGAAAAAAUUAAUCAAAAAC-5' (SEQ ID NO: 463)
MYC-2306  Target:  5'-'ACATTTGGCTTTTTAAAGTGTTTTTTG-3' (SEQ ID NO: 790)
5'-'CUUUUUAAAGUGUUUUUUUUUuUat-3' (SEQ ID NO: 137)
3'-'ACGAAAAAUUAACCCACAAAAAAAGua-5' (SEQ ID NO: 464)
MYC-2312  Target:  5'-'TGCTTTTTAAAGTTGTTTTTTTCTAT-3' (SEQ ID NO: 791)
5'-UAUGUUUUGAAGAAAAAUAATA-3' (SEQ ID NO: 138)
3'-AGA UAACAAAAAUCUUUUUAAUUU-5' (SEQ ID NO: 465)
Myc Target: 5'-CTTATTGTGTTTGGAAAAATATAAATA-3' (SEQ ID NO: 792)
5'-UUUUUAGAAAAAUUUACUG-3' (SEQ ID NO: 139)
3'-ACA AAAACUUUUUUAAUUUGACG-5' (SEQ ID NO: 466)
Myc Target: 5'-TGTTTTAGAAAAATATAAATACTGG-3' (SEQ ID NO: 793)
5'-AAAAAAUAUAUACGCAAAAta-3' (SEQ ID NO: 140)
3'-CUU UUUUUAUUUUGACGCGCAAUAU-5' (SEQ ID NO: 467)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 794)
5'-AAUAACUGGCAAAUAUAUCAUUGag-3' (SEQ ID NO: 141)
3'-UUU UUUUUAUUUUGACGCGUUUAUAU-5' (SEQ ID NO: 468)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 795)
5'-AUAACACGCCAAAAAUAUAUCAUUGag-3' (SEQ ID NO: 142)
3'-CCU UUUUUAUUUUGACGCGUUUAUAU-5' (SEQ ID NO: 469)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 796)
5'-UAUUGAGCCAAAUAUAUCAUUGag-3' (SEQ ID NO: 143)
3'-AAA UAUAUACGCGAAAUAUUGA-5' (SEQ ID NO: 470)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 797)
5'-GAGCCAAAUAAAAAUAUAUAUUAAA-3' (SEQ ID NO: 144)
3'-AAC UCUGGUAAGAAUUUAAAAUAU-5' (SEQ ID NO: 471)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 798)
5'-AAUAACUGGCAAAUAUAUCAUUGag-3' (SEQ ID NO: 145)
3'-CAAAUUAUAUACGCGUUUAUAUU-5' (SEQ ID NO: 472)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 799)
5'-AUAAACACGCCAAAAAUAUAUCAUUGag-3' (SEQ ID NO: 146)
3'-CUU UUUUUAUUUUGACGCGUUUAUAU-5' (SEQ ID NO: 473)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 800)
5'-UCUCGCUUGGAUAAUUCGGGCAAGG-3' (SEQ ID NO: 147)
3'-UGG AGCGACAUCAUUAAGGCGGCUCU-5' (SEQ ID NO: 474)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 801)
5'-UGGCUAAGGAUAAUCCAGCGAGGc-3' (SEQ ID NO: 148)
3'-AGG CGAGACAUCAUUAAGGCGGCUCU-5' (SEQ ID NO: 475)
Myc Target: 5'-GAAAAATATAAATAACTGGCAATATA-3' (SEQ ID NO: 802)
5'-GGUCUGAUAUUCGCGAGAGGc-3' (SEQ ID NO: 149)
3'-AGG CGAGACAUCAUUAAGGCGGCUCU-5' (SEQ ID NO: 476)
MYC-192 Target: 5'-TCGCTGTAGTAATTCCAGCGAGAGGCA-3' (SEQ ID NO: 803)
5'-CUGUAGUAAUUCCAGCGAGAGGCag-3' (SEQ ID NO: 150)
3'-GGCAUCAUAAGUGCCUCUCGGUC-5' (SEQ ID NO: 477)

MYC-193 Target: 5'-CGCTGTAGTAATTCCAGCGAGAGGCAG-3' (SEQ ID NO: 804)
5'-UGUAGUAAUUCCAGCGAGAGGCAga-3' (SEQ ID NO: 151)
3'-CGAUCAUAAAGUGCCUCUCGGUC-5' (SEQ ID NO: 478)

MYC-194 Target: 5'-GCTGTAGTAATTCCAGCGAGAGGCAGA-3' (SEQ ID NO: 805)
5'-GUAGUAAUUCCAGCGAGAGGCAga-3' (SEQ ID NO: 152)
3'-GCAUCAUAAGUGCCUCUCGGUCUC-5' (SEQ ID NO: 479)

MYC-195 Target: 5'-CTGTAGTAATTCCAGCGAGAGGCAGAG-3' (SEQ ID NO: 806)
5'-CUUCACCAACAGGAACUAUGACCtc-3' (SEQ ID NO: 153)
3'-UCGUGGUUGUCCUUGAUACUGGAG-5' (SEQ ID NO: 480)

MYC-612 Target: 5'-AGCTTCACCAACAGGAACTATGACCTC-3' (SEQ ID NO: 807)
5'-UUCACCAACAGGAACUAUGACCUcg-3' (SEQ ID NO: 154)
3'-CGAGUGGUUGUCCUUGAUACUGGAGC-5' (SEQ ID NO: 481)

MYC-613 Target: 5'-GCTTCACCAACAGGAACTATGACCTCG-3' (SEQ ID NO: 808)
5'-UCACCAACAGGAACUAUGACCUCga-3' (SEQ ID NO: 155)
3'-GAGUGGUUGUCCUUGAUACUGGAGCU-5' (SEQ ID NO: 482)

MYC-614 Target: 5'-CTTCACCAACAGGAACTATGACCTCGA-3' (SEQ ID NO: 809)
5'-CACCAACAGGAACUAUGACCUCGac-3' (SEQ ID NO: 156)
3'-AAGUGGUUGUCCUUGAUACUGGAGCA-5' (SEQ ID NO: 483)

MYC-615 Target: 5'-AGCTTCACCAACAGGAACTATGACCTC-3' (SEQ ID NO: 810)
5'-ACCAACAGGAACUAUGACCUCGact-3' (SEQ ID NO: 157)
3'-AGGUUGGUUGUCCUUGAUACUGGAGCG-5' (SEQ ID NO: 484)

MYC-616 Target: 5'-CTTCACCAACAGGAACTATGACCTCGA-3' (SEQ ID NO: 811)
5'-CCACAGGAACUAUGACCUCGActa-3' (SEQ ID NO: 158)
3'-GGUGGUUGUCCUUGAUACUGGAGCA-5' (SEQ ID NO: 485)

MYC-617 Target: 5'-CACCAACAGGAACUAUGACCUCGACT-3' (SEQ ID NO: 812)
5'-CAACAGGAACUAUGACCUCGACTac-3' (SEQ ID NO: 159)
3'-UGGUGGUUGUCCUUGAUACUGGAGCA-5' (SEQ ID NO: 486)

MYC-618 Target: 5'-ACCAACAGGAACUAUGACCUCGACT-3' (SEQ ID NO: 813)
5'-AACAGGAACUAUGACCUCGACTac-3' (SEQ ID NO: 160)
3'-GGUGGUUGUCCUUGAUACUGGAGCA-5' (SEQ ID NO: 487)

MYC-619 Target: 5'-ACCAACAGGAACUAUGACCUCGACT-3' (SEQ ID NO: 814)
5'-ACAGGAACUAUGACCUCGACUAGa-3' (SEQ ID NO: 161)
3' - GUU GUCCUUGAUACUGGAGCUGAUGCU-5 ' (SEQ ID NO: 488)
MYC-620 Target: 5' - CAACAGGAACTATGACCTCGACTACGA-3 ' (SEQ ID NO: 815)
5' - CAGGAAACUAGGACUACUGAC-3 ' (SEQ ID NO: 162)
3' - UUG UCCUUGAUACUGGAGCUAGUGCU-5 ' (SEQ ID NO: 489)
MYC-621 Target: 5' - AACAGGAACTATGACCTCGACTACG-3 ' (SEQ ID NO: 816)
5' - AGGAACUAGGACUACUGAUGCUG-3 ' (SEQ ID NO: 163)
3' - UGU GUCCUUGAUACUGGAGCUGAUGCU-5 ' (SEQ ID NO: 490)
MYC-622 Target: 5' - ACAGGAACTATGACCTCGACTACG-3 ' (SEQ ID NO: 817)
5' - GAAACUAGGACUACUGAUGCUGAC-3 ' (SEQ ID NO: 164)
3' - GUU GUCCUUGAUACUGGAGCUGAUGCU-5 ' (SEQ ID NO: 491)
MYC-623 Target: 5' - AACAGGAACTATGACCTCGACTACGC-3 ' (SEQ ID NO: 818)
5' - GGAACUAGGACUACUGAUGCUGACG-3 ' (SEQ ID NO: 165)
3' - UCC UUGAUACUGGACUAGGUGCUG-5 ' (SEQ ID NO: 492)
MYC-624 Target: 5' - AGGAACUAGGACUACUGAUGCUGAC-3 ' (SEQ ID NO: 819)
5' - CACAGGAACTATGACCTCGACTACG-3 ' (SEQ ID NO: 166)
3' - CCG UUGAUACUGGACUAGGUGCUGACG-5 ' (SEQ ID NO: 493)
MYC-625 Target: 5' - GAACGATGACCTCGACTACGACTCTC-3 ' (SEQ ID NO: 820)
5' - ACUGAAGGACUACUGAUGCUGACTG-3 ' (SEQ ID NO: 167)
3' - CUG AUAGCUAGGACUAGGUGCUGACG-5 ' (SEQ ID NO: 494)
MYC-626 Target: 5' - AACTATGACCTCGACTACGACTCG-3 ' (SEQ ID NO: 821)
5' - CUAUGACUAGGACUACUGAUGCUGG-3 ' (SEQ ID NO: 168)
3' - UUG AUACUGGACUAGGUGCUGACG-5 ' (SEQ ID NO: 495)
MYC-627 Target: 5' - AACTATGACTCGACTACGACTCGG-3 ' (SEQ ID NO: 822)
5' - UAUGACUACUGGACUACUGAUGCUGGAC-3 ' (SEQ ID NO: 169)
3' - UGA UACUGGACUAGGUGCUGACG-5 ' (SEQ ID NO: 496)
MYC-628 Target: 5' - AACTATGACTCGACTACGACTCGGC-3 ' (SEQ ID NO: 823)
5' - AUGACCUAGGACUACUGAUGCUGGUA-3 ' (SEQ ID NO: 170)
3' - GUA GUGAUGGCUAGGACUACUGAUGCUGA-5 ' (SEQ ID NO: 497)
MYC-629 Target: 5' - CGAGGAACTATGACCTCGACTACGACTCGA-3 ' (SEQ ID NO: 824)
5' - GAGGAUAUCUGGAAAGAAAAUUCGAG-3 ' (SEQ ID NO: 171)
3' - CCG UCCUAGGACUAGGUGCUGACG-5 ' (SEQ ID NO: 498)
MYC-733 Target: 5' - GCGAGGATATCTGGAAGAAATTCGAGCTACGAGG-3 ' (SEQ ID NO: 825)
5' - AGGAUAUCUGGAAAGAAAAUUCGAGCT-3 ' (SEQ ID NO: 172)
3' - GCC CUAUAGGACUACUGAUGCUGACG-5 ' (SEQ ID NO: 499)
MYC-734 Target: 5' - GAGGAACTATGACCTCGACTACGACTCGA-3 ' (SEQ ID NO: 826)
5'-'GGAAUUCUGGAAGAAAUUCGAGCgt-3' (SEQ ID NO: 173)
3'-'GUUCAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 500)

MYC-735 Target: 5'-'GAGGATATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 827)
5'-'GAUACUGGGAAGAAAUUCGAGCuc-3' (SEQ ID NO: 174)
3'-'UUCUAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 501)

MYC-736 Target: 5'-'AGGATATCTGGAAGAAATTCGAGCTGC-3' (SEQ ID NO: 828)
5'-'AUACUGGGAAGAAAUUCGAGCgc-3' (SEQ ID NO: 175)
3'-'CCUUAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 502)

MYC-737 Target: 5'-'GGATATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 829)
5'-'UAUACUGGGAAGAAAUUCGAGCgc-3' (SEQ ID NO: 176)
3'-'CUUAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 503)

MYC-738 Target: 5'-'GATATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 830)
5'-'UCUGGAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 177)
3'-'UUAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 504)

MYC-739 Target: 5'-'ATATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 831)
5'-'CCUUAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 505)

MYC-740 Target: 5'-'TATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 832)
5'-'UGUGAAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 178)
3'-'UAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 506)

MYC-741 Target: 5'-'ATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 833)
5'-'UGUGAAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 179)
3'-'UAAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 507)

MYC-742 Target: 5'-'ATCTGGAAGAAATTCGAGCTG-3' (SEQ ID NO: 834)
5'-'UGUGAAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 180)
3'-'UAAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 508)

MYC-743 Target: 5'-'CTTAGAAAGAAATTCGAGCTG-3' (SEQ ID NO: 835)
5'-'UGUGAAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 181)
3'-'UAAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 509)

MYC-744 Target: 5'-'CTAGCCGCCGCTCCGGGCTCTGCTGCC-3' (SEQ ID NO: 836)
5'-'UGUGAAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 182)
3'-'UAAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 510)

MYC-745 Target: 5'-'CTAGCCGCCGCTCCGGGCTCTGCTGCC-3' (SEQ ID NO: 837)
5'-'UGUGAAAGAAAUUCGAGCUGcc-3' (SEQ ID NO: 183)
3'-'UAAUAGACCUUCUUAAAGGCGACGAGG-5' (SEQ ID NO: 511)

MYC-746 Target: 5'-'CTAGCCGCCGCTCCGGGCTCTGCTGCC-3' (SEQ ID NO: 838)
5'-'CGCGCUCCGGGCUUGCUCGCGGc-3' (SEQ ID NO: 185)
3'-'CGGCGGAGGGCCGAGACGAGCGGGA_ 5' (SEQ ID NO: 512)

MYC-787 Target: 5'-'GCGGCCGCTCCGGGCTCTGCTCGCCCT-3' (SEQ ID NO: 839)
5'-'GCCGCCGCTCCGGGCTCTGCTCGCCCTc-3' (SEQ ID NO: 186)
3'-'GCCGCCGCTCCGGGCTCTGCTCGCCCTG-5' (SEQ ID NO: 513)

MYC-788 Target: 5'-'CGCGGCTCGGGCTCTGCTCGGCTC-3' (SEQ ID NO: 840)
5'-'GGCGAGGCCCGAGACGAGCGGGA-3' (SEQ ID NO: 514)

MYC-913 Target: 5'-'GGGAGGACATGCTGACAGGAGTT-3' (SEQ ID NO: 841)
5'-'GAGGAGACATGCTGACAGGAGTTc-3' (SEQ ID NO: 515)

MYC-914 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 842)
5'-'ACCUCUCUCUCUGUACCACUUGCCAAG-5' (SEQ ID NO: 516)

MYC-915 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 843)
5'-'CGUCUCUCUCUCUGUACCACUUGCCAAG-5' (SEQ ID NO: 517)

MYC-916 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 844)
5'-'UCUCUCUCUCUCUGUACCACUUGCCAAGAA-5' (SEQ ID NO: 518)

MYC-917 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 845)
5'-'CCUCUCUCUCUCUGUACCACUUGCCAAGAA-5' (SEQ ID NO: 519)

MYC-918 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 846)
5'-'AGGAGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 520)

MYC-919 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 847)
5'-'AGGAGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 521)

MYC-920 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 848)
5'-'AGGAGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 522)

MYC-921 Target: 5'-'GGGAGGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 849)
5'-'AGGAGACATGCTGACAGGAGTTT-3' (SEQ ID NO: 523)

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MYC-975 Target: 5'-AACATCATCATCCAGGACTGTATGTGG-3' (SEQ ID NO: 850)
5'-AUCAUCAUCCAGUAGUGAG-3' (SEQ ID NO: 197)
3'-UGGAGUAGUAGGUGCAGAUAACACCUCA-5' (SEQ ID NO: 524)

MYC-976 Target: 5'-ACATCATCATCCAGGACTGTATGTGG-3' (SEQ ID NO: 851)
5'-UCAUCAUCCAGUGUGGAG-3' (SEQ ID NO: 198)
3'-GUAUAGUAGUAGGUCCUGACAUACACCUC-5' (SEQ ID NO: 525)

MYC-977 Target: 5'-CATCATCCAGGACTGTATGTGGAG-3' (SEQ ID NO: 852)
5'-CAUCAUCCAGGACUGUGAUGUGGa-3' (SEQ ID NO: 200)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCG-5' (SEQ ID NO: 526)

MYC-978 Target: 5'-ATCATCATCCAGGACTGTATGTGGAGC-3' (SEQ ID NO: 853)
5'-AUCAUCCAGGACUGUGAUGUGGAGc-3' (SEQ ID NO: 201)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGC-5' (SEQ ID NO: 527)

MYC-979 Target: 5'-TCATCATCCAGGACTGTATGTGGAGCG-3' (SEQ ID NO: 854)
5'-UCAUCCAGGACUGUGAUGUGGAGGc-3' (SEQ ID NO: 202)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCC-5' (SEQ ID NO: 528)

MYC-980 Target: 5'-CATCATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 855)
5'-CAUCCAGGACUGUGAUGUGGAGCGGc-3' (SEQ ID NO: 203)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCCG-5' (SEQ ID NO: 529)

MYC-981 Target: 5'-ATCATCCAGGACTGTATGTGGAGCGGC-3' (SEQ ID NO: 856)
5'-AUCCAGGACUGUGAUGUGGAGCGGct-3' (SEQ ID NO: 204)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCCGA-5' (SEQ ID NO: 530)

MYC-982 Target: 5'-TCATCATCCAGGACTGTATGTGGAGCGGCT-3' (SEQ ID NO: 857)
5'-UCAGGACUGUGAUGUGGAGCGGCTt-3' (SEQ ID NO: 205)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCCGAAG-5' (SEQ ID NO: 531)

MYC-983 Target: 5'-CATCCAGGACTGTATGTGGAGCGGCTT-3' (SEQ ID NO: 858)
5'-CCAGGACUGUGAUGUGGAGCGGCTtc-3' (SEQ ID NO: 206)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCCGAAGA-5' (SEQ ID NO: 532)

MYC-984 Target: 5'-ATCCAGGACTGTATGTGGAGCGGCTTTC-3' (SEQ ID NO: 859)
5'-CCAGGACUGUGAUGUGGAGCGGCTTTCt-3' (SEQ ID NO: 207)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCCGAAGAG-5' (SEQ ID NO: 533)

MYC-985 Target: 5'-ATCCAGGACTGTATGTGGAGCGGCTTCT-3' (SEQ ID NO: 860)
5'-CCAGGACUGUGAUGUGGAGCGGCTTCTc-3' (SEQ ID NO: 208)
3'-AGUGUAGUAGUAGGUCCUGACAUACACCUCGCCGAAGAGA-5' (SEQ ID NO: 534)

MYC-986 Target: 5'-CCAGGACTGTATGTGGAGCGGCTTCTTC-3' (SEQ ID NO: 861)
5'-CCAGGACTGTATGTGGAGCGGCTTCTTg-3' (SEQ ID NO: 209)
3'-'GUC UCUUCGACCAGGAGGUGCGAC-5' (SEQ ID NO: 535)

MYC-1033 Target: 5'-'CAGAGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 862)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 209)
3'-'UUU UCCAGGAGGUGCGACGCG-5' (SEQ ID NO: 536)

MYC-1034 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 863)

5'-'GAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 210)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 537)

MYC-1035 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 864)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 211)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 538)

MYC-1036 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 865)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 212)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 539)

MYC-1037 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 866)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 213)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 540)

MYC-1038 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 867)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 214)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 541)

MYC-1039 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 868)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 215)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 542)

MYC-1040 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 869)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 216)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 543)

MYC-1041 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 870)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 217)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 544)

MYC-1042 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 871)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 218)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 545)

MYC-1043 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 872)

5'-'AGAAGCUUGGGCUCCUACCAGGCGGc-3' (SEQ ID NO: 219)
3'-'UUG UUCCCGAAGGAGGUGCGACGCG-5' (SEQ ID NO: 546)

MYC-1044 Target: 5'-'AGAAGCTGGCCTCCTACCAGGCTG-3' (SEQ ID NO: 873)
5'-UCCUACCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 220)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 547)

MYC-1045 Target: 5'-\textbf{CCTCTTACCAGGCGCACAAGAAGAca}-3' (SEQ ID NO: 874)

5'-CCUACCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 221)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 548)

MYC-1046 Target: 5'-\textbf{CTCTTACCAGGCGCACAAGAAGAca}-3' (SEQ ID NO: 875)

5'-CUACCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 222)
3'-\textbf{AGG}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 549)

MYC-1047 Target: 5'-\textbf{TCTCTTACCAGGCGCACAAGAAGAca}-3' (SEQ ID NO: 876)

5'-UACCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 223)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 550)

MYC-1048 Target: 5'-\textbf{TCTCTTACCAGGCGCACAAGAAGAca}-3' (SEQ ID NO: 877)

5'-ACCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 224)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 551)

MYC-1049 Target: 5'-\textbf{TCTCTTACCAGGCGCACAAGAAGAca}-3' (SEQ ID NO: 878)

5'-CCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 225)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 552)

MYC-1050 Target: 5'-\textbf{TCTCTTACCAGGCGCACAAGAAGAca}-3' (SEQ ID NO: 879)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 226)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 553)

MYC-1051 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGCCGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 880)

5'-ACCAGGCAGCGGCGGCGCCGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC-3' (SEQ ID NO: 227)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 554)

MYC-1052 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 881)

5'-CCAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 228)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 555)

MYC-1053 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 882)

5'-CACAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 229)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 556)

MYC-1054 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 883)

5'-ACAGGCCGUGCAGCAGAAGAca-3' (SEQ ID NO: 230)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 557)

MYC-1055 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 884)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 231)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 558)

MYC-1056 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 885)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 232)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 559)

MYC-1057 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 886)

5'-ACAGGCCGUGCAGCAGAAGAca-3' (SEQ ID NO: 233)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 560)

MYC-1058 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 887)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 234)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 561)

MYC-1059 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 888)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 235)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 562)

MYC-1060 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 889)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 236)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 563)

MYC-1061 Target: 5'-\textbf{ACCAGGCAGCGGCGGCGGCGGCGAGACGAGGUGGUCGAAUCGCGCGGCGAGC}-3' (SEQ ID NO: 890)

5'-CAAGGCUGCAGCAGAAGAca-3' (SEQ ID NO: 237)
3'-\textbf{GGA}\textbf{GGAUGGUCCGACGCGCGUUUCUGU}-5' (SEQ ID NO: 564)
5′-AGCGUCUGCACCUCACCACGUUgt-3′ (SEQ ID NO: 232)
3′-UGUGCCACACGCCAGGAGGUGGCUAGAACA-5′ (SEQ ID NO: 559)
MYC-1099 Target: 5′-ACAGCGTCTGTTCACTCCAGCTTGT-3′ (SEQ ID NO: 886)
5′-GCGUCUGCACCUCACCACGUUGta-3′ (SEQ ID NO: 233)
3′-GUGGCACAGGAGGUGGAGGUGACAU-5′ (SEQ ID NO: 560)
MYC-1100 Target: 5′-CAGCGTCTGTTCACTCCAGCTTGT-3′ (SEQ ID NO: 887)
5′-UCGUCUGCACCUCACCACGUUGUac-3′ (SEQ ID NO: 234)
3′-GAGUUGCUGUCGUCGAGCGGGUUGAUG-5′ (SEQ ID NO: 561)
MYC-1101 Target: 5′-ACAGCGTCTGTTCACTCCAGCTTGT-3′ (SEQ ID NO: 888)
5′-UCGUCUGCACCUCACCACGUUGUac-3′ (SEQ ID NO: 235)
3′-GAGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 562)
MYC-1189 Target: 5′-CTCTCAACGACAGCAGCTCGCCCAAGT-3′ (SEQ ID NO: 889)
5′-CAACGACAGCAGCUCGCCCAAGUcc-3′ (SEQ ID NO: 236)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 563)
MYC-1190 Target: 5′-CTCTCAACGACAGCAGCTCGCCCAAGT-3′ (SEQ ID NO: 890)
5′-CAACGACAGCAGCUCGCCCAAGUcc-3′ (SEQ ID NO: 237)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 564)
MYC-1191 Target: 5′-CTCTCAACGACAGCAGCTCGCCCAAGTCC-3′ (SEQ ID NO: 891)
5′-CAACGACAGCAGCUCGCCCAAGUCCtg-3′ (SEQ ID NO: 238)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 565)
MYC-1192 Target: 5′-CTCTCAACGACAGCAGCTCGCCCAAGTCCT-3′ (SEQ ID NO: 892)
5′-CAACGACAGCAGCUCGCCCAAGUCct-3′ (SEQ ID NO: 239)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 566)
MYC-1193 Target: 5′-CTCTCAACGACAGCAGCTCGCCCAAGTCCTG-3′ (SEQ ID NO: 893)
5′-CAACGACAGCAGCUCGCCCAAGUCCTg-3′ (SEQ ID NO: 240)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 567)
MYC-1315 Target: 5′-TCCATGAGGAGACACCGCCCACCACCA-3′ (SEQ ID NO: 894)
5′-AUGAGGAGACACCGCCCACCACCAc-3′ (SEQ ID NO: 241)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 568)
MYC-1316 Target: 5′-TCCATGAGGAGACACCGCCCACCACCA-3′ (SEQ ID NO: 895)
5′-UGAGGAGACACCGCCCACCACCAc-3′ (SEQ ID NO: 242)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 569)
MYC-1317 Target: 5′-TCCATGAGGAGACACCGCCCACCACCA-3′ (SEQ ID NO: 896)
5′-UGAGGAGACACCGCCCACCACCAc-3′ (SEQ ID NO: 243)
3′-AGUUGCUGUCGUCGAGCGGGUUCAGG-5′ (SEQ ID NO: 570)
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<td>MYC-1319 Target: 5'-TGAGGAGACACGGCCCACCACCAGCAG-3' (SEQ ID NO: 898)</td>
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<td>5'-GAGAGACACCGCCCACCACCAGCAGc-3' (SEQ ID NO: 245)</td>
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<td>5'-GAGACACCGCCCACCACCAGCAGCga-3' (SEQ ID NO: 246)</td>
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<td>MYC-1321 Target: 5'-GGAGACACCGCCCACCACCAGCAGCG-3' (SEQ ID NO: 900)</td>
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<td>5'-GACACCGCCCACCACCAGCAGCGAc-3' (SEQ ID NO: 247)</td>
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<td>MYC-1322 Target: 5'-GAACGCCCACCCACCACCAGCGAGG-3' (SEQ ID NO: 901)</td>
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<td>MYC-1329 Target: 5'-ACCACCGCCACCCGCGGACTC-3' (SEQ ID NO: 908)</td>
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<td>5'-CCACCGCCACCCGCGGACTC-3' (SEQ ID NO: 255)</td>
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MYC-1330 Target: 5'-'CGCCCACCACCGACGCGACTCTGAGG-3' (SEQ ID NO: 909)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 583)
MYC-1331 Target: 5'-'GCCACCCCAACGAGGACTCTGAGG-3' (SEQ ID NO: 910)
3'-'GGUGGUGGUGGUGGUGGAGACUCC-5' (SEQ ID NO: 584)

MYC-1332 Target: 5'-'CCACCCCAACGAGGACTCTGAGG-3' (SEQ ID NO: 911)
5'-'ACCCCCACCGACGCGACTCTGAGG-3' (SEQ ID NO: 258)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 585)
MYC-1333 Target: 5'-'CCACCCCAACGAGGACTCTGAGG-3' (SEQ ID NO: 912)
5'-'ACCCCCACCGACGCGACTCTGAGG-3' (SEQ ID NO: 259)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 586)
MYC-1334 Target: 5'-'CCACCCCAACGAGGACTCTGAGG-3' (SEQ ID NO: 913)
5'-'ACCCCCACCGACGCGACTCTGAGG-3' (SEQ ID NO: 260)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 587)
MYC-1360 Target: 5'-'ACAAAAAGATGAGGAAGAAATCGATG-3' (SEQ ID NO: 914)
5'-'ACAAAAAGATGAGGAAGAAATCGATG-3' (SEQ ID NO: 261)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 588)
MYC-1361 Target: 5'-'ACAAAAAGATGAGGAAGAAATCGATG-3' (SEQ ID NO: 915)
5'-'ACAAAAAGATGAGGAAGAAATCGATG-3' (SEQ ID NO: 262)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 589)
MYC-1448 Target: 5'-'TGAGGCCACAGCAAACCTCCTCAGG-3' (SEQ ID NO: 916)
5'-'TGAGGCCACAGCAAACCTCCTCAGG-3' (SEQ ID NO: 263)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 590)
MYC-1468 Target: 5'-'CTCACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 917)
5'-'CTCACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 264)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 591)
MYC-1469 Target: 5'-'TCACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 918)
5'-'TCACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 265)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 592)
MYC-1470 Target: 5'-'ACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 919)
5'-'ACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 266)
3'-'GGGGCUGGCUGGCUGGAGACUCC-5' (SEQ ID NO: 593)
MYC-1471 Target: 5'-'ACAGCCACACTGTCCTCAAGAGT-3' (SEQ ID NO: 920)
5'-'GCCCACUGGUCCUCAAGAGGUGCca-3' (SEQ ID NO: 267)
3'-'_GGUGUGUGCUAGUGUGUCUGCACGUU-5' (SEQ ID NO: 594)

MYC-1472 Target: 5'-'CAGCCCCACTGTCCTCAAGAGGTGCAA-3' (SEQ ID NO: 921)
5'-'_CCACUGGUCCUCAAGAGGUGCac-3' (SEQ ID NO: 268)
3'-'_UGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 595)

MYC-1473 Target: 5'-'AGCCCACTGTCCTCAAGAGGTGCAA-3' (SEQ ID NO: 922)
5'-'_CCACUGGUCCUCAAGAGGUGCCac-3' (SEQ ID NO: 269)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 596)

MYC-1474 Target: 5'-'GCCCACTGGTCCTCAAGAGGTGCCA-3' (SEQ ID NO: 923)
5'-'_UCGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 597)

MYC-1475 Target: 5'-'CCACTGGTCCTCAAGAGGTGCCA-3' (SEQ ID NO: 924)
5'-'_ACUGGUCCUCAAGAGGUGCca-3' (SEQ ID NO: 270)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 598)

MYC-1476 Target: 5'-'CAGCTGGTCCTCAAGAGGTGCAAGTCCAGTC-3' (SEQ ID NO: 925)
5'-'_CCACUGGUCCUCAAGAGGUGCac-3' (SEQ ID NO: 271)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 599)

MYC-1477 Target: 5'-'GGCGTGGTCCTCAAGAGGTGCAAGTCCAGTC-3' (SEQ ID NO: 926)
5'-'_UGGUCUCUCAGAGGUGUCACUCG-3' (SEQ ID NO: 272)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 600)

MYC-1478 Target: 5'-'CCAGCAGCACTCAAGAGGTGCCAGTCCACGT-3' (SEQ ID NO: 927)
5'-'_UGAGAGGACAGGACAGUGUCUGCAACU-3' (SEQ ID NO: 273)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 601)

MYC-1479 Target: 5'-'CGTGGTCCTCAAGAGGTGCAAGTCCAGTC-3' (SEQ ID NO: 928)
5'-'_GGCCACAGAGGUGCGAGGCCGAGU-3' (SEQ ID NO: 274)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 602)

MYC-1480 Target: 5'-'GGCGTGGTCCTCAAGAGGTGCCAGTCCACGT-3' (SEQ ID NO: 929)
5'-'_UCCUAGAGGUGGUCCGAGUCCGAC-3' (SEQ ID NO: 275)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 603)

MYC-1481 Target: 5'-'GCAGCCAGACGGUGUGGCUCAGGCCG-3' (SEQ ID NO: 930)
5'-'_ACUGGUCCUCAAGAGGUGCca-3' (SEQ ID NO: 276)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 604)

MYC-1482 Target: 5'-'GGTCCCTCAAGAGGTGCAAGTCCACGT-3' (SEQ ID NO: 931)
5'-'_CCUCAGAGGUGGUCCGAGUCCGAC-3' (SEQ ID NO: 277)
3'-'_GGUGUGACAGGACAGUGUCUGCAACU-5' (SEQ ID NO: 605)

MYC-1483 Target: 5'-'TCCTCAAGAGGTGCCAGTCCACAC-3' (SEQ ID NO: 932)
5' -AGCUUUUUUGCCCUGCGUGACCaga-3' (SEQ ID NO: 279)
3' -CCUGGAAAAACGGGACGCACUGGUCU-5' (SEQ ID NO: 606)

MYC-1711 Target: 5' -GGAGCTTTTTTGCCCTGCGTGACCAGA-3' (SEQ ID NO: 933)

5' -GCUUUUUUGCCCUGCGUGACCAGat-3' (SEQ ID NO: 280)
3' -CUG AAAAAGGCACUGGUCUAGUCCG-5' (SEQ ID NO: 607)

MYC-1712 Target: 5' -GACGTCTTTTGCCTGCGTGACCAGAT-3' (SEQ ID NO: 934)

5' -CUUUUUUGCCCUGCGUGACCAGAtc-3' (SEQ ID NO: 281)
3' -UCG AAAAAGGCACUGGUCUAGUCCG-5' (SEQ ID NO: 608)

MYC-1713 Target: 5' -GGCTTTTTTGCCCTGCGTGACCAGATC-3' (SEQ ID NO: 935)

5' -UUUUUUGCCCUGCGUGACCAGAUcc-3' (SEQ ID NO: 282)
3' -CGA AAAAAGGCACUGGUCUAGUCCG-5' (SEQ ID NO: 609)

MYC-1714 Target: 5' -GCTTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 936)

5' -UUUGCCCUGCGUGACCAGAUCCCgg-3' (SEQ ID NO: 283)
3' -AAA AACGGGACGCACUGGUCUAGUCCG-5' (SEQ ID NO: 610)

MYC-1715 Target: 5' -TTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 937)

5' -UUUGCCCUGCGUGACCAGAUCCCgg-3' (SEQ ID NO: 284)
3' -AAA AACGGGACGCACUGGUCUAGUCCG-5' (SEQ ID NO: 611)

MYC-1716 Target: 5' -TTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 938)

5' -UUUGCCCUGCGUGACCAGAUCCCgg-3' (SEQ ID NO: 285)
3' -AAA AACGGGACGCACUGGUCUAGUCCG-5' (SEQ ID NO: 612)

MYC-1717 Target: 5' -TTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 939)

5' -UUUGCCCUGCGUGACCAGAUCCCgg-3' (SEQ ID NO: 286)
3' -AAA AACGGGACGCACUGGUCUAGUCCG-5' (SEQ ID NO: 613)

MYC-1718 Target: 5' -TTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 940)

5' -UUUGCCCUGCGUGACCAGAUCCCgg-3' (SEQ ID NO: 287)
3' -AAA AACGGGACGCACUGGUCUAGUCCG-5' (SEQ ID NO: 614)

MYC-1719 Target: 5' -TTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 941)

5' -GCACUGGACCGCAUCUGGGACCAGAgt-3' (SEQ ID NO: 288)
3' -AAC GGGACGCAUGGCGUUGGGCCUCA-5' (SEQ ID NO: 615)

MYC-1720 Target: 5' -TTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 942)

5' -GCACUGGACCGCAUCUGGGACCAGAgt-3' (SEQ ID NO: 289)
3' -AAC GGGACGCAUGGCGUUGGGCCUCA-5' (SEQ ID NO: 616)

MYC-1721 Target: 5' -TGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 943)

5' -GCACUGGACCGCAUCUGGGACCAGAgt-3' (SEQ ID NO: 290)
3' -AAC GGGACGCAUGGCGUUGGGCCUCA-5' (SEQ ID NO: 617)
MYC-1856 Target: 5'-GCGGAAACGAGACGAGATCATGGAAC-3' (SEQ ID NO: 944)
5'-GAAACGACGAGAACAGUUGAAACac-3' (SEQ ID NO: 291)
3'-GGCUUUGUGCUGCUUCAGCAACUUGUG-5' (SEQ ID NO: 618)

MYC-1857 Target: 5'-CGGAAACGAGACGAGATCATGGAAC-3' (SEQ ID NO: 945)
5'-UUUCAACAGAUUUGUAUUUAAGAAtt-3' (SEQ ID NO: 292)
3'-GAUAUUGUCAAACAUAAUUCUUAAC-5' (SEQ ID NO: 619)

MYC-2115 Target: 5'-CTCTTAACAGATTTGATTTAAAGAATT-3' (SEQ ID NO: 946)
5'-UUUAACAGAUUUGUAUUUAAGAAUtg-3' (SEQ ID NO: 293)
3'-GAUAUUGUCAAACAUAAUUCUUAAC-5' (SEQ ID NO: 620)

MYC-2116 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 947)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 294)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 621)

MYC-2193 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 948)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 295)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 622)

MYC-2194 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 949)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 296)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 623)

MYC-2195 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 950)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 297)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 624)

MYC-2196 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 951)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 298)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 625)

MYC-2197 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 952)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 299)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 626)

MYC-2198 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 953)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 300)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 627)

MYC-2199 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 954)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 301)
3'-UUUAACAUUUAUUGAAAUUAUUUUGCAAA-5' (SEQ ID NO: 628)

MYC-2200 Target: 5'-TTAAATGTAAATAACTTTAATAAAACGT-3' (SEQ ID NO: 955)
5'-UGUUAAAUAACUUUAAUAAAACGUtt-3' (SEQ ID NO: 302)
3' -UUU AUUGAAAUUUUUGCAAAUACG- 5' (SEQ ID NO: 629)
MYC-2201 Target: 5' -AAATACTTTAATAAAACGTTTATAGC- 3' (SEQ ID NO: 956)
5' -UAACUUUAAACGUUUUAUGC- 3' (SEQ ID NO: 303)
3' -UUU AUUGAAAUUUUUGCAAAUACGU- 5' (SEQ ID NO: 630)
MYC-2202 Target: 5' -ATAACTTTAATAAAACGTTTATAGC- 3' (SEQ ID NO: 957)
5' -AACUUUAAACGUUUUAUGC- 3' (SEQ ID NO: 304)
3' -UUU AUUGAAAUUUUUGCAAAUACGU- 5' (SEQ ID NO: 631)
MYC-2203 Target: 5' -AAATACTTTAATAAAACGTTTATAGC- 3' (SEQ ID NO: 958)
5' -ACUUUAAACGUUUUAUGC- 3' (SEQ ID NO: 305)
3' -UUU AUUGAAAUUUUUGCAAAUACGU- 5' (SEQ ID NO: 632)
MYC-2204 Target: 5' -TAACUUAUAAAACGUUUAUAGC- 3' (SEQ ID NO: 959)
5' -CUUUAUAAAACGUUUAUAGC- 3' (SEQ ID NO: 306)
3' -UUU AUUGAAAUUUUUGCAAAUACGU- 5' (SEQ ID NO: 633)
MYC-2205 Target: 5' -AUCTTTAATAAAACGTTTATAGC- 3' (SEQ ID NO: 960)
5' -UUUUUAAGUGAAUUUUCUATT- 3' (SEQ ID NO: 307)
3' -CGA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 634)
MYC-2313 Target: 5' -GCTTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 961)
5' -UUUUUAAGUGAAUUUUCUATTg- 3' (SEQ ID NO: 308)
3' -GAA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 635)
MYC-2314 Target: 5' -CTTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 962)
5' -UUUUUAAGUGAAUUUUCUATTg- 3' (SEQ ID NO: 309)
3' -AAA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 636)
MYC-2315 Target: 5' -TTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 963)
5' -UUUUUAAGUGAAUUUUCUATTg- 3' (SEQ ID NO: 310)
3' -AAA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 637)
MYC-2316 Target: 5' -TTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 964)
5' -UUUUUAAGUGAAUUUUCUATTg- 3' (SEQ ID NO: 311)
3' -AAA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 638)
MYC-2317 Target: 5' -TTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 965)
5' -UUUUUAAGUGAAUUUUCUATTg- 3' (SEQ ID NO: 312)
3' -AAA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 639)
MYC-2318 Target: 5' -TTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 966)
5' -UUUUUAAGUGAAUUUUCUATTg- 3' (SEQ ID NO: 313)
3' -AAA AAAAUUCAACUAAAAAAGAUAA- 5' (SEQ ID NO: 640)
MYC-2319 Target: 5' -TTTTTAAAGTTGATTTTTCTATT- 3' (SEQ ID NO: 967)
5'-'AGUUGAUUUUUUUCUAUUGUUUUt-3' (SEQ ID NO: 314)
3'-'UUU CAACUAAAAGAUAACAAAAAU-5' (SEQ ID NO: 641)

Myc-2320 Target: 5'-'AAAGTTGATTTTTTCTATTGTTTTTA-3' (SEQ ID NO: 968)
5'-'GUUGAUUUUUUCUAUUGUUUU-ag-3' (SEQ ID NO: 315)
3'-'UUC AACUAAAAAGAUAACAAAAAC-5' (SEQ ID NO: 642)

Myc-2321 Target: 5'-'AAGTTGATTTTTTCTATTGTTTTTAG-3' (SEQ ID NO: 969)
5'-'UUGAUUUUUUCUAUUGUUUUAga-3' (SEQ ID NO: 316)
3'-'UCAC UAAAAAGAUAAC AAAAUCU-5' (SEQ ID NO: 643)

Myc-2322 Target: 5'-'AGTTGATTTTTCTATTGTTTTTAGA-3' (SEQ ID NO: 970)
5'-'UAUUUUCUAUUGUUUUAAGaa-3' (SEQ ID NO: 317)
3'-'CAAAAAAAAAAAAAAGAUAACAAAAAU-5' (SEQ ID NO: 644)

Myc-2323 Target: 5'-'TGATTTTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 971)
5'-'UUUUUUUCUAUUGUUUUUAGAAAaa-3' (SEQ ID NO: 318)
3'-'AAC UAAAAAGAUAACAAAAAUCUUU-5' (SEQ ID NO: 645)

Myc-2324 Target: 5'-'TGATTTTTTTCTATTGTTTTTAGAAAA-3' (SEQ ID NO: 972)
5'-'UUUUUUUCUAUUGUUUUUAGAAAAaa-3' (SEQ ID NO: 319)
3'-'ACUAAAAAAAAAGAUAACAAAAAAU-5' (SEQ ID NO: 646)

Myc-2325 Target: 5'-'TGATTTTTTTCTATTGTTTTTAGAAAAA-3' (SEQ ID NO: 973)
5'-'UUUUUCUAUUGUUUUUAGAAAAat-3' (SEQ ID NO: 320)
3'-'CUC AAAAAGAUAACAAAAAUCUUUUU-5' (SEQ ID NO: 647)

Myc-2326 Target: 5'-'TGATTTTTTTCTATTGTTTTTAGAAAAAA-3' (SEQ ID NO: 974)
5'-'UUUUUCUAUUGUUUUUAGAAAAaa-3' (SEQ ID NO: 321)
3'-'UAA AAAAAAGAUAACAAAAAUCUUUUU-5' (SEQ ID NO: 648)

Myc-2327 Target: 5'-'ATTTTTTCTATTGTTTTTAGAAAAAA-3' (SEQ ID NO: 975)
5'-'UUUUUCUAUUGUUUUUAGAAAAat-3' (SEQ ID NO: 322)
3'-'AAA AAAAAAGAUAACAAAAAUCUUUUU-5' (SEQ ID NO: 649)

Myc-2328 Target: 5'-'TTTTTTTCTATTGTTTTTAGAAAAAT-3' (SEQ ID NO: 976)
5'-'UUUUUCUAUUGUUUUUAGAAAAAta-3' (SEQ ID NO: 323)
3'-'AAA AAAAAAGAUAACAAAAAUCUUUUU-5' (SEQ ID NO: 650)

Myc-2329 Target: 5'-'TTTTTTTCTATTGTTTTTAGAAAAATA-3' (SEQ ID NO: 977)
5'-'UUUUUCUAUUGUUUUUAGAAAAAa-3' (SEQ ID NO: 324)
3'-'AAA AAAAAAGAUAACAAAAAUCUUUUU-5' (SEQ ID NO: 651)

Myc-2330 Target: 5'-'TTTTCTATTGTTTTTAGAAAAATAA-3' (SEQ ID NO: 978)
5'-'UUUUUCUAUUGUUUUUAGAAAAAa-3' (SEQ ID NO: 325)
3'-'AAA AAAAAAGAUAACAAAAAUCUUUUU-5' (SEQ ID NO: 652)

Myc-2331 Target: 5'-'TTTTCTATTGTTTTTAGAAAAATAAA-3' (SEQ ID NO: 979)
Table 3: Selected Human Anti-MYC DsiRNAs, Unmodified Duplexes (Asymmetries)

5′-UCUAUUGUUUUUAGAAAAAAUAAa-3′  (SEQ ID NO: 326)
3′-AAA GAUAACAAAAAUCUUUUUUAUUU-5′  (SEQ ID NO: 653)

MYC-2332 Target: 5′-TTTCTATTGTTTTTAGAAAAAATAAA-3′  (SEQ ID NO: 980)

5′-CUAUGUUUUUGAAAAAUAAat-3′  (SEQ ID NO: 327)
3′-AAGAUAACAAAAAUCUUUUUUAUUUA-5′  (SEQ ID NO: 654)

MYC-2333 Target: 5′-TTCTATTTTTTAGAAAAAATAAA-3′  (SEQ ID NO: 981)

5′-CGAGAAGGGCAGGGCUUCAGAGG-3′  (SEQ ID NO: 982)
3′-GAGCUCUUCGCUUCCCGAAGAGUCUCC-5′  (SEQ ID NO: 328)

MYC-94 Target: 5′-CTCGAGAAGGGCAGGGCTTCTCAGAGG-3′  (SEQ ID NO: 655)

5′-CCCGAAAUAGAUUGAGCGACAUCAUAA-5′  (SEQ ID NO: 330)

MYC-178 Target: 5′-GCCGACUCCAGAAACUUUGCCCAU-3′  (SEQ ID NO: 656)

5′-CCCUGCCGAUCCAGAAACUUUUGCCCAU-3′  (SEQ ID NO: 984)
3′-UUGGAACCGCCUGCCAGUUGGGAACUUAA-5′  (SEQ ID NO: 331)

MYC-365 Target: 5′-AACCCTTGGCGCATCCAGAAAACCTTGG-3′  (SEQ ID NO: 657)

5′-GCCCAAUCAGCAACUAAACUUGCCCAU-3′  (SEQ ID NO: 985)
3′-AACCGCUGAGGCUUUGGAAACCGGUA-5′  (SEQ ID NO: 332)

MYC-370 Target: 5′-TTGCGCGATCAGGAAACTTTGCCCCAT-3′  (SEQ ID NO: 658)

5′-UCCAGCAACUUUGCCAUACAGA-3′  (SEQ ID NO: 986)
3′-GUAGGGCUUUGGAACCGCUAGCCUG-5′  (SEQ ID NO: 333)

MYC-376 Target: 5′-CATCCAGGAACCTTGCCCATAGCAGC-3′  (SEQ ID NO: 659)

5′-GCCGGCAUUUCGCAUUCGGACAC-3′  (SEQ ID NO: 987)
3′-CCGCUGGGCAACCGGACACGUACAGAAG-5′  (SEQ ID NO: 334)

MYC-403 Target: 5′-GGGGGCGACTTTGGACCTGGAACCTTAC-3′  (SEQ ID NO: 660)

5′-ACUUUGCAGCAACUAACAAACACC-3′  (SEQ ID NO: 988)
3′-CGUGAAACCGGACGUAGGUGGUGG-5′  (SEQ ID NO: 335)

MYC-409 Target: 5′-GCACCTTGGCATGGAACCTTACAACACC-3′  (SEQ ID NO: 661)

5′-CUGGAAACUACAAACCCCCAGAAGC-3′  (SEQ ID NO: 989)
3′-GUAGCCACGGACACGUAGGUGGUGG-5′  (SEQ ID NO: 336)

MYC-417 Target: 5′-CATCGGAACTTTGACCTGGAACCTTAC-3′  (SEQ ID NO: 662)

5′-GCAGCGGUUAGACGCUGGAUUUU-3′  (SEQ ID NO: 990)
3′-AACGUCGACGAACUCGGAUCAA-5′  (SEQ ID NO: 337)

MYC-535 Target: 5′-TTGCGCAGCTTGGACCTGGAACCTTAC-3′  (SEQ ID NO: 663)
5' - GCUUAGACGCUGGAUUUUUCGGG - 3' (SEQ ID NO: 991)
3' - GAGCAAUUCGCACCUCUUUGAGCCC - 5' (SEQ ID NO: 337)

MYC-541 Target: 5' - CTGCTTAGACGGCTGGATTTTTTCCGGGG - 3' (SEQ ID NO: 664)
5' - CGCUGGAUUUUUCGGGUAGUGGUA - 3' (SEQ ID NO: 992)
3' - CUGGCCUCAUUUUAGGCCCCAUACCUC - 5' (SEQ ID NO: 338)

MYC-548 Target: 5' - GACGCTGGATTTTTTCCGGGTAGTGGA - 3' (SEQ ID NO: 665)
5' - GAUUUUUCCGGUAGUGGAACCC - 3' (SEQ ID NO: 993)
3' - ACCUAAAAGGCCCCAUACCUCUUUGG - 5' (SEQ ID NO: 339)

MYC-553 Target: 5' - TGGATTTTTTCCGGGTAGTGGAAAACC - 3' (SEQ ID NO: 666)
5' - CGGGUAGUGGAAAACCAGCAGCCUC - 3' (SEQ ID NO: 994)
3' - AAGGGUUCGACCUCUUUGGGUCCGAG - 5' (SEQ ID NO: 340)

MYC-562 Target: 5' - TCCCTCAACGTTAGCTTCACCAACAGGA - 3' (SEQ ID NO: 667)
5' - GUUAGCUUCACCAACAGGAACUAUG - 3' (SEQ ID NO: 995)
3' - TGGGGUUCGACCUCUUUGGGUCCGAG - 5' (SEQ ID NO: 341)

MYC-567 Target: 5' - ACGTTCACCATTCACCAACAGGA - 3' (SEQ ID NO: 668)
5' - UGUAGCUCUACCAACAGGAACUAUG - 3' (SEQ ID NO: 996)
3' - UGCGGCUUACCAACAGGAACUAUG - 5' (SEQ ID NO: 342)

MYC-601 Target: 5' - CCCTCAACGTTAGCTTCACCAACAGGA - 3' (SEQ ID NO: 669)
5' - GACUCGGUGCAGCCGUAUUUCUACU - 3' (SEQ ID NO: 997)
3' - UGCCGAGCAGCAGGCAUAAAGAUGA - 5' (SEQ ID NO: 343)

MYC-643 Target: 5' - ACGACTCGGGTGCAAGCCCGACTCT - 3' (SEQ ID NO: 670)
5' - GCAGCCGUAUUUCACUGCAAGCAGG - 3' (SEQ ID NO: 998)
3' - CAGCGCUGGCAUAAGAUGACCGCCUC - 5' (SEQ ID NO: 344)

MYC-651 Target: 5' - GTCCGAAGCCTTTTCTCTGCACCCGAGG - 3' (SEQ ID NO: 671)
5' - GAGGGAACUUCUACCCGAGGACG - 3' (SEQ ID NO: 999)
3' - UCCUCUCCUAUAGUGAUGGUCGUCGUCG - 5' (SEQ ID NO: 345)

MYC-676 Target: 5' - AGGAGGAGAACCTTCTACCCGAGCAGGC - 3' (SEQ ID NO: 672)
5' - GGAGAGGGAACUUCUACCCGAGGACG - 3' (SEQ ID NO: 1000)
3' - GUCGUCGCACCGACCUUAGGAAAGGGAAGG - 5' (SEQ ID NO: 347)

MYC-731 Target: 5' - AGGAGGAGAACCTTCTACCCGAGCAGGC - 3' (SEQ ID NO: 673)
5' - CGUUUGCGGUCACCCCUUUCUCCU - 3' (SEQ ID NO: 1001)
3' - AUGCAACGCGCAGGUAUGGAAAGGGAAGG - 5' (SEQ ID NO: 348)

MYC-816 Target: 5' - TACGTTGGCGTCACCCCTTCTCCTCCTT - 3' (SEQ ID NO: 674)
5' - ACAUGGUGAACCAGAUAUCUUGUG - 3' (SEQ ID NO: 1002)
3' - UCGUACACCUUUGGUCUCAAGUAGAC - 5' (SEQ ID NO: 349)

MYC-920 Target: 5' - AGACATGGTGAAACCAGATTCTCATCG - 3' (SEQ ID NO: 675)
5'-'CCGGACGACGAGACCUUCAUCAAAA-3' (SEQ ID NO: 1003)
3'-'UGGCCCUCUGUCCUGAGGAAGAAGUUU-5' (SEQ ID NO: 349)
MYC-949 Target: 5'-'ACCCGGACGAGACCTTCATCAAAA-3' (SEQ ID NO: 676)
3'-'UGCUCUGGAAGUAGUUUUGUAGUAGU-5' (SEQ ID NO: 350)
MYC-958 Target: 5'-'ACGAGACCTTCATCAAAAACATCATCA-3' (SEQ ID NO: 677)
5'-'AAAACAUCAUCAUCAAGUGUGCUACACG-3' (SEQ ID NO: 1005)
3'-'GAGACCUUCAUCAAAAACAUCAUCA-5' (SEQ ID NO: 351)
MYC-970 Target: 5'-'TCAAAAACATCATCATCCAGGACTGTA-3' (SEQ ID NO: 678)
5'-'GGACUGUAUGUGGAGCGGCUCUG-3' (SEQ ID NO: 1006)
3'-'GUCCUGACAUACACCUCGCCGAAGAC-5' (SEQ ID NO: 352)
MYC-987 Target: 5'-'CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 680)
5'-'GCCUGGUCCCUCCAGCUUGGAUCUGAGC-3' (SEQ ID NO: 1008)
3'-'GGUGGAGGUCGAACAUGGACGUCCUAG-5' (SEQ ID NO: 354)
MYC-1104 Target: 5'-'GTCTGCTCCACCTCCAGCTTGTACCTG-3' (SEQ ID NO: 681)
5'-'CAGCUUGUACCUGCAGGAUCUGAGC-3' (SEQ ID NO: 1009)
3'-'GCUGCUCCACCUCUCCAGCUUGUACCUG-5' (SEQ ID NO: 355)
MYC-1111 Target: 5'-'CCACCTCCAGCTTGTACCTGCAGGATC-3' (SEQ ID NO: 682)
5'-'AAGUCUGCCACCGCCUCGCAACUCCA-3' (SEQ ID NO: 1010)
3'-'GGUUGGAGCCAGGCCGAGGCGUUGGAGG-5' (SEQ ID NO: 356)
MYC-1116 Target: 5'-'TCCAGCTTGTTACCTGAGGATCTGAGC-3' (SEQ ID NO: 683)
5'-'CAGCGACUCUGAGAGGAACAAGA-3' (SEQ ID NO: 1011)
3'-'GCUUGACUGAGAGGACUCUCUUAGAGG-5' (SEQ ID NO: 357)
MYC-1210 Target: 5'-'CCAGGAGGAAACAAGAAGAUGAGGAAG-3' (SEQ ID NO: 684)
5'-'ACUCUGAGGAGAAACAAGAAGAUGAGGAAG-3' (SEQ ID NO: 1012)
3'-'GCGUGAGGAGAGGACUCUCUUAGGAGG-5' (SEQ ID NO: 358)
MYC-1340 Target: 5'-'CGACTCTGAGGAGGAACAAGAAGATGA-3' (SEQ ID NO: 685)
5'-'GGAGAGGAAACAAGAAGAUGAGGAAG-3' (SEQ ID NO: 1013)
3'-'GAGUCUGGCUCCUCUGUUACUCUCAUC-5' (SEQ ID NO: 359)
MYC-1346 Target: 5'-'CGACTCTGAGGAGGAACAAGAAGATGA-3' (SEQ ID NO: 685)
5'-'AACAAGAAGAUGAGGAAGAAUCGA-3' (SEQ ID NO: 1014)
3'-'CCUUGUCCUCUCCUCUUCUUGCUAGU-5' (SEQ ID NO: 360)
MYC-1358 Target: 5' -GGAACAAGAAGATGAGGAAGAAATCGA-3' (SEQ ID NO: 687)
5' -AAGAUGAGGAAGAAAUCGAUGUUGU-3' (SEQ ID NO: 1015)
3' -UCUUCACUCCUUCUUAGCUACCAA- 5' (SEQ ID NO: 361)
MYC-1364 Target: 5' -AGAAGATGAGGAAGAAATCGATGTTGTT-3' (SEQ ID NO: 688)
5' -AGGAAGAAAUCGAUGUUGUUCUGU-3' (SEQ ID NO: 1016)
3' -ACUCCUCCUUCUUAGCUACAAAGACA- 5' (SEQ ID NO: 362)
MYC-1370 Target: 5' -TGAGGAAGAAATCGATGTTGTTTCTGT-3' (SEQ ID NO: 689)
5' -AAAUCGAUGUUGUUUCUGUACAAA- 5' (SEQ ID NO: 1017)
3' -UCUUUAGCUACAAAGACACCUUUU- 5' (SEQ ID NO: 363)
MYC-1376 Target: 5' -AGAAATCGATGTTGTTTCTGTGGAAAA- 3' (SEQ ID NO: 1018)
5' -AUGUUGUUUCUGUGGAAAAGAGGCA- 3' (SEQ ID NO: 1019)
3' -GCUACAACAAAGACACCUUUUCUCCGU- 5' (SEQ ID NO: 364)
MYC-1401 Target: 5' -AAGGCGAGGCTCCTGGCAAAAGGTCA- 3' (SEQ ID NO: 692)
5' -GGGCUCCUGGCAAAAGGUCAGAGUC- 3' (SEQ ID NO: 1020)
3' -CGUCCGAGGACCGUUUUCCAGUCUCAG- 5' (SEQ ID NO: 366)
MYC-1406 Target: 5' -CGAGGCTCCTGGCAAAAGGTCA- 3' (SEQ ID NO: 693)
5' -CUUGGCAAAGGUGAGGACAGUGAU- 3' (SEQ ID NO: 1021)
3' -GGAGCCGUGUCCAGUCAGACCUA- 5' (SEQ ID NO: 367)
MYC-1411 Target: 5' -CTCCTGCGCCAAAAGGTTTCAGGTCTG-3' (SEQ ID NO: 694)
5' -CAAAAGGUCAGAGCUCCUUACC- 3' (SEQ ID NO: 1022)
3' -CGGUUUUCCGUCCUCCAGUCCUGGA- 5' (SEQ ID NO: 368)
MYC-1416 Target: 5' -GGGAAAGGCTCAGAGTCTGAGTC-3' (SEQ ID NO: 695)
5' -GUCGAGGCUCCAGACUCACUCCUCGC- 3' (SEQ ID NO: 1023)
3' -UUCCAGUCUGCUCCAGACUCUUGGAGCG- 5' (SEQ ID NO: 369)
MYC-1421 Target: 5' -AAGGTCAGAGTCTGAGTC-3' (SEQ ID NO: 696)
5' -GCAAACCTCCTCAGGCACGCTT-3' (SEQ ID NO: 1024)
3' -GCAGCAGGACUCAGAGGACAGAC- 5' (SEQ ID NO: 370)
MYC-1457 Target: 5' -CAGCAGGAGCCTCAGGCACGCT-3' (SEQ ID NO: 697)
5' -CCUCAGCAGGAGCCTGAGGAGACG- 3' (SEQ ID NO: 1025)
3' -GAGGAGUGGAGGUGACCCAGGAG- 5' (SEQ ID NO: 371)
MYC-1465 Target: 5' -CTCCTCAGGAGAACGCTGCTG-3' (SEQ ID NO: 698)
5' -CCUCAGCAGGAGCAGAAUCCCUG- 3' (SEQ ID NO: 1026)
3'-'GAGGGAGGUGAGCCUUCCUGAUAGGAC-5' (SEQ ID NO: 372)
MYC-1531 Target: 5'-'CTCCCTCCACTCGGAAGGACTATCCTG-3' (SEQ ID NO: 699)
5'-'CUCGAAAGGACUCCUGCUGCAA-3' (SEQ ID NO: 1027)
3'-'GUGAGCCUCUGCAGGACGCGGUU-5' (SEQ ID NO: 373)
MYC-1538 Target: 5'-'CACTGGAAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
5'-'AUCCUGCUGCCAAAGAGGGUCAAGUU-3' (SEQ ID NO: 1028)
3'-'GAUAGGACGCGGCUCUCUCUCAGUCAA-5' (SEQ ID NO: 374)
MYC-1550 Target: 5'-'CTATCCTGCTGCCAAGAGGGTCAAGTT-3' (SEQ ID NO: 701)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1555 Target: 5'-'CTGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1560 Target: 5'-'CTATCCTGCTGCCAAGAGGGTCAAGTT-3' (SEQ ID NO: 701)
5'-'GAUAGGACGCGACGGUUCUCCCAGUUCAA-5' (SEQ ID NO: 374)
MYC-1565 Target: 5'-'CTGGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1570 Target: 5'-'CTGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1575 Target: 5'-'CTATCCTGCTGCCAAGAGGGTCAAGTT-3' (SEQ ID NO: 701)
5'-'GAUAGGACGCGACGGUUCUCCCAGUUCAA-5' (SEQ ID NO: 374)
MYC-1580 Target: 5'-'CTGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1584 Target: 5'-'CTGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1593 Target: 5'-'CTATCCTGCTGCCAAGAGGGTCAAGTT-3' (SEQ ID NO: 701)
5'-'GAUAGGACGCGACGGUUCUCCCAGUUCAA-5' (SEQ ID NO: 374)
MYC-1599 Target: 5'-'CTGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-'CACTCGGAAGGACTATCCTGCTGCCA-3' (SEQ ID NO: 700)
3'-'GUGAGCCUUCCUGAUAGGACGACGGU-5' (SEQ ID NO: 372)
MYC-1634 Target: 5'-'CTGCTGCCAAGAGGGTCAAGTTGGACA-3' (SEQ ID NO: 702)
5'-GACACCGAGGAGAAUGUCAAGAGGC-3' (SEQ ID NO: 1038)
3'-GCCUGUUGGCUUUCUUACAGUUCUCCG-5' (SEQ ID NO: 384)
MYC-1639 Target: 5'-CGGACACCGAGGAGAATGTCAAGAGGC-3' (SEQ ID NO: 711)
5'-CAGAGGAGGAACGAGCUAAAACGGGA-3' (SEQ ID NO: 1039)
3'-CGGUCUCCUCAUCCUGAUAUUUGCCU-5' (SEQ ID NO: 385)
MYC-1687 Target: 5'-GCCAGAGGAGGAACGAGCTAAAACGGGA-3' (SEQ ID NO: 712)
5'-AGGAACGAGCUAAAACGGAGCUUUU-3' (SEQ ID NO: 1040)
3'-CCUCUUCGCUUUUUCUCUCGAAAA-5' (SEQ ID NO: 386)
MYC-1693 Target: 5'-GGAGGAACGAGCTAAAACGGAGCTTTT-3' (SEQ ID NO: 713)
3'-UUGCUCCGAAUCCUGCUGAAAAACGG-5' (SEQ ID NO: 387)
MYC-1698 Target: 5'-AAAAACGGAGCUUUUUUGCCUUGGCU-3' (SEQ ID NO: 1041)
3'-GAUUCUUGCUCAUUCCUGCUGAAAAACGG-5' (SEQ ID NO: 388)
MYC-1704 Target: 5'-CTAAACCGAGCCTTTTTTGCCCTGCGT-3' (SEQ ID NO: 715)
5'-GGAGCUUUUUUGCCCUGCGUGACCA-3' (SEQ ID NO: 1042)
3'-GGGCCUCAACCUUUUGUUACUUUUCCG-5' (SEQ ID NO: 389)
MYC-1709 Target: 5'-ACGGAGCCTTTTTGCCCCGCTTGTGACCA-3' (SEQ ID NO: 716)
5'-GACCAGUCCCGGAGUUGGAAAACA-3' (SEQ ID NO: 1044)
3'-CACUUGGCUAUGGCCCCUCAACCUUUUGU-5' (SEQ ID NO: 390)
MYC-1729 Target: 5'-GTGACCAGATCCCGGAGTTGGAAAACA-3' (SEQ ID NO: 717)
5'-GAUCCCGAGUUGGAAAACAUGAA-3' (SEQ ID NO: 1045)
3'-GUUCCAUCAAUUGGAGCAACUUGU-5' (SEQ ID NO: 391)
MYC-1734 Target: 5'-CAGATCCCGGAGTTGGAAAACAATGAA-3' (SEQ ID NO: 718)
5'-GGAGUUGGAAAACAAUGAAAAGGC-3' (SEQ ID NO: 1046)
3'-GGGCCACUUUUUGUUACUUACGCG-5' (SEQ ID NO: 392)
MYC-1739 Target: 5'-CCCGAGTGGAAAAAATGAAAAAGGC-3' (SEQ ID NO: 719)
5'-AGGUAGUUAUCCCUGUAAAGGCCAC-3' (SEQ ID NO: 1047)
3'-GUUCCACUAAUUGGAGCTUUGGUGUG-5' (SEQ ID NO: 393)
MYC-1769 Target: 5'-CAGGTAGTTATCCTTAAAAAAGCCACAGCAT-3' (SEQ ID NO: 720)
5'-GUUAUCCUUAAAAAGCCACAGCAU-3' (SEQ ID NO: 1048)
3'-AUCAAUAGGAAUUUUUCGUGUGUCA-5' (SEQ ID NO: 394)
MYC-1774 Target: 5'-TAGTTATCTTAAAAAGCCACAGCAT-3' (SEQ ID NO: 721)
5'-CCUUAAAAAGCCACAGCAUACUC-3' (SEQ ID NO: 1049)
3'-UAGGAAUUUUUCGUGUGUCAUGAG-5' (SEQ ID NO: 395)
MYC-1779 Target: 5'-ATCCTTAAAAAGCCACAGCATAC-3' (SEQ ID NO: 722)
MYC-1850 Target: 5' -CTTGTTGCGGAAACGACGAGAACAGTT-3'  (SEQ ID NO: 734)
5'-CGGAAACGACGAGAACAGUUGAAAC-3'  (SEQ ID NO: 1062)
3'-ACGCCUUUGCUUUGCUUUGAAUCUUG-5'  (SEQ ID NO: 408)

MYC-1855 Target: 5' -TGCGGAAACGACGAGAACAGTGTAAAC-3'  (SEQ ID NO: 735)
5'-AAACUUGGACGCUUACGGAACUCUU-3'  (SEQ ID NO: 1063)
3'-UGUUGAACCUGAUUGCCAGGAAAG-5'  (SEQ ID NO: 409)

MYC-1882 Target: 5' -ACAAACTGGAACGCTACGGAACTCTT-3'  (SEQ ID NO: 736)
5'-GAAACAGCUACGGAACUCUUGUGCGU-3'  (SEQ ID NO: 1064)
3'-AACUUGCAGAUUGCCAGAACCGCAUUC-5'  (SEQ ID NO: 410)

MYC-1888 Target: 5' -TGAAACGCTACGGAACGCTCTTGCTGTAAGGAGAAAAGTAA-3'  (SEQ ID NO: 737)
5'-GCUACGGAACUUGCGUUAAGGAAAG-3'  (SEQ ID NO: 1065)
3'-CGGAAACGCTACGGAACGCTCTTGCTGTAAGGAGAAAAGTAA-3'  (SEQ ID NO: 738)

MYC-1893 Target: 5' -GCUGGAAACGCGAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 739)
5'-AACUCUUUGGCUAAGGAAAAGGAUGGAAAAGTAA-3'  (SEQ ID NO: 1066)
3'-CCUGAAGCAACGCGAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 412)

MYC-1900 Target: 5' -GGAACTCTTGCTGTAAGGAAAGTAA-3'  (SEQ ID NO: 740)
5'-UGUUGCGGUAAGGAAAAGUAAGGAAAAGTAA-3'  (SEQ ID NO: 1067)
3'-GAACGGAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 413)

MYC-1906 Target: 5' -GUGGGAAGGUUGCCAGUUCAGUUGGAUGGAAAAGTAA-3'  (SEQ ID NO: 741)
5'-GUAAAGGAAAAGGAUGGAAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 1068)
3'-CGCAUUCUUCUUGCUUUGCUAA-5'  (SEQ ID NO: 414)

MYC-1911 Target: 5' -GGCGAAGGAAAAGGAUGGAAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 742)
5'-GUAAGGAAAACGAUUCUUCUACAGAAA-3'  (SEQ ID NO: 1069)
3'-UCAUUCUUCUUGCUUUGCUAAGAAGGUUGGAAAAGTAA-3'  (SEQ ID NO: 415)

MYC-1921 Target: 5' -AACTGGAACGCTACGGAACTCTT-3'  (SEQ ID NO: 743)
5'-GAAACGATTCCTTCTAACAGAAATGTCCT-3'  (SEQ ID NO: 1070)
3'-UCUUUGUUGCUAAGGAUGGAAAAGTAA-3'  (SEQ ID NO: 416)

MYC-1926 Target: 5' -AGAAGAACGATTCCTTCTAACAGAAATGTCCT-3'  (SEQ ID NO: 744)
5'-CAUCUUUGGCUAAGGAAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 1071)
3'-AGAAGAACGATTCCTTCTAACAGAAATGTCCT-3'  (SEQ ID NO: 417)

MYC-1931 Target: 5' -AGAAGAACGATTCCTTCTAACAGAAATGTCCT-3'  (SEQ ID NO: 745)
5'-UCUUUGGCUAAGGAAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 1072)
3'-AGAAGAACGATTCCTTCTAACAGAAATGTCCT-3'  (SEQ ID NO: 418)

MYC-1937 Target: 5' -ACUGGAAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 746)
5'-CAUGGAAAGGAAAGTAAGGAAAAGTAA-3'  (SEQ ID NO: 1073)
3'-'UUGUCUUUACAGGACUGUAGUGGAU-5' (SEQ ID NO: 419)
Myc-1944 Target: 5'-'AACAGAAATGTCCTGAGCAATCACCTA-3' (SEQ ID NO: 746)
5'-'CCUGGACCAUCUAGACAUGUGGCUU-3' (SEQ ID NO: 1074)
3'-'CAGGACUGUUAGUGGAUACUUGAACA-5' (SEQ ID NO: 420)
Myc-1956 Target: 5'-'GTGCTGAGCAATCACCTGAGGGAUACUUGAACA-3' (SEQ ID NO: 747)
5'-'CAAUACCCUAGACUUGUUGUUCAAA-3' (SEQ ID NO: 1075)
3'-'UGCUUAGUGGAUACUGAAACAAGUU-5' (SEQ ID NO: 421)
Myc-1959 Target: 5'-'AGCAATCACCTGAGGGAUACUUGAACA-3' (SEQ ID NO: 748)
5'-'CCUGAGCAAUCACCUAUGAACUUGU-3' (SEQ ID NO: 1076)
3'-'UCGUUAGUGGAUACUGAAACAAGUU-5' (SEQ ID NO: 422)
Myc-1965 Target: 5'-'CACCTATGAACTTGTTTCAGGGAUACUUGAACA-3' (SEQ ID NO: 749)
5'-'GTCCTGAGCAATCACCTATGAACTTG-3' (SEQ ID NO: 1077)
3'-'UCGUUAGUGGAUACUGAAACAAGUUGU-5' (SEQ ID NO: 423)
Myc-1970 Target: 5'-'ATGAATCTTGTTCAGGGAUACUUGAACA-3' (SEQ ID NO: 750)
5'-'GUUUAGGCAATGAACTTGTTTCAAATGCAAC-3' (SEQ ID NO: 1078)
3'-'AACAAAGUUGCAACUUGGGAU-5' (SEQ ID NO: 424)
Myc-1976 Target: 5'-'TTGTTTCAGGGAUACUUGAACA-3' (SEQ ID NO: 751)
5'-'AAAUGCAACUUGGGAU-5' (SEQ ID NO: 1079)
3'-'AGUCUUGGUUACUGUUGGUUACUGU-5' (SEQ ID NO: 425)
Myc-1981 Target: 5'-'TCAATGCAATGCAACCTCAGGGAUACUUGAACA-3' (SEQ ID NO: 752)
5'-'GACUAAUGGAACUUGGGAUCA-3' (SEQ ID NO: 1080)
3'-'UCGAUUGGUUACUGUUGGUUACUGU-5' (SEQ ID NO: 426)
Myc-1989 Target: 5'-'ATGATCAGGGAUACUUGAACA-3' (SEQ ID NO: 753)
5'-'AAUGCAACUUGGGAU-5' (SEQ ID NO: 1081)
3'-'GUUAGGUUGGAUUGGUUACGGAC-5' (SEQ ID NO: 427)
Myc-1994 Target: 5'-'GAACCCAAATGCAACCTCAGGGAUACGAC-3' (SEQ ID NO: 754)
5'-'CCUCACAACCCUUGGUGAGACGUUGAGU-3' (SEQ ID NO: 1082)
3'-'UGGUUGGUUGGAACCGACUCAGAACC-5' (SEQ ID NO: 428)
Myc-2001 Target: 5'-'AACCTCAGGGAUACGACACCUUGGAGACGUUGAGU-3' (SEQ ID NO: 755)
5'-'CCACCUUUGGCUUGAGCUUGGAGACGUUGU-3' (SEQ ID NO: 1083)
3'-'GGUGGUUGGAACCGACUCAGAACC-5' (SEQ ID NO: 429)
Myc-2006 Target: 5'-'ACAAACCTGAGTCTGCTGACGUUGAAGUU-3' (SEQ ID NO: 756)
5'-'GUGGACUGUUGGAGACGUUGAAGUU-3' (SEQ ID NO: 1084)
3'-'AUGGUGAAGGUUGGAGACGUUGAAGUU-5' (SEQ ID NO: 430)
Myc-2013 Target: 5'-'TTGCGTCTGCTGAGTCTGCTGACGUUGAAGUU-3' (SEQ ID NO: 757)
5′-GUCUUGAGACUGAAAGAUUUAGCCA-3′ (SEQ ID NO: 1085)
3′-CUCAGAACUCUUGAUUUACUAAUUGGU-5′ (SEQ ID NO: 431)

Myc-2019 Target: 5′-GAGTCTTGAGACTGAAAGATTTAGCCA-3′ (SEQ ID NO: 758)
5′-GACUGAAAGAUUUAGCCAUAUGUA-3′ (SEQ ID NO: 1086)
3′-CUCUGACUUUCUAUUAGGGAUUCAU-5′ (SEQ ID NO: 432)

Myc-2026 Target: 5′-GAGACTGAAAGATTTAGCCGATAATGTA-3′ (SEQ ID NO: 759)
5′-AAAGAUUUAGGCUUAAUGUAACUG-3′ (SEQ ID NO: 1087)
3′-ACUUUCUAAUUGCAUUAUGAC-5′ (SEQ ID NO: 433)

Myc-2031 Target: 5′-TGAAAGATTTAGCCGATAATGTAAACTG-3′ (SEQ ID NO: 760)
5′-GCCAUAAUUGGCAUUAUGGUAAUU-3′ (SEQ ID NO: 1088)
3′-AUCGGUAUAAUCAUUGACGUUUA-5′ (SEQ ID NO: 434)

Myc-2040 Target: 5′-TGATGAACTGCTCAATTGGAACCTTG-3′ (SEQ ID NO: 761)
5′-GUAAACUGCCUCUAUUGGACUUUG-3′ (SEQ ID NO: 1089)
3′-UAUCUUGAGCAGGUUAACUGCAAA-5′ (SEQ ID NO: 435)

Myc-2048 Target: 5′-ATGTAAACTGCTCAATTGGAACCTTG-3′ (SEQ ID NO: 762)
5′-UGCCUCUAUUGGACUUUGGGAUA-3′ (SEQ ID NO: 1090)
3′-UGACGGAGAAUAAACUGCAACG-5′ (SEQ ID NO: 436)

Myc-2054 Target: 5′-ACTGCTCAATTGGAACCTTG-3′ (SEQ ID NO: 763)
5′-CAAAUUGGACUUUGGGAUA-3′ (SEQ ID NO: 1091)
3′-AUCGGUAUAAUCAUUGACGUUUA-5′ (SEQ ID NO: 437)

Myc-2059 Target: 5′-CTCAATTGGAACCTTG-3′ (SEQ ID NO: 764)
5′-GACUUGGGAUAAAGAACUUUU-3′ (SEQ ID NO: 1092)
3′-ACCUGAAACCUGAUUUACUGAAAA-5′ (SEQ ID NO: 438)

Myc-2066 Target: 5′-TGAGCTTTGGGCAAAAAAGTAC-3′ (SEQ ID NO: 765)
5′-GGCAUAAAAGACUUUUUUGAC-3′ (SEQ ID NO: 1093)
3′-ACCCGUAUAAUUCUGAAAAAUACGAA-5′ (SEQ ID NO: 439)

Myc-2073 Target: 5′-TGCCGATAAAAGAACCTTGTGTAG-3′ (SEQ ID NO: 766)
5′-AAAGGACUUUUUAUGCCAUAA-3′ (SEQ ID NO: 1094)
3′-UAAUUCUGAAAAUAACGAAUGGA-5′ (SEQ ID NO: 440)

Myc-2078 Target: 5′-ATAAAAAGACCTTTTTATGCTTACCT-3′ (SEQ ID NO: 767)
5′-AACUUUUUUAUGCUUAAACCU-3′ (SEQ ID NO: 1095)
3′-UCCUGAAAACUAGCAAGUGGGS-5′ (SEQ ID NO: 441)

Myc-2083 Target: 5′-AGAACTTTTTTATGCTTACCT-3′ (SEQ ID NO: 768)
5′-UUAUUGCUUACCUUUUUUUCUU-3′ (SEQ ID NO: 1096)
3′-AAAAAAACGGAUUGGAGAA-5′ (SEQ ID NO: 442)

Myc-2089 Target: 5′-TTTTATGCTTACCTTTTTTTT-3′ (SEQ ID NO: 769)
5' -GCUUACCAUCUUUUUUUCUUUA-3'  (SEQ ID NO: 1097)
3' -UACGAUUGUUGAAGAAGAAAAAAGA-5'  (SEQ ID NO: 443)
MYC-2094 Target:  5' -ATGCTTACCATTCTTTTTTTTCTTTA-3'  (SEQ ID NO: 770)
5' -CCAUCCCCCCUUCCUUACAGA-3'  (SEQ ID NO: 1098)
3' -AUGUAGAAAAAGAAGAUUGCUU-5'  (SEQ ID NO: 444)
MYC-2099 Target:  5' -TACCATCTTTTTTTTCTTTAACAGA-3'  (SEQ ID NO: 771)
5' -UUUUUUUUUCUUUAACAGAUUU-3'  (SEQ ID NO: 1099)
3' -GAAAAAAAGAAGAAAUUGCUUU-5'  (SEQ ID NO: 445)
MYC-2105 Target:  5' -CTTTTTTTTTTCTTTAACAGA-3'  (SEQ ID NO: 772)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 446)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 447)
MYC-2109 Target:  5' -TTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 773)
5' -UUUUUACUAAAAAAGUAAAAGAA-3'  (SEQ ID NO: 1100)
3' -TTTTTTTTTTTCTTTAACAGA-5'  (SEQ ID NO: 448)
MYC-2110 Target:  5' -AAGAAAGUUGUUGAACAAAUUGCUU-3'  (SEQ ID NO: 774)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 449)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 450)
MYC-2112 Target:  5' -TTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 775)
5' -UUUUUACUAAAAAAGUAAAAGAA-3'  (SEQ ID NO: 1103)
3' -TTTTTTTTTTTCTTTAACAGA-5'  (SEQ ID NO: 451)
MYC-2114 Target:  5' -TTTTTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 776)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 1104)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 450)
MYC-2116 Target:  5' -TTTTTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 777)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 1105)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 451)
MYC-2117 Target:  5' -TTTTTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 778)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 1106)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 452)
MYC-2118 Target:  5' -TTTTTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 779)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 1107)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 453)
MYC-2119 Target:  5' -TTTTTTTTTTTCTTTAACAGAAT-3'  (SEQ ID NO: 780)
5' -UUUGGAAUGGUAGAAAAAAAAAUGA-3'  (SEQ ID NO: 1108)
3' -ACAGAAGUUGUUGAACAAAUUGCUUU-5'  (SEQ ID NO: 454)

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MYC-2207 Target: 5' -CTTTAATAAAACGTTTATAGCAGTTAC-3 ' (SEQ ID NO: 781)
5' -CAGAAUUUCAUCCUUAGUAUAGU-3 ' (SEQ ID NO: 1109)
3' -GGGCUCUUAAGGUACAUACUAUCA-5 ' (SEQ ID NO: 455)
MYC-2233 Target: 5' -CACAGAATTCTCAATCTCTTAGTATATGT-3 ' (SEQ ID NO: 782)
5' -CUAGUAUUAAGGUACUAUUAAACC-3 ' (SEQ ID NO: 1110)
3' -UGGACUCAUAUUAUCAUGAUUUUGG-5 ' (SEQ ID NO: 456)
MYC-2260 Target: 5' -ACCTAGTATTATAGGTACTATAAACCC-3 ' (SEQ ID NO: 783)
5' -UAUAGGUACUAUAAACCCUUAAUUU-3 ' (SEQ ID NO: 1111)
3' -UAUAAUCAUGAUUUGGAAUAAA-5 ' (SEQ ID NO: 458)
MYC-2267 Target: 5' -ATTATAGGTACTATAAACCCTAATTTT-3 ' (SEQ ID NO: 784)
5' -AACCCTAACCCUUAAUUUUUUUU-3 ' (SEQ ID NO: 1112)
3' -CAUGAUAUUUGGGAUUAAAAAAAAUAA-5 ' (SEQ ID NO: 459)
MYC-2274 Target: 5' -CACAGAATTCTCAATCTCTTAGTATATGT-3 ' (SEQ ID NO: 785)
5' -CUAGUAUUAAGGUACUAUUAAACC-3 ' (SEQ ID NO: 1113)
3' -UGGACUCAUAUUAUCAUGAUUUUGG-5 ' (SEQ ID NO: 459)
MYC-2260 Target: 5' -ACCTAGTATTATAGGTACTATAAACCC-3 ' (SEQ ID NO: 783)
5' -UAUAGGUACUAUAAACCCUUAAUUU-3 ' (SEQ ID NO: 1111)
3' -UAUAAUCAUGAUUUGGAAUAAA-5 ' (SEQ ID NO: 458)
MYC-2267 Target: 5' -ATTATAGGTACTATAAACCCTAATTTT-3 ' (SEQ ID NO: 784)
5' -AACCCTAACCCUUAAUUUUUUUU-3 ' (SEQ ID NO: 1112)
3' -CAUGAUAUUUGGGAUUAAAAAAAAUAA-5 ' (SEQ ID NO: 459)
MYC-2274 Target: 5' -CACAGAATTCTCAATCTCTTAGTATATGT-3 ' (SEQ ID NO: 785)
5' -CUAGUAUUAAGGUACUAUUAAACC-3 ' (SEQ ID NO: 1113)
3' -UGGACUCAUAUUAUCAUGAUUUUGG-5 ' (SEQ ID NO: 459)
MYC-2260 Target: 5' -ACCTAGTATTATAGGTACTATAAACCC-3 ' (SEQ ID NO: 783)
5' -UAUAGGUACUAUAAACCCUUAAUUU-3 ' (SEQ ID NO: 1111)
3' -UAUAAUCAUGAUUUGGAAUAAA-5 ' (SEQ ID NO: 458)
MYC-2267 Target: 5' -ATTATAGGTACTATAAACCCTAATTTT-3 ' (SEQ ID NO: 784)
5' -AACCCTAACCCUUAAUUUUUUUU-3 ' (SEQ ID NO: 1112)
3' -CAUGAUAUUUGGGAUUAAAAAAAAUAA-5 ' (SEQ ID NO: 459)
3' - ACAAAAAACUUUUUAUUUUAUGACC - 5' (SEQ ID NO: 466)

MYC-2339 Target: 5' - TGTTTTTAGAAAAAATAAAATACTGG - 3' (SEQ ID NO: 793)

3' - AAAAUAUAUAACUGCCAAAUA - 5' (SEQ ID NO: 1121)

MYC-2347 Target: 5' - GAAAAAATAAAATACTGGCAAAATATA - 3' (SEQ ID NO: 794)

3' - AAAAUACUGCCAAAUAUACUGAG - 5' (SEQ ID NO: 1122)

MYC-2355 Target: 5' - AAAATAACTGGCAAATATATCATTGAG - 3' (SEQ ID NO: 795)

3' - CGGUUUUAUAUUGACCGGUUUAUAU - 5' (SEQ ID NO: 467)

MYC-2364 Target: 5' - GCAAATATATCATTTAGCCCAAATCTT - 3' (SEQ ID NO: 796)

3' - AAUAACUGGCAAAUAUAUCAUUGAG - 5' (SEQ ID NO: 1123)

MYC-2371 Target: 5' - ATATCATTGAGCCCAAATCTTAAAAAAA - 3' (SEQ ID NO: 797)

3' - AACUCGGGUUAAAGAAAUUUGGCAUC - 5' (SEQ ID NO: 471)

MYC-2377 Target: 5' - TGAGCCAAAATCTTAAAAAAA - 3' (SEQ ID NO: 798)

3' - AUCGCGUUGACAAUUAAUAUUUU - 5' (SEQ ID NO: 472)

MYC-188 Target: 5' - TAACTCGCTGTAGTAATTCCAGCGAGA - 3' (SEQ ID NO: 799)

3' - UCACCGUGUAUUUCAUGCCGGAAGG - 5' (SEQ ID NO: 1124)

MYC-189 Target: 5' - AACTCGCTGTAGTAATTCCAGCGAGAG - 3' (SEQ ID NO: 800)

3' - UGCCCGUUGAAUUCAUGCGAGAGG - 5' (SEQ ID NO: 1125)

MYC-190 Target: 5' - ACTCGCTGTAGTAATTCCAGCGAGAG - 3' (SEQ ID NO: 801)

3' - GCGCUGACUUAUUGGUCGCUCUCU - 5' (SEQ ID NO: 473)

MYC-191 Target: 5' - CTGCGTCGTAGTAATTCCAGCGAGGC - 3' (SEQ ID NO: 802)

3' - GCUGUAUUUAUCCGAGCGAGG - 5' (SEQ ID NO: 1126)

MYC-192 Target: 5' - GCGTAACUAUUAUGGUCGCUCUCG - 3' (SEQ ID NO: 474)

3' - CGCGACAUUAUUAUCCGAGCGAGG - 5' (SEQ ID NO: 1127)

MYC-193 Target: 5' - CTGCTGTAATTCCAGCGAGGC - 3' (SEQ ID NO: 803)

3' - AGAGCGACAUUAUUAUCCGAGCGAGG - 5' (SEQ ID NO: 475)

MYC-194 Target: 5' - CGCTGTAATTCCAGCGAGGC - 3' (SEQ ID NO: 804)
5'-UGUAGUAUUUCGCAGGAGGCGA-3' (SEQ ID NO: 1132)
3'-CGAACAUUUGGCCGAGAGGCAGA-5' (SEQ ID NO: 478)
MYC-194 Target: 5'-GCTGTAGTGATACAGCGAGAGGCAGA-3' (SEQ ID NO: 805)
5'-GUAGUAAUCCAGCGAGAGGCAGAG-3' (SEQ ID NO: 1133)
3'-GACAUUAGGUCUCGUCUCGUUCGUCU-5' (SEQ ID NO: 479)
MYC-195 Target: 5'-CTGTAGTGATACAGCGAGAGGCAGG-3' (SEQ ID NO: 806)
5'-CUUCACCAACAGGACUUGACCUCU-3' (SEQ ID NO: 1134)
3'-UGCAAGUGGUUGUUCGUAUACUGGAG-5' (SEQ ID NO: 480)
MYC-612 Target: 5'-AGCTTCACCAACAGGAACTATGACCTC-3' (SEQ ID NO: 807)
5'-GCTGTAGTGATACAGCGAGAGGCAGAG-3' (SEQ ID NO: 1135)
3'-CGAACAUUUGGCCGAGAGGCAGA-5' (SEQ ID NO: 481)
MYC-613 Target: 5'-GCTGTAGTGATACAGCGAGAGGCAGG-3' (SEQ ID NO: 808)
5'-UCACCAACAGGACUUGACCUCUCC-3' (SEQ ID NO: 1136)
3'-GACAUUAGGUCUCGUCUCGUUCGUCU-5' (SEQ ID NO: 482)
MYC-614 Target: 5'-CTGTAGTGATACAGCGAGAGGCAGG-3' (SEQ ID NO: 809)
5'-CAACCAACAGGACUUGACCUCUGAC-3' (SEQ ID NO: 1137)
3'-AGGUGGUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 483)
MYC-615 Target: 5'-CTGTAGTGATACAGCGAGAGGCAGG-3' (SEQ ID NO: 810)
5'-CAACCAACAGGACUUGACCUCUGACU-3' (SEQ ID NO: 1138)
3'-AGGUGGUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 484)
MYC-616 Target: 5'-CTCAGACACAGGAACATATGACCTCGA-3' (SEQ ID NO: 811)
5'-CCACCAACAGGACUUGACCUCUGAC-3' (SEQ ID NO: 1139)
3'-GUUGGUUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 485)
MYC-617 Target: 5'-CCACCAACAGGAACATATGACCTCGA-3' (SEQ ID NO: 812)
5'-CAACCAACAGGACUUGACCUCUGAC-3' (SEQ ID NO: 1140)
3'-UGGUGGUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 486)
MYC-618 Target: 5'-ACACACAGGAACATATGACCTCGA-3' (SEQ ID NO: 813)
5'-AAGGCAACGAGGGAGCUGAC-3' (SEQ ID NO: 1141)
3'-GUUGGUUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 487)
MYC-619 Target: 5'-ACACACAGGAACATATGACCTCGA-3' (SEQ ID NO: 814)
5'-AGGCAACGAGGGAGCUGAC-3' (SEQ ID NO: 1142)
3'-GUUGGUUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 488)
MYC-620 Target: 5'-ACACACAGGAACATATGACCTCGA-3' (SEQ ID NO: 815)
5 '-CAACCAACAGGAACATATGACCTCGA-3' (SEQ ID NO: 816)
5'-CAACCAACAGGAACATATGACCTCGA-3' (SEQ ID NO: 816)
3'-GUUGGUUGCUUCAUACUGGAGGGCAG-5' (SEQ ID NO: 489)
MYC-621 Target: 5'-AAGGCAACGAGGGAGCUGAC-3' (SEQ ID NO: 816)
5' ' AGGAACUAUGACCACUCGACUACGACU-3 ' (SEQ ID NO: 1144)
3' ' UGCCUUUGAUAUCUGGACUGAUCGUG-5 ' (SEQ ID NO: 490)

MYC-622 Target: 5' ' ACAAAGGACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 817)
3' ' GGAACUAUGACCACUCGACUACGACU-5 ' (SEQ ID NO: 1145)
3' ' GCUCAUAUCGACUGAUCGACUAC-5 ' (SEQ ID NO: 491)

MYC-623 Target: 5' ' CAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 818)
3' ' AGGAACUAUGACCACUCGACUACGACU-5 ' (SEQ ID NO: 1146)
3' ' UCCUUGAUAUCUGGACUGAUCGUGAC-5 ' (SEQ ID NO: 492)

MYC-624 Target: 5' ' CAAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 819)
3' ' AACUUGACCACUCGACUACGACUAC-3 ' (SEQ ID NO: 1147)
3' ' CCUGAUAUCGACUGAUCGACUAC-5 ' (SEQ ID NO: 493)

MYC-625 Target: 5' ' CAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 820)
3' ' ACUUGACCACUCGACUACGACUAC-3 ' (SEQ ID NO: 1148)
3' ' CUGAUAUCGACUGAUCGACUAC-5 ' (SEQ ID NO: 494)

MYC-626 Target: 5' ' CAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 821)
3' ' AUUGACCACUCGACUACGACUAC-3 ' (SEQ ID NO: 1149)
3' ' UUGAUAUCGACUGAUCGACUAC-5 ' (SEQ ID NO: 495)

MYC-627 Target: 5' ' CAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 822)
3' ' UAUGACCACUCGACUACGACUAC-3 ' (SEQ ID NO: 1150)
3' ' UGAUAUCGACUGAUCGACUAC-5 ' (SEQ ID NO: 496)

MYC-628 Target: 5' ' CAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 823)
3' ' AUGACCACUCGACUACGACUAC-3 ' (SEQ ID NO: 1151)
3' ' GAUGACCACUCGACUACGACUAC-5 ' (SEQ ID NO: 497)

MYC-629 Target: 5' ' CAGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 824)
3' ' GAUGACCACUCGACUACGACUAC-3 ' (SEQ ID NO: 1152)
3' ' CCGAUAUCGACUGAUAUCGACUAC-5 ' (SEQ ID NO: 498)

MYC-733 Target: 5' ' AGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 825)
3' ' AGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 1153)
3' ' GCUGAUAUCGACUGAUAUCGACUAC-5 ' (SEQ ID NO: 499)

MYC-734 Target: 5' ' AGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 826)
3' ' AGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 1154)
3' ' CGAUAUCGACUGAUAUCGACUAC-5 ' (SEQ ID NO: 500)

MYC-735 Target: 5' ' AGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 827)
3' ' AGGAACATGACTGGCAGACTGCT-3 ' (SEQ ID NO: 1155)
3' ' UGGACUGGACUGAUAUCGACUAC-5 ' (SEQ ID NO: 501)
MYC-736 Target: 5'-AGGATATCTGGAAAGAAATTGAGCTGC-3' (SEQ ID NO: 828)
3'-CCUAUAGACCUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 502)
MYC-737 Target: 5'-GGATATCTGGAAAGAAATTGAGCTGC-3' (SEQ ID NO: 829)
5'-UAUCUGGAAGAAAUAUCGACGCUGCU-3' (SEQ ID NO: 1157)
3'-CUUAGACCUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 503)
MYC-738 Target: 5'-GATATCTGGAAATTGAGCTGC-3' (SEQ ID NO: 830)
5'-UAUCUGGAAGAAAUAUCGACGCUGCU-3' (SEQ ID NO: 1158)
3'-CUUAGACCUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 504)
MYC-739 Target: 5'-ATATCTGGAAATTGAGCTGC-3' (SEQ ID NO: 831)
5'-UCUGGAAGAAAUAUCGACGCUGCU-3' (SEQ ID NO: 1159)
3'-UAUAAGCCUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 505)
MYC-740 Target: 5'-TATCTGGAAATTGAGCTGC-3' (SEQ ID NO: 832)
5'-CUGGAAGAAAUAUCGACGCUGCU-3' (SEQ ID NO: 1160)
3'-UAUAAGCCUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 506)
MYC-741 Target: 5'-ATCTGGAAATTGAGCTGC-3' (SEQ ID NO: 833)
5'-UGGAAAGAAAUAUCGACGCUGCU-3' (SEQ ID NO: 1161)
3'-AGACCUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 507)
MYC-742 Target: 5'-TCTGGAAATTGAGCTGC-3' (SEQ ID NO: 834)
5'-GAAGAAAAUAUCGACGCUGCU-3' (SEQ ID NO: 1162)
3'-GACCUUCUUGUAAGCCUCAGGA-5' (SEQ ID NO: 508)
MYC-743 Target: 5'-TGAGAAATTGAGCTGC-3' (SEQ ID NO: 835)
5'-AGGCCGCCUCGCGGCCUCUCGCGC-3' (SEQ ID NO: 1163)
3'-GACUCCGCCGCCUUGCAGACGAGG-5' (SEQ ID NO: 509)
MYC-744 Target: 5'-CGGCCGCTCGCTCGC-3' (SEQ ID NO: 836)
5'-GCCGCCGCTCGCTCGC-3' (SEQ ID NO: 1164)
3'-GCCGCCGCTCGCTCGC-5' (SEQ ID NO: 510)
MYC-745 Target: 5'-TAGCCGCCCTCGC-3' (SEQ ID NO: 837)
5'-CGGCCGCCCTCGC-3' (SEQ ID NO: 1165)
3'-CGGCCGCCCTCGC-5' (SEQ ID NO: 511)
MYC-746 Target: 5'-AGCCGCCCTCGC-3' (SEQ ID NO: 838)
5'-CGGCCGCCCTCGC-3' (SEQ ID NO: 1166)
3'-CGGCCGCCCTCGC-5' (SEQ ID NO: 512)
MYC-747 Target: 5'-GCCGCCCTCGGCTGCTCGC-3' (SEQ ID NO: 839)
5'-GCCGCCCTCGGCTGCTCGC-3' (SEQ ID NO: 1167)
3'-GGCGGCGAGGCCCGAGACGAGCGGGAG-5' (SEQ ID NO: 513)
MYC-788 Target: 5'-CCGCCGCTCGGGCTCTGCTGCTGCCCTC-3' (SEQ ID NO: 840)
5'-GAGGAGACAUGGUAACCATCGAGUUU-3' (SEQ ID NO: 1168)
3'-ACCCUCCUCUGUACCACUUGGUCUCAA- 5' (SEQ ID NO: 514)
MYC-913 Target: 5'-TGGGAGGAGACATGGTGAACCAGAGTTT-3' (SEQ ID NO: 841)
5'-GAGGAGACAUGGUAACCATCGAGUUU-3' (SEQ ID NO: 1169)
3'-CCCUCCUCUGUACCACUUGGUCUCAA-5' (SEQ ID NO: 515)
MYC-914 Target: 5'-GGGAGGAGACATGGTGAACCAGAGTTT-3' (SEQ ID NO: 842)
5'-AGGAGACAUGGUAACCATCGAGUUU-3' (SEQ ID NO: 1170)
3'-CCUCUCCUCUGUACCACUUGGUCUAAAG-5' (SEQ ID NO: 516)
MYC-915 Target: 5'-GGAGAGACATGGTGAACCAGAGTTT-3' (SEQ ID NO: 843)
5'-GGAGACAGUGGUAACCATCGAGUUU-3' (SEQ ID NO: 1171)
3'-CCUCUCCUCUGUACCACUUGGUCUAAAG-5' (SEQ ID NO: 517)
MYC-916 Target: 5'-GGAGAGACATGGTGACCCAGAGTTTCA-3' (SEQ ID NO: 844)
5'-GGAGACAGUGGUAACCATCGAGUUU-3' (SEQ ID NO: 1172)
3'-CCUCUCCUCUGUACCACUUGGUCUAAAGUA-5' (SEQ ID NO: 518)
MYC-917 Target: 5'-GGGAGGAGACATGGTGAACCAGAGTTTCA-3' (SEQ ID NO: 845)
5'-GAGCAGCGACCUUCAUCAAAAACAC-3' (SEQ ID NO: 1173)
3'-CCGUCGUGCUCUGGAGUUUGGUGUGUUAU-5' (SEQ ID NO: 519)
MYC-952 Target: 5'-GGGAGGAGACATGGTGAACCAGAGTTTCA-3' (SEQ ID NO: 846)
5'-AGGACGAGAGGACACCTTCACAAAAACAC-3' (SEQ ID NO: 1174)
3'-CCCUCUCUCUGUACCACUUGGUCUAAAGUA-5' (SEQ ID NO: 520)
MYC-953 Target: 5'-GGCAGAGGACACCTTCAACAAAACAC-3' (SEQ ID NO: 1175)
3'-UUUUUGAGUAGUAGGUCUACAAACA-5' (SEQ ID NO: 521)
MYC-973 Target: 5'-AAAAACATCATATCCAGAGACTGTATGT-3' (SEQ ID NO: 848)
5'-GAGCAGAGACCUUCAUCAAAAACAC-3' (SEQ ID NO: 1176)
3'-UUUUGAGUAGUAGGUCUACAAACA-5' (SEQ ID NO: 522)
MYC-974 Target: 5'-AAAAACATCATATCCAGAGACTGTATGT-3' (SEQ ID NO: 849)
5'-GAGCAGAGACCUUCAUCAAAAACAC-3' (SEQ ID NO: 1177)
3'-UUUUGAGUAGUAGGUCUACCAUACAC-5' (SEQ ID NO: 523)
MYC-975 Target: 5'-AAAAACATCATATCCAGAGACTGTATGT-3' (SEQ ID NO: 850)
5'-GAGCAGAGACCUUCAUCAAAAACAC-3' (SEQ ID NO: 1178)
3'-UUUUGAGUAGUAGGUCUACCAUACAC-5' (SEQ ID NO: 524)
MYC-976 Target: 5'-AAAAACATCATATCCAGAGACTGTATGT-3' (SEQ ID NO: 851)
5'-UCAUCAUCCAGGACUGUAUGUGGAG-3' (SEQ ID NO: 1179)
3'-GUAGUAGUAGCGACAUACACCCG-5' (SEQ ID NO: 525)

MYC-977 Target: 5'-CATCATCATCCAGGACTGTATGTGGAG-3' (SEQ ID NO: 852)

5'-CAUCAUCCAGGACUGUAUGUGGAG-3' (SEQ ID NO: 1180)
3'-UAGUAGUAGCGACAUACACCCG-5' (SEQ ID NO: 526)

MYC-978 Target: 5'-ATCATCATCCAGGACTGTATGTGGAG-3' (SEQ ID NO: 853)

5'-AUCAUCCAGGACUGUAUGUGGAGC-3' (SEQ ID NO: 1181)
3'-AGUAGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 527)

MYC-979 Target: 5'-TCATCATCCAGGACTGTATGTGGAG-3' (SEQ ID NO: 854)

5'-UCAUCCAGGACUGUAUGUGGAGCG-3' (SEQ ID NO: 1182)
3'-GUAGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 528)

MYC-980 Target: 5'-CATCATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 855)

5'-AUCCAGGACUGUAUGUGGAGCGG-3' (SEQ ID NO: 1183)
3'-AGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 529)

MYC-981 Target: 5'-TCATCCAGGACTGTATGTGGAGCGGCT-3' (SEQ ID NO: 856)

5'-UCAGGACUGUAUGUGGAGCGGCU-3' (SEQ ID NO: 1184)
3'-GUAGGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 530)

MYC-982 Target: 5'-TCATCCAGGACTGTATGTGGAGCGGCTC-3' (SEQ ID NO: 857)

5'-UCAGGACUGUAUGUGGAGCGGCU-3' (SEQ ID NO: 1185)
3'-GUAGGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 531)

MYC-983 Target: 5'-CATCCAGGACTGTATGTGGAGCGGCTT-3' (SEQ ID NO: 858)

5'-CCAGGACUGUAUGUGGAGCGGCU-3' (SEQ ID NO: 1186)
3'-UAAGGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 532)

MYC-984 Target: 5'-ATCCAGGACTGTATGTGGAGCGGCTC-3' (SEQ ID NO: 859)

5'-CCAGGACUGUAUGUGGAGCGGCU-3' (SEQ ID NO: 1187)
3'-AGUAGGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 533)

MYC-985 Target: 5'-TCAGGACTGTATGTGGAGCGGCTTCT-3' (SEQ ID NO: 860)

5'-AGGACUUGAUGUGGAGCGGCU-3' (SEQ ID NO: 1188)
3'-GUAGGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 534)

MYC-986 Target: 5'-CCAGGACTGTATGTGGAGCGGCTTCTC-3' (SEQ ID NO: 861)

5'-AGGAACUGCUAGGCUACCGAGCGAC-3' (SEQ ID NO: 1189)
3'-GUAGGUAGGUAGGUAGCGACAUACCCG-5' (SEQ ID NO: 535)

MYC-1033 Target: 5'-CACAGAAGCTGCGCTCCTACCAGGCTG-3' (SEQ ID NO: 862)

5'-AGAAGCUGCUAGGCUACCGAGCGAC-3' (SEQ ID NO: 1190)
3'-UCUCUCUCUGACGGAGGAAGGUAGCGAC-5' (SEQ ID NO: 536)

MYC-1034 Target: 5'-AGAGAAGCTGCGCTCCTACCAGGCTG-3' (SEQ ID NO: 863)
5'-GAAGCUGGCCUCCUACCAGGCUGCG-3' (SEQ ID NO: 1191)
3'-CUCUUGCACCGAAGAUGUCCGACG-5' (SEQ ID NO: 537)
MYC-1035 Target: 5'-GAAGAAGCTGCTCTCCTACCCAGGTGC-3' (SEQ ID NO: 864)
5'-AACUGGGCCUCCUACCAGGCUGCGC-3' (SEQ ID NO: 1192)
3'-UCUUCCACCAAGUAGUCCGACGCG-5' (SEQ ID NO: 538)
MYC-1036 Target: 5'-AGAAGCTGCTCCTTACCCAGGTGCCG-3' (SEQ ID NO: 865)
5'-AGCUGGCCUCCUACCAGGCUGCG-3' (SEQ ID NO: 864)
3'-UCUUGCACCGAAGAUGUCCGACGCG-5' (SEQ ID NO: 538)
MYC-1037 Target: 5'-AGAAGCTGCTCCCTACCCAGGTGCCG-3' (SEQ ID NO: 865)
5'-GCUGGCCUCCUACCAGGCUGCG-3' (SEQ ID NO: 1193)
3'-UCUUGCACCGAAGAUGUCCGACGCG-5' (SEQ ID NO: 539)
MYC-1038 Target: 5'-AGAAGCTGCTCCCTACCCAGGTGC-3' (SEQ ID NO: 865)
5'-GGCCUCCUACCAGGCUGCGCA-3' (SEQ ID NO: 864)
3'-CGGAGGAUGUCCGACGCGCGU-5' (SEQ ID NO: 540)
MYC-1039 Target: 5'-AGAAGCTGCTCCCTACCCAGGTGCCG-3' (SEQ ID NO: 865)
5'-UGGCCUCCUACCAGGCUGCGCA-3' (SEQ ID NO: 1194)
3'-CGGAGGAUGUCCGACGCGCG-5' (SEQ ID NO: 541)
MYC-1040 Target: 5'-AGAAGCTGCTCCTACCCAGGTGCCG-3' (SEQ ID NO: 865)
5'-GGCCUCCUACCAGGCUGCGCA-3' (SEQ ID NO: 1196)
3'-CGGAGGAUGUCCGACGCGUGU-5' (SEQ ID NO: 542)
MYC-1041 Target: 5'-AGAAGCTGCTCCTACCCAGGTGCCG-3' (SEQ ID NO: 865)
5'-UGGCCUCCUACCAGGCUGCGCA-3' (SEQ ID NO: 1196)
3'-CGGAGGAUGUCCGACGCGUGU-5' (SEQ ID NO: 543)
MYC-1042 Target: 5'-AGAAGCTGCTCCTACCCAGGTGC-3' (SEQ ID NO: 865)
5'-CGGAGGAUGUCCGACGCGUGU-5' (SEQ ID NO: 544)
MYC-1043 Target: 5'-AGAAGCTGCTCCTACCCAGGTGC-3' (SEQ ID NO: 865)
5'-CGGAGGAUGUCCGACGCGUGU-5' (SEQ ID NO: 545)
MYC-1044 Target: 5'-AGAAGCTGCTCCTACCCAGGTGC-3' (SEQ ID NO: 865)
5'-UCCCACACCGCGCCCGCAAAGA-3' (SEQ ID NO: 1200)
3'-CGGAGGAUGUCCGACGCGCGU-5' (SEQ ID NO: 546)
MYC-1045 Target: 5'-AGAAGCTGCTCCTACCCAGGTGC-3' (SEQ ID NO: 865)
5'-UCCCCACACCGCGCCCGCAAAGA-3' (SEQ ID NO: 1201)
3'-GGAUGUCCGACGCGCGU-5' (SEQ ID NO: 547)
MYC-1046 Target: 5'-AGAAGCTGCTCCTACCCAGGTGC-3' (SEQ ID NO: 865)
5'-CCUCCACACCGCGCCCGCAAAGA-3' (SEQ ID NO: 1202)
3'-GGAUGUCCGACGCGCGU-5' (SEQ ID NO: 548)

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MYC-1046 Target: 5' -CTCCTACCAGGCTGCGCGCAAAGACAG-3 ' (SEQ ID NO: 875)
5' -CUACCAGGCGCGCGCGGAAGACAG-3 ' (SEQ ID NO: 1203)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 549)

MYC-1047 Target: 5' -TCTCACGGCTGCGCGCGGAAGACAGC-3 ' (SEQ ID NO: 876)
5' -UACCCAGGCGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1204)
3' -GAUGGCGCGCGCGCGCUUCUGCUGC - 5 ' (SEQ ID NO: 550)

MYC-1048 Target: 5' -CTCCTACCAGGCTGCGCGCAAAGACAGC-3 ' (SEQ ID NO: 877)
5' -ACCAGGCGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1205)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 551)

MYC-1049 Target: 5' -CTACCAAGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 878)
5' -ACCAGGCGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1206)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 552)

MYC-1050 Target: 5' -TACCAAGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 879)
5' -CAGGCGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1207)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 553)

MYC-1051 Target: 5' -ACCAGGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 880)
5' -AGGCUGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1208)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 554)

MYC-1052 Target: 5' -CCAGGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 881)
5' -CCAGGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1209)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 555)

MYC-1053 Target: 5' -CCAGGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 882)
5' -CCAGGCTGCGCGCGGAAGACACGC-3 ' (SEQ ID NO: 1210)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 556)

MYC-1096 Target: 5' -GCCACAGCGTCTGCTCCACCTCCAGCT-3 ' (SEQ ID NO: 883)
5' -GCCACAGCGTCTGCTCCACCTCCAGCT-3 ' (SEQ ID NO: 1211)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 557)

MYC-1097 Target: 5' -CCACAGCCGTCGCTGACCTCCACCTCCAGCT-3 ' (SEQ ID NO: 884)
5' -CCACAGCCGTCGCTGACCTCCACCTCCAGCT-3 ' (SEQ ID NO: 1212)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 558)

MYC-1098 Target: 5' -CCACAGCCGTCGCTGACCTCCACCTCCAGCT-3 ' (SEQ ID NO: 885)
5' -CCACAGCCGTCGCTGACCTCCACCTCCAGCT-3 ' (SEQ ID NO: 1213)
3' -AGGAUGGCGCGCGCGCGCUUCUGCUG - 5 ' (SEQ ID NO: 559)

MYC-1099 Target: 5' -CCACAGCCGTCGCTGACCTCCACCTCCAGCT-3 ' (SEQ ID NO: 886)
5' -CCACAGCCGTCGCTGACCTCCACCTCCAGCT-3 ' (SEQ ID NO: 1214)
3\'-GUCGCAGACGAGGUGGAGGUCGAACAU-5' (SEQ ID NO: 560)
MYC-1100 Target: 5\'-CAGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 887)
5\'-CGUCUGCUCCACCUCCAGCUUGUAC-3' (SEQ ID NO: 1215)
3\'-UCGCAGACGAGGUGGAGGUCGAACAU-5' (SEQ ID NO: 561)
MYC-1101 Target: 5\'-AGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 888)
5\'-CUCAACGACAGCAGCUCCAGCUUGUAC-3' (SEQ ID NO: 1216)
3\'-GAGAGUUGCUGUCGUCGAGCGGGUUCA-5' (SEQ ID NO: 562)
MYC-1189 Target: 5\'-CAGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 887)
5\'-CGUCUGCUCCACCUCCAGCUUGUAC-3' (SEQ ID NO: 1215)
3\'-UCGCAGACGAGGUGGAGGUCGAACAU-5' (SEQ ID NO: 561)
MYC-1190 Target: 5\'-AGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 888)
5\'-CUCAACGACAGCAGCUCCAGCUUGUAC-3' (SEQ ID NO: 1216)
3\'-GAGAGUUGCUGUCGUCGAGCGGGUUCA-5' (SEQ ID NO: 562)
MYC-1191 Target: 5\'-CAGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 887)
5\'-CGUCUGCUCCACCUCCAGCUUGUAC-3' (SEQ ID NO: 1215)
3\'-UCGCAGACGAGGUGGAGGUCGAACAU-5' (SEQ ID NO: 561)
MYC-1192 Target: 5\'-AGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 888)
5\'-CUCAACGACAGCAGCUCCAGCUUGUAC-3' (SEQ ID NO: 1216)
3\'-GAGAGUUGCUGUCGUCGAGCGGGUUCA-5' (SEQ ID NO: 562)
MYC-1193 Target: 5\'-CAGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 887)
5\'-CGUCUGCUCCACCUCCAGCUUGUAC-3' (SEQ ID NO: 1215)
3\'-UCGCAGACGAGGUGGAGGUCGAACAU-5' (SEQ ID NO: 561)
5'-'GGAGACACCGCCCACCACCAGCAGC-3' (SEQ ID NO: 1226)
3'-'CUCUCUCUGGGGGUGGGUGGUGGUGG-5' (SEQ ID NO: 572)

MYC-1320 Target: 5'-'GAGGAGACACCGCCCACCACCAGCAGC-3' (SEQ ID NO: 899)
5'-'GAGACACCGCCCACCACCAGCAGCG-3' (SEQ ID NO: 1227)
3'-'UCCUCUCUGGGGGUGGGUGGUGGUGGC-5' (SEQ ID NO: 573)

MYC-1321 Target: 5'-'AGGAGACACCGCCCACCACCAGCAGCG-3' (SEQ ID NO: 900)
5'-'AGACACCGCCCACCACCAGCAGCGA-3' (SEQ ID NO: 1228)
3'-'CCUCUCUGGGGGUGGGUGGUGGUCGCU-5' (SEQ ID NO: 574)

MYC-1322 Target: 5'-'GGAGACACCGCCCACCACCAGCAGCGA-3' (SEQ ID NO: 901)
5'-'GACACCGCCCACCACCAGCAGCGAC-3' (SEQ ID NO: 1229)
3'-'CUCUGGGCCGGGGUGGGUGGUCGUCG-5' (SEQ ID NO: 575)

MYC-1323 Target: 5'-'GAGACACCGCCCACCACCAGCAGCGACT-3' (SEQ ID NO: 902)
5'-'CAACCGCCCACCACCAGCAGCGACUC-3' (SEQ ID NO: 1230)
3'-'UCUGGGCCGGGGUGGGUGGUCGUCGUGA-5' (SEQ ID NO: 576)

MYC-1324 Target: 5'-'AGACACCGCCCACCACCAGCAGCGACUC-3' (SEQ ID NO: 903)
5'-'ACACCGCCCACCACCAGCAGCGACUCUC-3' (SEQ ID NO: 1231)
3'-'UCUGGGGCGGGGGUGGGUGGUCGUCGUGA-5' (SEQ ID NO: 577)

MYC-1325 Target: 5'-'ACACCGCCCACCACCAGCAGCGACUCGACT-3' (SEQ ID NO: 904)
5'-'ACACCGCCCACCACCAGCAGCGACUCUCU-3' (SEQ ID NO: 1232)
3'-'UGGGCGGGGGGGUGGGUGGUCGUCGAGA-5' (SEQ ID NO: 578)

MYC-1326 Target: 5'-'ACACCGCCCACCACCAGCAGCGACUCGACTCT-3' (SEQ ID NO: 905)
5'-'CCGCCACCACCCACCGACGACUCUUG-3' (SEQ ID NO: 1233)
3'-'UGGGCGGGGGGGUGGGUGGUCGUCGAGAC-5' (SEQ ID NO: 579)

MYC-1327 Target: 5'-'CCGCCACCACCCACCGACGACUCUGA-3' (SEQ ID NO: 906)
5'-'CCGCCACCACCCACCGACGACUCUGA-3' (SEQ ID NO: 1234)
3'-'UGGGCGGGGGGGUGGGUGGUCGUCGAGACU-5' (SEQ ID NO: 580)

MYC-1328 Target: 5'-'ACCGCCCACCACACCGAGCGACTCTGA-3' (SEQ ID NO: 907)
5'-'GCCACCACCAAGCGACGACUGAG-3' (SEQ ID NO: 1235)
3'-'GGGGCGGGGGGGUGGGUGGUCGUCGAGACUC-5' (SEQ ID NO: 581)

MYC-1329 Target: 5'-'CCGCCACCACCCACCGACGACTCTGA-3' (SEQ ID NO: 908)
5'-'CCGCCACCACCCACCGACGACUCCUGG-3' (SEQ ID NO: 1236)
3'-'GCGGGCGGGGGGGUGGGUGGUCGUCGAGACUC-5' (SEQ ID NO: 582)

MYC-1330 Target: 5'-'CCGCCACCACCCACCGACGACTCTGA-3' (SEQ ID NO: 909)
5'-'CCGCCACCACCCACCGACGACUCCUGG-3' (SEQ ID NO: 1237)
3'-'CGGGCGGGGGGGUGGGUGGUCGUCGAGACUCU-5' (SEQ ID NO: 583)

MYC-1331 Target: 5'-'GCCACCACCCACCGAGCGACTCTGA-3' (SEQ ID NO: 910)
5' -CACCACCAGCAGCGACUCUGAGGAG-3' (SEQ ID NO: 1238)
3' -GGUGUGUGUGUGUGUCAGACAGUCUCUC-5' (SEQ ID NO: 584)

MYC-1332 Target: 5' -CCCACCACCAGCAGCGACUCUGAGGAG-3' (SEQ ID NO: 911)
5' -ACCACCAGCAGCGACUCUGAGGAGG-3' (SEQ ID NO: 1239)
3' -GUGUGUGUGUGUGUGAGACCUCCUC-5' (SEQ ID NO: 585)

MYC-1333 Target: 5' -CCACCCACCAGCAGCGACTCTGAGGAG-3' (SEQ ID NO: 912)
5' -CAAGAAGAUGAGGAAGAAAUCGAUG-3' (SEQ ID NO: 1240)
3' -UGUUCUUCUACUCCUUCUUUAGCUAC-5' (SEQ ID NO: 587)

MYC-1360 Target: 5' -AACAAAGAAGATGAGGAAGAAATCGATG-3' (SEQ ID NO: 914)
5' -AGUGGCCACAGCAAACCTCCTCACAG-3' (SEQ ID NO: 1242)
3' -ACCUCCGGUGUCGUUUGGAGGAGUGUC-5' (SEQ ID NO: 588)

MYC-1448 Target: 5' -TGGAGGCCACAGCAAACCTCCTCACAG-3' (SEQ ID NO: 915)
5' -ACAGCCCACUGGUCCUCAAGAGGUG-3' (SEQ ID NO: 1244)
3' -GUGUGUGUGUGUGUGAGACCUCCUC-5' (SEQ ID NO: 589)

MYC-1468 Target: 5' -CTCACAGCCACCTGTCCTCAAGAGGT-3' (SEQ ID NO: 916)
5' -GUGGCCACAGCAAACCTCCTCACAG-3' (SEQ ID NO: 1245)
3' -AGUGGCCACAGCAAACCTCCTCACAG-5' (SEQ ID NO: 591)

MYC-1469 Target: 5' -TCACAGGCCCACCTGTCCTCAAGAGGT-3' (SEQ ID NO: 917)
5' -ACAGCCCACUGGUCCUCAAGAGGUG-3' (SEQ ID NO: 1248)
3' -GUGUCCGGUGACAGCAGGAGUUCUCCAC-5' (SEQ ID NO: 592)

MYC-1470 Target: 5' -CACAGCCCACCTGTCCTCAAGAGGTG-3' (SEQ ID NO: 918)
5' -AGGCCACUGGUCCUCAAGAGGUG-3' (SEQ ID NO: 1247)
3' -UGUCCGGUGACAGCAGGAGUUCUCCAC-5' (SEQ ID NO: 593)

MYC-1471 Target: 5' -ACAGGCCACTGTCCTCAAGAGGTGCC-3' (SEQ ID NO: 919)
5' -GCCACUGGUCCUCAAGAGGUGCCA-3' (SEQ ID NO: 1248)
3' -GUGCAGCAGCAGGAGUUCUCCACGG-5' (SEQ ID NO: 594)

MYC-1472 Target: 5' -CAGGCCACTGTCCTCAAGAGGTGCC-3' (SEQ ID NO: 920)
5' -GGCCACUGGUCCUCAAGAGGUGCCA-3' (SEQ ID NO: 1249)
3' -UCGGUGACAGCAGGAGUUCUCCACGG-5' (SEQ ID NO: 595)
3'-'CUCGAAAAAACGGGACGCACUGGUCUA-5' (SEQ ID NO: 607) MYC-1712 Target: 5'-'GAGCTTTTTTGCCCTGCGTGACCAGAT-3' (SEQ ID NO: 934)
5'-'CUUUUUGCCCUCGUGACCAGAUC-3' (SEQ ID NO: 1262)
3'-'UCGAAAAAACGGGACGCACUGGUCUAG-5' (SEQ ID NO: 608) MYC-1713 Target: 5'-'AGCTTTTTTGCCCTGCGTGACCAGATC-3' (SEQ ID NO: 935)
5'-'UUUUUGCCCUCGUGACCAGAUCC-3' (SEQ ID NO: 1263)
3'-'CGAAAAAACGGGACGCACUGGUCUAGG-5' (SEQ ID NO: 609) MYC-1714 Target: 5'-'GCTTTTTTGCCCTGCGTGACCAGATCC-3' (SEQ ID NO: 936)
5'-'UUUUUGCCCUCGUGACCAGAUCC-3' (SEQ ID NO: 1264)
3'-'GAAAAAACGGGACGCACUGGUCUAGGG-5' (SEQ ID NO: 610) MYC-1715 Target: 5'-'GCTTTTTTGCCCTGCGTGACCAGATCCCG-3' (SEQ ID NO: 937)
5'-'UUUUGCCCUCGUGACCAGAUCCCG-3' (SEQ ID NO: 1265)
3'-'AAAACGGAACGACUGGUAGCGUUCCGGC-5' (SEQ ID NO: 611) MYC-1716 Target: 5'-'TTTTTTGCCCTGCGTGACCAGATCCCG-3' (SEQ ID NO: 938)
5'-'UUUGCCCUCGUGACCAGAUCCCGG-3' (SEQ ID NO: 1266)
3'-'GAAAAAACGGGACGCACUGGUCUAGGGC-5' (SEQ ID NO: 612) MYC-1717 Target: 5'-'TTTTTTGCCCTGCGTGACCAGATCCCGG-3' (SEQ ID NO: 939)
5'-'UGGCCUCGUGGACCCAGAUCCCAGGA-3' (SEQ ID NO: 1267)
3'-'AAAACGGAACGACUGGUAGCGUUCCGGC-5' (SEQ ID NO: 613) MYC-1718 Target: 5'-'TTTTTTGCCCTGCGTGACCAGATCCCGG-3' (SEQ ID NO: 940)
5'-'UGGCCUCGUGGACCCAGAUCCCGAGA-3' (SEQ ID NO: 1268)
3'-'AAAACGGAACGACUGGUAGCGUUCCGGCUC-5' (SEQ ID NO: 614) MYC-1719 Target: 5'-'TTTTTTGCCCTGCGTGACCAGATCCCGG-3' (SEQ ID NO: 941)
5'-'UGGCCUCGUGGACCCAGAUCCCGAGU-3' (SEQ ID NO: 1269)
3'-'AAAACGGAACGACUGGUAGCGUUCCGGCUC-5' (SEQ ID NO: 615) MYC-1720 Target: 5'-'TTTTTTGCCCTGCGTGACCAGATCCCGG-3' (SEQ ID NO: 942)
5'-'CCCUGCGUGGAGCUCCGGAGUGU-3' (SEQ ID NO: 1270)
3'-'ACGGGACGCACUGGUAGCGUUCCGGCUC-5' (SEQ ID NO: 616) MYC-1721 Target: 5'-'TTTTTTGCCCTGCGTGACCAGATCCCGGAGT-3' (SEQ ID NO: 943)
5'-'CCCUGCGUGGAGCUCCGGAGUGU-3' (SEQ ID NO: 1271)
3'-'ACGGGACGCACUGGUAGCGUUCCGGCUC-5' (SEQ ID NO: 617) MYC-1856 Target: 5'-'GGAAACGACGAGAACAGUUAGAAAAC-3' (SEQ ID NO: 944)
5'-'GGAAACGACGAGAACAGUUAGAAAAC-3' (SEQ ID NO: 1272)
3'-'CCCUGCGUGGAGCUCCGGAGUGU-5' (SEQ ID NO: 618) MYC-1857 Target: 5'-'GGAAACGACGAGAACAGUUAGAAAAC-3' (SEQ ID NO: 945)
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<td>5'-CTTTAACAGATTTGTATTTAAGAATTG-3'</td>
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<td>MYC-2193</td>
<td>5'-TTAAATGTAAATAACTTTAATAAAACGTT-3'</td>
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<td>MYC-2198</td>
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<td>MYC-2200</td>
<td>5'-AAACAUUUAACUUAUAACGUU-3'</td>
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<td>MYC-2201</td>
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<td>MYC-2202</td>
<td>5'-AAACAUUUAACUUAUAACGUU-3'</td>
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5' -AACUUAAUAAAAAGUUUUAUGCAG-3 ' (SEQ ID NO: 1285)
3' -UAUGAAAUUUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 631)

MYC-2203 Target: 5' -ATAACTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 958)

5' -ACUUUAAUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1286)
3' -AAUGAAAUUUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 632)

MYC-2204 Target: 5' -TTACCTTATAAACGTTTATACG-3 ' (SEQ ID NO: 959)

5' -CUUUAAUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1287)
3' -UGAAAUUUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 633)

MYC-2205 Target: 5' -AACCTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 960)

5' -UUUUAAUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1288)
3' -UCUUAAUAAAAGUUUUAAGCAG-5 ' (SEQ ID NO: 634)

MYC-2213 Target: 5' -GCTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 961)

5' -UUUUAAUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1289)
3' -AAAAUUUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 635)

MYC-2214 Target: 5' -TTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 962)

5' -UGAAAUUUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 636)

MYC-2215 Target: 5' -TTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 963)

5' -UUUAAUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1290)
3' -AUUAAUAAAAGUUUUAAGCAG-5 ' (SEQ ID NO: 637)

MYC-2216 Target: 5' -TTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 964)

5' -AAAGUUGAUUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1292)
3' -AAUAAAUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 638)

MYC-2217 Target: 5' -TTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 965)

5' -AAAGUUGAUUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1293)
3' -AAUAAAUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 639)

MYC-2218 Target: 5' -TTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 966)

5' -AAAGUUGAUUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1294)
3' -AAUAAAUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 640)

MYC-2219 Target: 5' -TTTTTTAATAAAACGTTTATACG-3 ' (SEQ ID NO: 967)

5' -AAAGUUGAUUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1295)
3' -AAUAAAUUUGCAAUAUGCAC-5 ' (SEQ ID NO: 641)

MYC-2220 Target: 5' -AAAGTGGATTTTTTCTATGGTTA-3 ' (SEQ ID NO: 968)

5' -UGUUGAUUAAAAGUUUUAAGCAG-3 ' (SEQ ID NO: 1296)
3' -UUUAAUAAAAGUUUUAAGCAG-5 ' (SEQ ID NO: 642)
MYC-2321 Target: 5' -AAGTTGATTTTTCTATTGTTTTTAG-3' (SEQ ID NO: 969)
3' -UCACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 643)

MYC-2322 Target: 5' -AGTTGATTTTTCTATTGTTTTTAGA-3' (SEQ ID NO: 970)
3' -CAACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 644)

MYC-2323 Target: 5' -GTTGATTTTTCTATTGTTTTTAGA-3' (SEQ ID NO: 971)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 645)

MYC-2324 Target: 5' -TTGATTTTTCTATTGTTTTTAGA-3' (SEQ ID NO: 972)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 646)

MYC-2325 Target: 5' -TGATTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 973)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 647)

MYC-2326 Target: 5' -GATTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 974)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 648)

MYC-2327 Target: 5' -ATTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 975)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 649)

MYC-2328 Target: 5' -TTTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 976)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 650)

MYC-2329 Target: 5' -TTTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 977)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 651)

MYC-2330 Target: 5' -TTTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 978)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 652)

MYC-2331 Target: 5' -TTTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 979)
3' -ACUAAAAAAGAUACAAAAACUUU- 5' (SEQ ID NO: 653)

MYC-2332 Target: 5' -TTTTTTCTATTGTTTTTAGAAA-3' (SEQ ID NO: 980)
3' -CUAUGUUUUUGAGAAAAAUAA- 5' (SEQ ID NO: 1308)
3'-AAGAUAAACAAAAUUUUUUUUUU- 5' (SEQ ID NO: 654)
MYC-2333 Target: 5'-TTCTATTTTTTTAGAAAAATAAAAT-3' (SEQ ID NO: 981)

Table 4: Selected Mouse Anti-MYC DsiRNAs (Asymmetries)

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<tr>
<th>Target Sequence</th>
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<td>3'-UCUUGAGCGUCAUUUUCUCUGCUUUU-5'</td>
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<td>MYC-m187 Target: 5'-AGGGATCTCTGACTGCGAGAAAGATAA-3'</td>
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<td>5'-GAGUCCGAGUAAAGAGAGGCUUtt-3'</td>
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<td>3'-GACUCAGCGUCAUUUUCUCGAAAGAA-5'</td>
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<td>MYC-m194 Target: 5'-CTGAGTCGACTGATCAAAGAAGCTTTTT-3'</td>
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<td>5'-GCAGUAAAUAAAGAACGCUUUUCGGGgc-3'</td>
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<td>3'-AGGCUGAUUUUUCUCUGCAAAACCGG-5'</td>
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<td>MYC-m210 Target: 5'-AAGAGCTTTTTTCGGCTGAGGATTAGA-3'</td>
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<td>5'-CUGUUUUUUCUCUGCAUGACTGa-3'</td>
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<td>3'-CCGAAAAAGACUGAGCGCAUCAU-5'</td>
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<td>MYC-m223 Target: 5'-GCCGTTTTTTCTGACTGCCTGAGA-3'</td>
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<td>5'-AGGGGAUGAGCGCGAGGCUUAGAGAga-3'</td>
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<td>3'-UCCUCUCACUCUGGCGCCUCAAACCUU-5'</td>
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<td>MYC-m265 Target: 5'-AGAGGGAGTGGAGCGGACGGTTGGAAGA-3'</td>
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<td>5'-AGCGGACGGGUGGAGAGCGCUUGct-3'</td>
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<td>3'-ACUCGCGUUGCCCAACUUCUCUGGCAAGAC-5'</td>
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<td>MYC-m273 Target: 5'-TGGAGCCGGACGTTGGAAAGGCCCTTGTG-3'</td>
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<td>5'-CCUAGGAAGGCGACGUCUGAGAGGag-3'</td>
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<td>3'-CUGGAUUCUUCGCGAGACCCUCUACUC-5'</td>
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<td>MYC-m321 Target: 5'-GACCTAAGAAGGACGTCTGGAGTGAG-3'</td>
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<td>5'-ACCCUGCGUACCCAAACUACGc-3'</td>
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<td>3'-GUU GGAGACGUGACUGGGUUGAGUuc-5'</td>
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<td>MYC-m384 Target: 5'-CAACCGCCGACTGCACACACCACT-3'</td>
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<td>3'-CCGCUUUGGAAGAGGCUACAGGCUUAGAc-5'</td>
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<td>MYC-m455 Target: 5'-GGGCGACGACTCTCTGAGAACTTAC-3'</td>
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<td>5'-CAGCUUCUCAGGAAACUAAUUt-3'</td>
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<td>3'-CUGUAGAGUGACCCUGAAGAUGAAGa-5'</td>
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MYC-m460 Target: 5'-GACACTTCTCACTGGAACTTACAATCT-3' (SEQ ID NO: 3569)
5'-CUGGAACUUACAUUCUGCGACCag-3' (SEQ ID NO: 3282)
3'-GUGACCCUUGAAGUUGAGCCUCGGUCG-5' (SEQ ID NO: 3426)

MYC-m469 Target: 5'-CAGCTGAATTTACATCTGCGACGAG-3' (SEQ ID NO: 3570)
5'-ACAAUCUGCGACCAGAGGACAGGACT-3' (SEQ ID NO: 3283)
3'-UUUCUCGGAGAGCGUCCUCGGUCG-5' (SEQ ID NO: 3427)

MYC-m478 Target: 5'-TTACAATCTGGAGCCAGACAGAAG-3' (SEQ ID NO: 3571)
5'-AAAGCUGGUAACCUUGAAUGUUAGACGCUCGG-5' (SEQ ID NO: 3428)

MYC-m581 Target: 5'-AAAAGAGCTCCTCGAGCTGTTTGAAGG-3' (SEQ ID NO: 3572)
5'-GUUUCUUUGGCGUUGGAAACCCGCAACCUUUUGGG-5' (SEQ ID NO: 3431)

MYC-m591 Target: 5'-CTGAGCTGTTGAGCTGTTGATTTCC-3' (SEQ ID NO: 3573)
5'-GGGAGUUGCACUUGAAGUGGUUGUCCU-5' (SEQ ID NO: 3432)

MYC-m597 Target: 5'-CTGTTTGAAGGCTGGATTTCCTTTGGG-3' (SEQ ID NO: 3574)
5'-GACUCCGUACAGCCCUAUUUCAUct-3' (SEQ ID NO: 3433)

MYC-m609 Target: 5'-TGGATTCCTTGGCGTGGAAACCC-3' (SEQ ID NO: 3575)
5'-CCCTCAACGTGAACTTCACCAACAGGA-3' (SEQ ID NO: 3285)
3'-GAGCUGCGGATACCCCUAAAC-5' (SEQ ID NO: 3429)

MYC-m657 Target: 5'-CGAGCGGAGCCACGTTAGCAGAAG-3' (SEQ ID NO: 3576)
5'-GUUUGAAGGCGGCUUCUUUGGgg-3' (SEQ ID NO: 3287)
3'-GACACUCCGUACGACGAAUCCACCUAAGCC-5' (SEQ ID NO: 3430)

MYC-m663 Target: 5'-ACGTCGAACCCACAGGAAACTATG-3' (SEQ ID NO: 3577)
5'-GACUCGCGGUACAGCCCUAAAUUAUCt-3' (SEQ ID NO: 3289)
3'-GUGCUGGCCAAGCCCGGGAUAAACGA-5' (SEQ ID NO: 3434)

MYC-m699 Target: 5'-ACGACTGCTGATCCACCATC-3' (SEQ ID NO: 3578)
5'-GCCGCCGAGAAUUCUUAUcc-3' (SEQ ID NO: 3290)
3'-GUGCUGGCCAAGCCCGGGAUAAACGA-5' (SEQ ID NO: 3343)

MYC-m724 Target: 5'-CTGAGGCTGAACTTACTATCTCA-3' (SEQ ID NO: 3579)
5'-GUGAGGAUACUGGAGAAAAUCga-3' (SEQ ID NO: 3291)
3'-GUGCUGGCCAAGCCCGGGAUAAACGA-5' (SEQ ID NO: 3345)

MYC-m732 Target: 5'-AGGAAGAAGATTTTCATCACCAGCAAC-3' (SEQ ID NO: 3580)
5'-GUGAGGAUACUGGAGAAAAUCga-3' (SEQ ID NO: 3292)
3'-GUGCUGGCCAAGCCCGGGAUAAACGA-5' (SEQ ID NO: 3346)
5'-GUGACUCUAUUGAGCGUUUAAAGCU-5' (SEQ ID NO: 3437)
MYC-m787 Target: 5' -CAGTGAGGATATCTGGAAGAAATTCGA-3' (SEQ ID NO: 3581)
5'-GAAGAUAUUGACUCUGUUUCCAC-3' (SEQ ID NO: 3294)
3'-ACCUCUUUAAUGACUGAAAGGGUGG-5' (SEQ ID NO: 3438)
MYC-m800 Target: 5' -TGGAGAAATTCGAGCTGCTTCCCACC-3' (SEQ ID NO: 3582)
5'-GGGCUCUCUCUUCUAAUGUG-tg-3' (SEQ ID NO: 3295)
3'-GGCAGAGGAGGGAGGAUGCAAC-5' (SEQ ID NO: 3439)
MYC-m852 Target: 5' -CCGGGCTCTGCTCTCCATCCTATGTTG-3' (SEQ ID NO: 3583)
5'-CATCCTATGTTGCGGTCGCTACGTCCT-3' (SEQ ID NO: 3585)
3'-UCCUAUGGUCCUCGCUACGUUG-tc-3' (SEQ ID NO: 3298)
MYC-m857 Target: 5' -CCGAUCAGCUGGAGAUGAUGACGGA-3' (SEQ ID NO: 3586)
5'-GCGGCUAGUCGACCUCUACUACUGGU-5' (SEQ ID NO: 3440)
MYC-m867 Target: 5' -ATGTTGCGGTCGCTACGTCCTTCTCCC-3' (SEQ ID NO: 3587)
5'-AGCTGGAGATGATGACCGAAGTTACTTG-3' (SEQ ID NO: 3588)
3'-UCGACCUCUCUCACUGGACGUGACGG-5' (SEQ ID NO: 3442)
MYC-m873 Target: 5' -AGGUGCCUCUCUAUCUCUCUCUCUAGAAGG-3' (SEQ ID NO: 3299)
5'-CGAUCAGCUCGCUGAUGGAGCGCGA-3' (SEQ ID NO: 3300)
3'-GCCGCUAGACGCUACUUUACGCTG-5' (SEQ ID NO: 3444)
MYC-m940 Target: 5' -CGGCTCGCCATGAGTGGATGAGCGAAGC-3' (SEQ ID NO: 3589)
5'-CAUGUACCCUGAUGGAGAUGGACGAGA-3' (SEQ ID NO: 3301)
3'-UGGACUGGUGCUCAAGGACCGCUCU-5' (SEQ ID NO: 3445)
MYC-m948 Target: 5' -ATGATGACCGGATCTTTGGAGGACGAC-3' (SEQ ID NO: 3590)
5'-AGUGUGGGUGAGGAGCAUGGUGUGACG-3' (SEQ ID NO: 3302)
3'-GGUCACUGACUCUCUCUCUCUCUCU-5' (SEQ ID NO: 3446)
MYC-m956 Target: 5' -TGTGTTCTGAGATGAGGACAGCUGAAGG-3' (SEQ ID NO: 3591)
5'-AUGUGGAGGAACGCAUGGUGACGAGA-3' (SEQ ID NO: 3303)
3'-UAGAACUCUCUCUUGUACGUCUCUCUG-5' (SEQ ID NO: 3447)
MYC-m964 Target: 5' -GACATGGTGAACCGAGCTCTGAGC-3' (SEQ ID NO: 3592)
5'-CAUGGUGAACCAGACGCUCCUCUCUACG-3' (SEQ ID NO: 3304)
3'-UGCAUCAUGUGGGUCUACGUGAAGACG-5' (SEQ ID NO: 3448)
5'-'-AAAUCCUGUACCUCGUCCGAUUCca-3'  (SEQ ID NO: 3317)
3'-'-GGU UAAGGACAUUGGACAGGCUAAGAG-5'  (SEQ ID NO: 3461)

MYC-ml269 Target: 5'-'-CCAAATCTCTGTACCTCGTCCGAAC-3'  (SEQ ID NO: 3605)
5'-'-CACCAGCGAGGACUGAAAGAag-3'  (SEQ ID NO: 3318)
3'-'-UGG UGUGCGUCGUGAGACUUCUUCUC-5'  (SEQ ID NO: 3462)

MYC-ml391 Target: 5'-'-ACCACCAGCAGCGACTCTGAAGAAGAG-3'  (SEQ ID NO: 3606)
5'-'-GCAGCGACUCUGAAGAAGAGCAAGA-3'  (SEQ ID NO: 3319)
3'-'-GUC GUGACUUCUUCUGUUCUUCU-5'  (SEQ ID NO: 3463)

MYC-ml396 Target: 5'-'-AGAAGAGCGCAAGAAGAAGA-3'  (SEQ ID NO: 3320)
5'-'-GACGCGACCGCAAGAAGAAGA-3'  (SEQ ID NO: 3464)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3465)

MYC-ml402 Target: 5'-'-AGAAGGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3321)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3322)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3323)

MYC-ml407 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3324)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3325)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3326)

MYC-ml414 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3327)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3328)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3329)

MYC-ml420 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3330)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3331)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3332)

MYC-ml426 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3333)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3334)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3335)

MYC-ml431 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3336)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3337)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3338)

MYC-ml437 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3339)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3340)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3341)

MYC-ml443 Target: 5'-'-AGAAGAGGAGAAGAAGAAGA-3'  (SEQ ID NO: 3342)
5'-'-GUCAUCGCAUCGCAUCGCAUCGCA-3'  (SEQ ID NO: 3343)
3'-'-GUCAUCGCAUCGCAUCGCAUCGCA-5'  (SEQ ID NO: 3344)
MYC-ml470 Target: 5' -CTGCCAAGAGGTCGGAGTCGGGCTCAT-3' (SEQ ID NO: 3616)
5' -CAAGAGGUGCCACGUCUCCACUc-3' (SEQ ID NO: 3329)
3' -GAG UUCUCCAGGUGCAAGUGGAGG-5' (SEQ ID NO: 3473)

MYC-ml514 Target: 5' -CTCAAGAGGTGCCACGTCTCCACTCAC-3' (SEQ ID NO: 3617)
5' -GUCUCCACUCACCCACAAUCAcg-3' (SEQ ID NO: 3330)
3' -UGCAGAGGUUGAGGUGUGUAUGC-5' (SEQ ID NO: 3474)

MYC-ml554 Target: 5' -ACGTCTCCACTCACCAGCACAACTACG-3' (SEQ ID NO: 3618)
5' -GCCAAGAGGGCCAAGUUGGACAGtg-3' (SEQ ID NO: 3331)
3' -GAC GUUCUCCCGGUUCAACCUGUCAC-5' (SEQ ID NO: 3476)

MYC-ml614 Target: 5' -CTGCCAAGAGGGCCAAGTTGGACAGTG-3' (SEQ ID NO: 3619)
5' -GAGGGCCAAGUUGGACAGUGGCAgg-3' (SEQ ID NO: 3332)
3' -UUC UCCCGGUUCAACCUGUCACCGUCC-5' (SEQ ID NO: 3478)

MYC-ml619 Target: 5' -AAAGGGCCCAAGTTGGACAGTG-3' (SEQ ID NO: 3620)
5' -AGUUGGACAGUGGCAGGGUCCUGaa-3' (SEQ ID NO: 3333)
3' -GUU CAACCUGUCACCGUCCCAGGACUU-5' (SEQ ID NO: 3479)

MYC-ml627 Target: 5' -CAAGTTGGACAGTGGCAGGGTCCTGAA-3' (SEQ ID NO: 3621)
5' -GACAGUGGCAGGGUCCUGAAGCAga-3' (SEQ ID NO: 3334)
3' -ACCUGUCACCGUCCCAGGACUUCGUCU-5' (SEQ ID NO: 3480)

MYC-ml632 Target: 5' -CTGAAGCAGATCAGCAACAACC-3' (SEQ ID NO: 3622)
5' -GGGTCCTGAAGCAGATCAGCAACAACC-3' (SEQ ID NO: 3335)
3' -CAC GGUUCCAGAAGCAGAUCAGCa-3' (SEQ ID NO: 3479)

MYC-ml638 Target: 5' -GTGCCAGGTCTGACGACTACGCA-3' (SEQ ID NO: 3623)
5' -GUCCUGAAGCGAUCAGCAAAAcc-3' (SEQ ID NO: 3336)
3' -CCCAGGACUUCUGUCAGCGUUGUUGU-5' (SEQ ID NO: 3480)

MYC-ml644 Target: 5' -GGGTCTCGAAGCGATCAACACC-3' (SEQ ID NO: 3624)
5' -GAAGCAGAUCAGCAAAACC-3' (SEQ ID NO: 3337)
3' -GAC UUCGUCAGCGUUGUUGGCGUUC-5' (SEQ ID NO: 3481)

MYC-ml649 Target: 5' -CTGAAGCAGATCAGCAAAACC-3' (SEQ ID NO: 3625)
5' -CGAGCGUAGGCGACUUUUUUGcc-3' (SEQ ID NO: 3338)
3' -UUG CUCGACUUCGUGAGAAAAACGG-5' (SEQ ID NO: 3482)

MYC-ml754 Target: 5' -AAGCAGCTGAGCGCAGCTTTTTTGCC-3' (SEQ ID NO: 3626)
5' -GCCAGGUUGCCCAAGTTGGACAGTG-3' (SEQ ID NO: 3339)
3' -CGC GUGAAAAACGGGACGACUGGU-5' (SEQ ID NO: 3483)

MYC-ml765 Target: 5' -GGCAGCTTTTTGCTTGCGTGACCA-3' (SEQ ID NO: 3627)
5' -CCUGCGUGACCAGAACCGCUGAAUt-3' (SEQ ID NO: 3340)
3'-CGG GACGCAUCUGGUCAGGGACUUAAC-5' (SEQ ID NO: 3484)
MYC-m1778 Target: 5'-GCCCTGCGTGACCAGATCCCTGAATTG-3' (SEQ ID NO: 3628)
5'-ACCAGAUCCUCAGAAUUGGAAAACaa-3' (SEQ ID NO: 3341)
3'-ACU GGUCUAGGGACUUAACCUUUGUG-5' (SEQ ID NO: 3485)
MYC-m1786 Target: 5'-TGACCCAGATCCCTGAATTGGAAAACAAGG-3' (SEQ ID NO: 3629)
5'-CUGAAUUGGAAAACAAAGGc-3' (SEQ ID NO: 3342)
3'-GGACUAAUUGUUGCUUUGCGG-5' (SEQ ID NO: 3486)
MYC-m1795 Target: 5'-GCCCTGAATTGGAAAACAAAGGc-3' (SEQ ID NO: 3630)
5'-AGGUAGUGAUCCUCAAAAAAGCCac-3' (SEQ ID NO: 3343)
3'-GGUGGUUGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3487)
MYC-m1825 Target: 5'-CAAGGTAGTGATCCTCAAAAAAGCCAC-3' (SEQ ID NO: 3631)
5'-CAAAAAAGCCACCGCCUACAUCCtg-3' (SEQ ID NO: 3344)
3'-GGCGCGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3488)
MYC-m1838 Target: 5'-CTCAAAAAAGCCACCGCTACATCCTG-3' (SEQ ID NO: 3632)
5'-GCCCGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3345)
3'-GGUGGUUGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3489)
MYC-m1845 Target: 5'-GGCCCTACATCCTGTCCATTCAAGC-3' (SEQ ID NO: 3633)
5'-CGCCUACAUCCUGUCCAUUCAAAGGc-3' (SEQ ID NO: 3346)
3'-GGUGGUUGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3490)
MYC-m1850 Target: 5'-AGCCGTACATCCTGTCCATTCAAGC-3' (SEQ ID NO: 3634)
5'-ACAUCCUGUCCAUUCAAAGGAC-3' (SEQ ID NO: 3347)
3'-GGUGGUUGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3491)
MYC-m1855 Target: 5'-CTACATCCTGTCCATTCAAGC-3' (SEQ ID NO: 3635)
5'-CUGUCCAUUCAAAGGAC-3' (SEQ ID NO: 3348)
3'-GGUGGUUGCCGUUGGCGGAUGUAGGAC-5' (SEQ ID NO: 3492)
MYC-m1860 Target: 5'-CAGCGAGCAACACACUCUGUUAUU-3' (SEQ ID NO: 3636)
5'-CAGCGAGCAACACACUCUGUUAUU-3' (SEQ ID NO: 3349)
3'-UCGUCUGUCGUGUUCGAGGAGACU-5' (SEQ ID NO: 3493)
MYC-m1873 Target: 5'-AGCAGCAACAGCTACCTGTGGAAGGA-3' (SEQ ID NO: 3637)
5'-AGCAGCAACAGCTACCTGTGGAAGGA-3' (SEQ ID NO: 3350)
3'-GCGCUGUGUUCGAGGAGACU-5' (SEQ ID NO: 3494)
MYC-m1879 Target: 5'-CGAGCAACAGCTACCTGTGGAAGGA-3' (SEQ ID NO: 3638)
5'-CGAGCAACAGCTACCTGTGGAAGGA-3' (SEQ ID NO: 3351)
3'-UCGAGGAGCAACACACUGUGAUUAACU-5' (SEQ ID NO: 3495)
MYC-m1887 Target: 5'-AGCTCAGCTGTGGAAGGAATATTG-3' (SEQ ID NO: 3639)
5' -GAAAAGGACUUUAGGAAAAGCac-3' (SEQ ID NO: 3352)
3' -GAC UUUUCUGAANAACCUUUUCGUG-5' (SEQ ID NO: 3496)

MYC-m1896 Target: 5' -CTGAAAAGGACTTATTGAGGAAACGac-3' (SEQ ID NO: 3640)
3' -GAGAAACGACGAGAAGUGAaa-3' (SEQ ID NO: 3353)
3' -AAC UUUUCUGACGUUUGCAACUUU-5' (SEQ ID NO: 3497)

MYC-m1910 Target: 5' -TGAGGAAAACGACGAGAAGGAAA-3' (SEQ ID NO: 3641)
3' -UGU UUGACCUUUGCUAACUUGAGAC-5' (SEQ ID NO: 3354)
3' -GAGAACAGCUUCGAAACUCUG-5' (SEQ ID NO: 3498)

MYC-m1938 Target: 5' -ACAAACTGAACGACGAGAACGUAC-3' (SEQ ID NO: 3642)
3' -GUGGAAACGUUUUGAGGAGCUGUGca-3' (SEQ ID NO: 3355)
3' -CAACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3500)

MYC-m1943 Target: 5' -CTCGAAAGGCTTCAAACTCTCGGAAACTCTGCA-3' (SEQ ID NO: 3643)
5' -UUCCUGAAUAACCUUUGCUUGCUG-5' (SEQ ID NO: 3356)
5' -UGGAAACGUUUUGAGGAGCUGUGGAu-5' (SEQ ID NO: 3501)

MYC-m1951 Target: 5' -GCTTCGAAACTCTGGTGCAAACACTCTGGA-3' (SEQ ID NO: 3644)
3' -CAACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3502)
3' -GACCUUUGGCAUAACUUGGUGGCA-3' (SEQ ID NO: 3357)
3' -CAACGCUUUGGAACCAGACGUGCUCAC-3' (SEQ ID NO: 3503)

MYC-m1957 Target: 5' -AAACCTGAGCTTCAAACGACGACCTAC-3' (SEQ ID NO: 3645)
5' -UUGCAUAACUUGGCUAACACUGAg-3' (SEQ ID NO: 3358)
5' -ACACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3504)

MYC-m1963 Target: 5' -TGGTGATAAAACTGACCTGACCGCTGGAGG-3' (SEQ ID NO: 3646)
3' -GGAAACGUUUUGGUGGCAUAACUUGGUGGCA-3' (SEQ ID NO: 3359)
3' -ACACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3505)

MYC-m1985 Target: 5' -CGAGGAGGACTTCAAACTGACCTGACCGCTGGAGG-3' (SEQ ID NO: 3647)
5' -GAAACGUUUGGUGGCAUAACUUGGUGGCA-3' (SEQ ID NO: 3360)
5' -ACACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3506)

MYC-m1995 Target: 5' -CTGAACTCTTGAGTAAAGGAGGAGGA-3' (SEQ ID NO: 3648)
3' -GCAACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3361)
3' -ACACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3507)

MYC-m2002 Target: 5' -CTCTCGTGAGAGTAAGGAGAACGGTTC-3' (SEQ ID NO: 3649)
5' -CAAACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3362)
5' -ACACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3508)

MYC-m2011 Target: 5' -GAGTAAGGAGAAGGTTTCCTCTGACACAGACGTTC-3' (SEQ ID NO: 3650)
3' -GAAACGUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3363)
3' -ACACGCUUUGGAACCAGACGUGCU-5' (SEQ ID NO: 3509)

MYC-m2016 Target: 5' -AGGAGAACGGGTTTCTTGACAGAAGG-3' (SEQ ID NO: 3651)
5'-'CGGUUCCUUCUGACAGAACUGAUgc-3' (SEQ ID NO: 3364)
3'-'UUG CCAAGGAAGACUGUCUUGACUACG-5' (SEQ ID NO: 3508)

MYC-m2021 Target: 5'-'AACGTTTCTCTGACAGAACCTGC-3' (SEQ ID NO: 3652)
5'-'CAGAACUGAUGCGCUGGAAUUAAa-3' (SEQ ID NO: 3365)
3'-'UGUCUGACUACGCGACCUUAAUUU-5' (SEQ ID NO: 3509)

MYC-m2034 Target: 5'-'GACAGAAGCTGCCTGAGAATTTAAA-3' (SEQ ID NO: 3653)
5'-'UGACAUACGCACUUAAUUUACGUA-5' (SEQ ID NO: 3510)
3'-'UUG CCAAGGAAGACUGUCUUGACUACG-5' (SEQ ID NO: 3564)

MYC-m2039 Target: 5'-'AATCTGACGCTTTGAAATTAAAATGCAT-3' (SEQ ID NO: 3655)
5'-'CUGAUGCGCUGGAAUUAAAAUGCA-3' (SEQ ID NO: 3511)

MYC-m2042 Target: 5'-'GACAGGAATTTAAAATGCATCTG-3' (SEQ ID NO: 3656)
5'-'GGAUUAAUUAAUGCAUGCUAAAGcc-3' (SEQ ID NO: 3512)
3'-'UGUCUGACUACGCGACCUUAAUUUACGUA-5' (SEQ ID NO: 3513)

MYC-m2049 Target: 5'-'CTGGAATTAAAATGCATCTCAACCT-3' (SEQ ID NO: 3657)
5'-'GGCUGCUAAACCUACCUACCAACTt-3' (SEQ ID NO: 3370)
3'-'UAC GAGUUCGGAUUGGAGUGGGA-5' (SEQ ID NO: 3514)

MYC-m2056 Target: 5'-'AAAATGCACTGCTCAAAGGCAAC-3' (SEQ ID NO: 3658)
5'-'AAUGCAUGCUAAAGCCUACACTc-3' (SEQ ID NO: 3369)
3'-'AUG UUGCGUAAAGCUUCGUUUGGA-5' (SEQ ID NO: 3515)

MYC-m2064 Target: 5'-'ATGGTGGAATTTAAATGCATGCTCA-3' (SEQ ID NO: 3659)
5'-'GGGCTTTGGGACTGTAAGCTTCC-3' (SEQ ID NO: 3371)
3'-'GGGACTGTAAGCTTCCAAACCT-5' (SEQ ID NO: 3516)

MYC-m2069 Target: 5'-'GACUGUAAGCUCAAGCCUACCAACCT-3' (SEQ ID NO: 3372)
5'-'GCCAUAAUUUUAACUGCCUCAAAct-3' (SEQ ID NO: 3373)
3'-'AGCGGUGACGUAAAGCUUGCAC-5' (SEQ ID NO: 3517)

MYC-m2096 Target: 5'-'GGGCTTTGGGACTGTAAGCTTCC-3' (SEQ ID NO: 3374)
5'-'GCCAUAAUUUUAACUGCCUCAAAct-3' (SEQ ID NO: 3375)
3'-'AGCGGUGACGUAAAGCUUGCAC-5' (SEQ ID NO: 3518)
MYC-m2117  Target:  5'-CAGCCATAATTTTAACTGCCTCAAACT-3'  (SEQ ID NO: 3663)
5' '-UUUAACUGCCUAAACUUAAGAgt-3'  (SEQ ID NO: 3376)
3' '-UAAAUUGACGGAGGUAAUUAUCA-5'  (SEQ ID NO: 3520)
MYC-m2125  Target:  5'-ATTTTAACTGCCTCAAACTTAAATAGT-3'  (SEQ ID NO: 3664)
5' '-UGCCUACAAUCUAAGUUAAGaa-3'  (SEQ ID NO: 3377)
3' '-UGAGUGGUUUAUUAACAUAUUU-5'  (SEQ ID NO: 3521)
MYC-m2131  Target:  5'-ACTGCCTCAAACTTAAATAGTATAAAA-3'  (SEQ ID NO: 3665)
5' '-CAAACUAAUUGAUAAGAGAAAct-3'  (SEQ ID NO: 3378)
3' '-AAAUUGACGGAGGUAAUUAUCAUUU-5'  (SEQ ID NO: 3522)
MYC-m2136  Target:  5'-CTCAAACTTAAATAGTATAAAAGAACT-3'  (SEQ ID NO: 3666)
5' '-AAAUAGUAUAAAAGAACUUUUUtt-3'  (SEQ ID NO: 3380)
3' '-AAUAUCUUAAUAUUCUGGAAA- 5'  (SEQ ID NO: 3523)
MYC-m2143  Target:  5'-CTCAAACTTAAATAGTATAAAAGAACT-3'  (SEQ ID NO: 3667)
5' '-AAAUAGUAUAAAAGAACUUUUUtt-3'  (SEQ ID NO: 3380)
3' '-AAUAUCUUAAUAUUCUGGAAA- 5'  (SEQ ID NO: 3523)
MYC-m2149  Target:  5'-AGTATAAAAGAACTTAAATAGTATAAAA-3'  (SEQ ID NO: 3668)
5' '-AAAUAGUAUAAAAGAACUUUUUtt-3'  (SEQ ID NO: 3380)
3' '-AAUAUCUUAAUAUUCUGGAAA- 5'  (SEQ ID NO: 3523)
MYC-m2154  Target:  5'-AAAAGAACTTTTTTTATGCTTCCCAT-3'  (SEQ ID NO: 3669)
5' '-AAAUAGUAUAAAAGAACUUUUUtt-3'  (SEQ ID NO: 3380)
3' '-AAUAUCUUAAUAUUCUGGAAA- 5'  (SEQ ID NO: 3523)
MYC-m2159  Target:  5'-ACTTTTTTTATGCTTCCCATCTTTT-3'  (SEQ ID NO: 3670)
5' '-UUUAACUGCCUAAACUUAAGAgt-3'  (SEQ ID NO: 3376)
3' '-UAAAUUGACGGAGGUAAUUAUCA-5'  (SEQ ID NO: 3520)
MYC-m2166  Target:  5'-TTTTATGCTTCCCATCTTTTTCCTT-3'  (SEQ ID NO: 3671)
5' '-UUUAACUGCCUAAACUUAAGAgt-3'  (SEQ ID NO: 3376)
3' '-UAAAUUGACGGAGGUAAUUAUCA-5'  (SEQ ID NO: 3520)
MYC-m2171  Target:  5'-TGCTTCCCATCTTTTTCCTT-3'  (SEQ ID NO: 3672)
5' '-UUUAACUGCCUAAACUUAAGAgt-3'  (SEQ ID NO: 3376)
3' '-UAAAUUGACGGAGGUAAUUAUCA-5'  (SEQ ID NO: 3520)
MYC-m2177  Target:  5'-CCATCTTTTTTCTTTTTCCTT-3'  (SEQ ID NO: 3673)
5' '-UUUAACUGCCUAAACUUAAGAgt-3'  (SEQ ID NO: 3376)
3' '-UAAAUUGACGGAGGUAAUUAUCA-5'  (SEQ ID NO: 3520)
3'-'GGA AAAUUGUCUAAACAUAAAUACA-5' (SEQ ID NO: 3531)
MYC-m2194 Target: 5'-'CTTCTAACAGATTTGTATTTAATTGT-3' (SEQ ID NO: 3675)

5'-'CAGAuuuGUUUAAUUGUUUUUt-3' (SEQ ID NO: 3388)
3'-'UGUCUAAACAUAAAUACAAAAA- 5' (SEQ ID NO: 3532)
MYC-m2200 Target: 5'-'AACAGATTGTATTTATGTTTTT-3' (SEQ ID NO: 3676)

5'-'UUUUAAUUGUUUUUUUUUUUUat-3' (SEQ ID NO: 3389)
3'-'ACA UAAAUUACAAAAAUUUUUUA- 5' (SEQ ID NO: 3533)
MYC-m2208 Target: 5'-'TTTATTTATGTTTTTTTTTAAAAT-3' (SEQ ID NO: 3677)

5'-'GUUUUUUUUUUUUACUUAAAtc-3' (SEQ ID NO: 3390)
3'-'AAC AAAAAAUUUGAAUUGUUG- 5' (SEQ ID NO: 3534)
MYC-m2217 Target: 5'-'TTTATTTATTATTTTTATTTAAAAATC-3' (SEQ ID NO: 3678)

5'-'UAUACUUAAACAUUUUGAAAAtc-3' (SEQ ID NO: 3391)
3'-'AAA UUUGAAUUGAUUGG GU- 5' (SEQ ID NO: 3535)
MYC-m2224 Target: 5'-'TTTATTTTTTTTTTTTTTTTTTTTT-3' (SEQ ID NO: 3679)

5'-'AAAUCUAUUAAUCUAUUUUUt-3' (SEQ ID NO: 3392)
3'-'UUU UUAUUGAAUUGAUUGGUAAG- 5' (SEQ ID NO: 3536)
MYC-m2229 Target: 5'-'AAATTATTTTTTTTTCTATCCAAATC-3' (SEQ ID NO: 3680)

5'-'AAAUCUAUUAAUCUAUUUUUt-3' (SEQ ID NO: 3393)
3'-'AAU UUUGAAUUGAAUUGGUAAAG- 5' (SEQ ID NO: 3537)
MYC-m2236 Target: 5'-'TTTTTATTTTTTTTTTTTTTTTTT-3' (SEQ ID NO: 3681)

5'-'CUUCAUUAAUUCUUGAAACUGta-3' (SEQ ID NO: 3394)
3'-'UAC AUUGAUAUGAAUUGGUAAG- 5' (SEQ ID NO: 3538)
MYC-m2241 Target: 5'-'ATCTATCCAAATTTTTCCATGTA-3' (SEQ ID NO: 3682)

5'-'CUUCAUUAAUUCUUGAAACUGta-3' (SEQ ID NO: 3395)
3'-'GGUACAUUUAAUCCGGAACUUAACAU- 5' (SEQ ID NO: 3539)
MYC-m2255 Target: 5'-'CCCATGTAATAGGGCGTTCGAAATGTA-3' (SEQ ID NO: 3683)

5'-'AAAUGGCCCUUGAAUGUAAAUaA-3' (SEQ ID NO: 3396)
3'-'CAU UUUGCUUGAAACCUUUCAUUUUU- 5' (SEQ ID NO: 3540)
MYC-m2260 Target: 5'-'GTAATAGGGCCCGTTCGAAATGTAATAAA-3' (SEQ ID NO: 3684)

5'-'GGGCCUUUGAAUGUAAACUUt-3' (SEQ ID NO: 3397)
3'-'UGCCGGAACUUUACAUUUUGUAAAU- 5' (SEQ ID NO: 3541)
MYC-m2265 Target: 5'-'TAGGGCCCTGAAATGTAATATACTTTT-3' (SEQ ID NO: 3685)

5'-'UUUGAAUUGAAUUUAAUUAUaA-3' (SEQ ID NO: 3398)
3'-'GACCUUUAUUGAAAUUGAAAUUUU- 5' (SEQ ID NO: 3542)
MYC-m2270 Target: 5'-'CTTGAATGAAATAACTTTTTAAATAAA-3' (SEQ ID NO: 3686)
5'-AUUUUUAAAGUAGUUUUUUCU-3' (SEQ ID NO: 3411)
3'-AGUAAAAAUUCACUAUUAAAAGAUA-__5' (SEQ ID NO: 3555)
MYC-m2362 Target: 5'-TCATTTTTAAGTTAGTTTTTTTCTAT-3' (SEQ ID NO: 3699)
5'-UAUUGUUUUUGAAUAAAAAUAAat-3' (SEQ ID NO: 3412)
3'-AGUAAACAAAAAUCUUUUUUUUUAAA-__5' (SEQ ID NO: 3556)
MYC-m2384 Target: 5'-TCTATTGTITTATAGAAAAATAAAAT-3' (SEQ ID NO: 3700)
5'-UUUUAGAAAAAUAUAAUAAUgg-3' (SEQ ID NO: 3413)
3'-CAA_AAUUUUUUUUUUUUUAAACC-5' (SEQ ID NO: 3557)
MYC-m2390 Target: 5'-GTTTTTAGAAAAAAATAAAATAATTGG-3' (SEQ ID NO: 3701)
5'-AAAAAAUAAAAAUUUUUGGAAA-Aat-3' (SEQ ID NO: 3414)
3'-CUU_UUUUUUUUUUUUACCUUUUUAA-5' (SEQ ID NO: 3558)
MYC-m2397 Target: 5'-GAAAAAATAAAATATTGGAAAAAAAT-3' (SEQ ID NO: 3702)

Table 5: DsRNA Target Sequences (21mers) In MYC mRNA

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<td>Target: 5'-UGCAGCGCGAUAUCUGACGC-3' (SEQ ID NO: 1325)</td>
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MYC-1073 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1556)
MYC-1074 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1557)
MYC-1075 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1558)
MYC-1076 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1559)
MYC-1077 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1560)
MYC-1078 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1561)
MYC-1079 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1562)
MYC-1080 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1563)
MYC-1081 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1564)
MYC-1082 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1565)
MYC-1083 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1566)
MYC-1084 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1567)
MYC-1085 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1568)
MYC-1086 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1569)
MYC-1087 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1570)
MYC-1088 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1571)
MYC-1089 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1572)
MYC-1090 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1573)
MYC-1091 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1574)
MYC-1092 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1575)
MYC-1093 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1576)
MYC-1094 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1577)
MYC-1095 21 nt Target: 5'-ACCAGGC-3' (SEQ ID NO: 1578)
Table 6: Selected Human Anti-MYC "Blunt/Fray" DsiRNAs

<table>
<thead>
<tr>
<th>Target</th>
<th>Sequence</th>
<th>ID</th>
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<tr>
<td>MYC-94</td>
<td>5'-CTCGAGAAAGGGCAGGGCTTTCAGAGG-3</td>
<td>655</td>
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<tr>
<td>MYC-178</td>
<td>5'-GGGCTTTATCTAACCTGCTGTAAT-3</td>
<td>656</td>
</tr>
<tr>
<td>MYC-365</td>
<td>5'-AAACCTGCGGCAATCCACGAAACUG-3</td>
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<td>MYC-370</td>
<td>5'-TTGCCGACATCCACGAAACTTGA-3</td>
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<tr>
<td>MYC-376</td>
<td>5'-CATCAGAAATTTGCCATAGCAG-3</td>
<td>659</td>
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<td>MYC-403</td>
<td>5'-GGGCAGCACTTTGCACTGGAACTTACC-3</td>
<td>660</td>
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<tr>
<td>MYC-409</td>
<td>5'-GCACUUUCAGAGGAAACUUACAAACAACG-3</td>
<td>661</td>
</tr>
<tr>
<td>MYC-417</td>
<td>5'-CACTGGGAATTACAACAGGCAAG-3</td>
<td>662</td>
</tr>
<tr>
<td>MYC-535</td>
<td>5'-TGTCAGCTGTTGAGCTGATTTT-3</td>
<td>663</td>
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3' -GAGCUCUUCCCGUCCCGAAGAGUCU (SEQ ID NO: 328)
3' -CCCAGAAUAGAUGGAGCAGCAUCUA (SEQ ID NO: 329)
3' -UUUGAGAUGAGGUGCUGUUGAAG (SEQ ID NO: 330)
3' -UUCGGCGGCAUAGCCUGCUUUGGAA (SEQ ID NO: 331)
3' -AAGCGCGGCAUAGCUGCUUUGAAGC (SEQ ID NO: 332)
3' -UUGACCUUAGAUGGAGGAGCUUUC (SEQ ID NO: 333)
3' -GGCACUGAAGAUGGAGCUUUUUG (SEQ ID NO: 334)
3' -UGACCUUAGAUGGAGGAGCUUUC (SEQ ID NO: 335)
3' -AAGCUGAGCAUAGGAGCUUUUUC (SEQ ID NO: 336)
3' -UUCGGAGACGUGGAGAAGUUC (SEQ ID NO: 1645)
3' -CGAGACGGCAGAGGCAAG-3' (SEQ ID NO: 1636)
3'-GACGAAUCUGCACCUUAAAAAGC C₃‴ (SEQ ID NO: 337)
MYC-541 Target: 5'-CTGCTTAGACGCTGGATTTTTTTCGGG-3' (SEQ ID NO: 664)
5'-GACGCUGGAUUUUCGGGUAGUG A₃‴ (SEQ ID NO: 1646)
3'-CUCCGACCUCUAAAAGCCCAUCAC C₅⁻ (SEQ ID NO: 338)
MYC-548 Target: 5'-GACGCTGGATTTTTTTCGGGTAGTGGA-3' (SEQ ID NO: 665)
5'-UGGAUUUUUUUCGGGUAGUGAAA A₃‴ (SEQ ID NO: 1647)
3'-ACCUCUAAAAGCCCAUCACCUUUUp G₃⁻ (SEQ ID NO: 339)
MYC-553 Target: 5'-TGATTITTTITTCGGTAGTGGAAAAACC-3' (SEQ ID NO: 666)
5'-UCUGGUAGUGAAACCAGCAGCC C₃‴ (SEQ ID NO: 1648)
3'-AAGCCCAUCACCUUUUGGCUGG C₅⁻ (SEQ ID NO: 340)
MYC-562 Target: 5'-TCGGGTAGTGGAAAAACCAGCAGCCTC-3' (SEQ ID NO: 667)
5'-CCUCUACAGGUAACCUACCACAG C₃‴ (SEQ ID NO: 1649)
3'-GGGAGUUGCAAGGUGGUUGUC C₅⁻ (SEQ ID NO: 341)
MYC-601 Target: 5'-CCCTCAACGTTACCAACAGGA-3' (SEQ ID NO: 668)
5'-ACGUUAGCUUCACCAACAGGA C₃‴ (SEQ ID NO: 1650)
3'-UGCACUCAAGGUGGUUGUGAU A₅⁻ (SEQ ID NO: 342)
MYC-607 Target: 5'-ACGTAGCTTCACCAACACGAATCTAG-3' (SEQ ID NO: 669)
5'-ACGACUCGGUGCAAGCCGTUAUUUA C₃‴ (SEQ ID NO: 1651)
3'-UGCUAGACCCGUGCAUAAAGAU G₅⁻ (SEQ ID NO: 343)
MYC-643 Target: 5'-ACGACTCGGTGCAGCCGTATTTCTACT-3' (SEQ ID NO: 670)
5'-GUGCAGGUAUUUCUACGCGACG C₃‴ (SEQ ID NO: 1652)
3'-CAGCCGCGCAUAAGGACGCCUCGC U₅⁻ (SEQ ID NO: 344)
MYC-651 Target: 5'-GTGCAAGCGTTTACTCTCGACAG G₃‴ (SEQ ID NO: 671)
5'-AGGAGGAGAACUUCUACCAGCAGCA A₃‴ (SEQ ID NO: 1653)
3'-UCUCCAUCUUGAAGGUGCUGCU C₅⁻ (SEQ ID NO: 345)
MYC-676 Target: 5'-AGGAGGAACTCCTTCTCCAGCCAGAGC C₃‴ (SEQ ID NO: 672)
5'-CAGCGAGGAUCUGGAAGAAUUUC A₃‴ (SEQ ID NO: 1654)
3'-GUGCUGCCUAUAGCCUUCUUAAAG C₅⁻ (SEQ ID NO: 346)
MYC-731 Target: 5'-CAGCGAGGATATCGTGGAAATTCGA G₃‴ (SEQ ID NO: 673)
5' - UACGUUGCGGUCACCCCUCUC - 3' (SEQ ID NO: 1655)  
3' - AUGCAAAGCCAGUGUGGAAGAGGG - 5' (SEQ ID NO: 347)

MYC-816 Target: 5' - TAGGTTGGCTCACACCTTCCCTT - 3' (SEQ ID NO: 674)

5' - AGACAGUGGGAACAGAUUUCUC - 3' (SEQ ID NO: 1656)  
3' - UCUGUACCACUUGGUCUCAAAG - 5' (SEQ ID NO: 348)

MYC-920 Target: 5' - AGACATGGTGACAGAGTTTCATCT - 3' (SEQ ID NO: 675)

5' - ACCGGAGACGAGACCUCUCAAA - 3' (SEQ ID NO: 1657)  
3' - UGGCCUCUCGUCAUGUGAGGUUUUGAQGC - 5' (SEQ ID NO: 349)

MYC-949 Target: 5' - ACCGGAGACGAGACCCTTCGCT - 3' (SEQ ID NO: 676)

5' - ACGGACCUCAUCAAAACAUCAU - 3' (SEQ ID NO: 1658)  
3' - UGUUUUGUAGUAGUAGCCUGAC - 5' (SEQ ID NO: 350)

MYC-958 Target: 5' - ACGGACCTTCATCATAAAAACATCA - 3' (SEQ ID NO: 677)

5' - UCAAAACAUCAUCAACAGGACUG - 3' (SEQ ID NO: 1659)  
3' - AGGUUUUGUAGUAGUAGCCUGAC - 5' (SEQ ID NO: 351)

MYC-970 Target: 5' - TCAAACATTCATCATAAAAACATCA - 3' (SEQ ID NO: 678)

5' - CAGGACUAUGGAGCGGCUCU - 3' (SEQ ID NO: 1660)  
3' - GUCUCGACCAUCAACCGCCGAGG - 5' (SEQ ID NO: 352)

MYC-987 Target: 5' - CAGGACTGTATGTGGAGCGGCTTCG - 3' (SEQ ID NO: 679)

5' - GUCUGCUACCACUCCAGCUUGAACC - 3' (SEQ ID NO: 1661)  
3' - CAGACGGAGGUGGACGUCCCUAG - 5' (SEQ ID NO: 353)

MYC-1104 Target: 5' - GTCTGGTCCACCACCTTCCAGGACTGTA - 3' (SEQ ID NO: 680)

5' - CCACCCAGGUUACGACCAGGA - 3' (SEQ ID NO: 1662)  
3' - GGUAGGAGUAGAACAUGGACGUGCUCA - 5' (SEQ ID NO: 354)

MYC-1111 Target: 5' - CCACCTCCAGCTTGTACCTGCAGGATC - 3' (SEQ ID NO: 681)

5' - UCACGCUUGAUGGAGGACGAAGAGA - 3' (SEQ ID NO: 1663)  
3' - AGUCGACCAUAUGGACGUCCACGU - 5' (SEQ ID NO: 355)

MYC-1116 Target: 5' - TCCAGGCTTGTACCTGAGGTACGT - 3' (SEQ ID NO: 682)

5' - CCAAGGCUCGCGCCUCGCAAGACUC - 3' (SEQ ID NO: 1664)  
3' - GGUAGGACGGGCGGAGGUCUGAGG - 5' (SEQ ID NO: 356)
MYC-1210 Target: 5'-CCAAGTCCTGCGCCTCGCAAGACTCCA-3' (SEQ ID NO: 683)

5'-CAGCAGCGACUCUGAGGAGGAACAA

MYC-1340 Target: 5'-CAGCAGCGACTCTGAGGAGGAACAAGA-3' (SEQ ID NO: 684)

5'-CGACUCUGAGGAACAAGAAGAU

MYC-1346 Target: 5'-CGACTCTGAGGAGGAACAAGAAGATGA-3' (SEQ ID NO: 685)

5'-CUGAGGAGGAACAAGAAGAUGAGGA

MYC-1351 Target: 5'-CTGAGGAGGAACAAGAAGAAGATGAGGAAG-3' (SEQ ID NO: 686)

5'-GGAACAAGAAGAUGAGGAAGAAAUC

MYC-1358 Target: 5'-GGAAACAAGAAGATGAGGAAGAAATCGA-3' (SEQ ID NO: 687)

5'-AGAAAUCGAUGUUGUUUCUGUGGAA

MYC-1364 Target: 5'-AGAAGATGAGGAAGAAATCGATGTTTCTGT-3' (SEQ ID NO: 688)

5'-UGAGGAAGAAAUCGAUGUUGUUUCU

MYC-1370 Target: 5'-TGAGGAAAGAAATCGATGTTTCTGT-3' (SEQ ID NO: 689)

5'-AGAAATCGATGTTGTTTCTGTGGAAAA

MYC-1376 Target: 5'-AGAAATCGATGTTTCTGTGGAAAAATCGA-3' (SEQ ID NO: 690)

5'-CGAGGCAUGCUGAGGAAGAAAGAGG

MYC-1382 Target: 5'-CGATGTTTCTGTGGAAAAAGGCA-3' (SEQ ID NO: 691)

5'-AAGAGGCAUGCUGAGGAAGAAAGAGG

MYC-1401 Target: 5'-AAGAGGCAUGCUGAGGAAGAAAGGCTC-3' (SEQ ID NO: 692)

5'-GCAGGCUCUGGCAAAGGUCAGAG
3'-CGUCCGAGGACCGUUUUCCAGUCUC A\_G-5' \ (SEQ ID NO: 366)

Myc-1406 Target: 5'-GCAGGCTCCTGGCAAAAGGTCAGAGTC-3' \ (SEQ ID NO: 693)

5'-CUCUGGCAAAAGGUCAGAGUUGG \ UC-3' \ (SEQ ID NO: 1675)
3'-GAGGCCGUUUUCCAGACAGACC \ \ (SEQ ID NO: 367)

Myc-1411 Target: 5'-CTCCTGGCAAAAGGTCAGAGTCTGGAT-3' \ (SEQ ID NO: 694)

5'-GGCAAAAGGUCAGAGUCUGG \ C-3' \ (SEQ ID NO: 368)

Myc-1416 Target: 5'-GGCAAAAGGTCAGAGTCTGGATCACCT-3' \ (SEQ ID NO: 695)

5'-AAGGUCAGUCUGGUACCUUUCUC \ \ A-3' \ (SEQ ID NO: 1677)
3'-UUCAGUCAGACCUAGGA \ G-5' \ (SEQ ID NO: 369)

Myc-1421 Target: 5'-AAGGTCAGAGTCTGGATCACCTTCTGC-3' \ (SEQ ID NO: 696)

5'-CACCAACCUCUCACACCCCAUG \ \ \ A\_C-3' \ (SEQ ID NO: 1678)
3'-GCGUUGGAGUGUCCGUGGAG \ \ \ C\_A-5' \ (SEQ ID NO: 370)

Myc-1457 Target: 5'-CAGCAACCTCCTCACACGCCCACCTG-3' \ (SEQ ID NO: 697)

5'-CUCUCACACGCCCAUCUCA \ \ \ A\_C-3' \ (SEQ ID NO: 1679)
3'-GAGGAGUCGCACGAGGAC \ \ \ G\_U-5' \ (SEQ ID NO: 371)

Myc-1465 Target: 5'-CTCCTCACACGCCCACTGGTACCTTCTGC-3' \ (SEQ ID NO: 698)

5'-CUCCUCUCACUGGAAGGACUA \ \ \ C\_A-3' \ (SEQ ID NO: 1680)
3'-GAGGAGAGCCGUGCCUUGGCUAG \ \ \ A\_C-5' \ (SEQ ID NO: 372)

Myc-1531 Target: 5'-CTCCCTCCTCACTGGGACTATCCATCG-3' \ (SEQ ID NO: 699)

5'-CACUCCGAAGGACUAUCCUGCUGCC \ \ \ C\_C-3' \ (SEQ ID NO: 1681)
3'-UGUGCCUUAGUAGGACGAGG \ \ \ U\_U-5' \ (SEQ ID NO: 373)

Myc-1538 Target: 5'-CAGCAGGACTATCTGGGACTATCCATCG-3' \ (SEQ ID NO: 700)

5'-CUACUCUCUGGCAAGGACUA \ \ \ C\_C-3' \ (SEQ ID NO: 1682)
3'-GAGGAGAGCCGUGCCUUGGCUAG \ \ \ A\_C-5' \ (SEQ ID NO: 374)

Myc-1550 Target: 5'-CTATCCTCGGCGCAGAGGACTATCCATCG-3' \ (SEQ ID NO: 701)

5'-CUCCUCUCACUGGAAGGACUA \ \ \ C\_A-3' \ (SEQ ID NO: 1683)
3'-GAGGAGAGCCGUGCCUUGGCUAG \ \ \ G\_U-5' \ (SEQ ID NO: 375)

Myc-1555 Target: 5'-CTGCGGCAAGAGGGTCAAGTGGGAG \ \ \ C\_U-3' \ (SEQ ID NO: 702)
5'-GCAAGAGGGUCAGUGGACAGUG C_A-3' (SEQ ID NO: 1684)
3'-CGGUCUGCCCAUCUUGUGUUCAC A_G-5' (SEQ ID NO: 376)

MYC-1560 Target: 5'-GCAAGAGGGTCAAGTGGACAGTGTC-3' (SEQ ID NO: 703)

5'-GAGGGUCAGUGGACAGUGUCA A_C-3' (SEQ ID NO: 1685)
3'-UCGCCAGUCAACCUACACCAU C_G-5' (SEQ ID NO: 377)

MYC-1565 Target: 5'-GAGGGTCAGTTGGACAGTGTCAGT3' (SEQ ID NO: 704)

5'-UCAGUGGGAUCAGUUGAAGUGCC A_C-3' (SEQ ID NO: 1686)
3'-AGUUCUGACAGUCACUGACAGA C_U-5' (SEQ ID NO: 378)

MYC-1570 Target: 5'-TCAGTTGGACAGTGTCAGTCCCTGA-3' (SEQ ID NO: 705)

5'-UUGGUCAGUGUCACAGUGAGAC C_A-3' (SEQ ID NO: 1687)
3'-AUCGUCAGACUGACUGACUGCU C_U-5' (SEQ ID NO: 379)

MYC-1575 Target: 5'-TTGGACAGTGTCAGTCCCTGAAGAGGT-3' (SEQ ID NO: 706)

5'-GCAGUGACGUGAAGUGAGGAC A_C-3' (SEQ ID NO: 1688)
3'-ACGUCUGACUGACUGACUGUGU C_G-5' (SEQ ID NO: 380)

MYC-1584 Target: 5'-GTCAGTGTCAGTCCCTGAAGAGGT-3' (SEQ ID NO: 707)

5'-CUGAGCAAGCAGCAGACAAACCGAA C_C-3', (SEQ ID NO: 1689)
3'-GACUGCUAGCGACUGACUGUUGCU C_U-5' (SEQ ID NO: 381)

MYC-1593 Target: 5'-CTGAGACAGATCAGCAACCGAAAAA-3' (SEQ ID NO: 708)

5'-CAGAUCAGGAAACACCGAGAAUGCA A_C-3' (SEQ ID NO: 1690)
3'-UCGUCGUGUUGGGGCUUACAG C_G-5' (SEQ ID NO: 382)

MYC-1599 Target: 5'-CAGATCAGGAAACACCGAGAAATGCACC-3' (SEQ ID NO: 709)

5'-GUGUCCGGAACCGAGAAUGUGA C_C-3' (SEQ ID NO: 1691)
3'-ACGAGCCUGGUGUUGCUUACAG C_U-5' (SEQ ID NO: 383)

MYC-1634 Target: 5'-GTCCTCGGAGCCGGAGATGTCA-3' (SEQ ID NO: 710)

5'-CGGACCCGAGGAGGAUAUGGCA A_C-3' (SEQ ID NO: 1692)
3'-GCCGUGCGGUUGCACUAGCU C_G-5' (SEQ ID NO: 384)

MYC-1639 Target: 5'-CGGACCCGAGGAGGAUAUGGCA A_C-3' (SEQ ID NO: 1693)
3'-CGGUCUCCGUUGCUUAGCU C_U-5' (SEQ ID NO: 385)
MYC-1687 Target: 5' -GCCAGAGGAGGAGCTAAAACGGA-3' (SEQ ID NO: 712)
5' -GGAGGAACGAGCUAAAACGGAGCUU (SEQ ID NO: 1694)
3' -CCUCUUGCUAGAAGCCUGAA (SEQ ID NO: 386)

MYC-1693 Target: 5' -GGAGGAACGAGCTAAAACGGAGCTTTT-3' (SEQ ID NO: 713)
5' -UCUUAGGAGCUUUUUCGCCUGA (SEQ ID NO: 1695)
3' -UUUCUCUGAUUUUGGCGAAAC (SEQ ID NO: 387)

MYC-1698 Target: 5' -GGAGGAACGAGCTAAAACGGAGCTTTTTGCC-3' (SEQ ID NO: 714)
5' -CUUUACGAGCUUUUUGCCUGAC (SEQ ID NO: 1696)
3' -GAUUUUGCCUGAAAACGGGACG (SEQ ID NO: 388)

MYC-1704 Target: 5' -CTAAAACGGAGCTTTTTGCCCCTGC-3' (SEQ ID NO: 715)
5' -UGGACCAGAUCCCGGAGUUGAAAA (SEQ ID NO: 1697)
3' -CACUGGUCUAGGGCCUCAACCUUUU (SEQ ID NO: 389)

MYC-1709 Target: 5' -ACGGAGCTTTTTTGGCCCTGCGAGCA-3' (SEQ ID NO: 716)
5' -GUGACCAGAUCGCCGAGUUUGAAAA (SEQ ID NO: 1698)
3' -UGCCUCGAAAAACGGGACGCAUGC (SEQ ID NO: 390)

MYC-1729 Target: 5' -GTGACCAGATCCCGGAGTTGGAAAACAATGAAAAGGCCACAGCAUACA (SEQ ID NO: 717)
5' -GUGACCAGAUCGCCGAGUUUGAAAA (SEQ ID NO: 1699)
3' -GUCUAGGGCCUCUCAACCUUUUUG (SEQ ID NO: 391)

MYC-1734 Target: 5' -CAGATCCCCGGAGTTGGAAAACAATGAAAAGGCCACAGCAUACA (SEQ ID NO: 718)
5' -CCC GGAGAUUUUGAAAACAUAUGA (SEQ ID NO: 1700)
3' -GGGCCUCUCAACCUUUGUUUUG (SEQ ID NO: 392)

MYC-1739 Target: 5' -CCCGGAGTTGGAAAACAATGAAAAGGCCACAGCAUACA (SEQ ID NO: 719)
5' -CAAGGUAGUUAUCUUAUUUGAACAGG (SEQ ID NO: 1701)
3' -GUUCCAAUUGAGAULAUUUGUUGG (SEQ ID NO: 393)

MYC-1769 Target: 5' -CAAGGTAGTTATCCTTAAAAAAGCCAC -3' (SEQ ID NO: 720)
5' -UAGUUUCUUUUUACGCCACAGG (SEQ ID NO: 1702)
3' -AUCAUAGGAAUUUUUGCGGUCG (SEQ ID NO: 394)

MYC-1774 Target: 5' -TAGTTATCTTTAAAAAGCCACAGCAT-3' (SEQ ID NO: 721)
5' -AUCCUUUAAAAGCCACAGCAUAAC (SEQ ID NO: 1703)
3'-UAGGAAUUUUUUCGGUGUCGUAGU A_{G-5}', (SEQ ID NO: 395)

MYC-1779 Target: 5'-ATCCTTAAAAAAAGCCACAGCATACTC-3' (SEQ ID NO: 722)

5'-UAAAAAGGCCAGCAUCAUCUG C_{A-3}' (SEQ ID NO: 1704)
3'-AUUUUUUCGGUGUCGUAGUAGGAC A_{G-5}', (SEQ ID NO: 396)

MYC-1784 Target: 5'-TAAAAAGCCACAGCATACTCTTGC-3' (SEQ ID NO: 723)

5'-AAGCCACAGCAUCAUCUGGUCCGA A_{A-3}' (SEQ ID NO: 1705)
3'-UUCCGGUCGUAGUAGGACGGAAAA G_{G-5}', (SEQ ID NO: 397)

MYC-1789 Target: 5'-AAGCCACAGCAUCCUGUCCGUCCGA A_{A-3}' (SEQ ID NO: 1706)
3'-GCUAGUAGGACGGACGCCGUUCG u_{C-5}', (SEQ ID NO: 398)

MYC-1795 Target: 5'-CAGCATACTCCTCGTCCGTCAAGCAG-3' (SEQ ID NO: 724)

5'-AUCCUUGUCCGUCCGACAGGAGGC C_{C-3}' (SEQ ID NO: 1707)
3'-UAGGACAGCCAGGUUCCGUCCGAG u_{U-5}', (SEQ ID NO: 399)

MYC-1803 Target: 5'-ATCCTGTCCCGGTCCAGCAGGAGCA- 3' (SEQ ID NO: 726)

5'-GUCCGUCAAGCCAGAGGACCAAA C_{R-3}' (SEQ ID NO: 1708)
3'-CAGCAGGAGCUUCCGUCCGUUUUC G_{A-5}', (SEQ ID NO: 400)

MYC-1808 Target: 5'-GTCCGTCGTCGAGACGGAGCAGAAAA C_{C-3}' (SEQ ID NO: 727)
3'-AAGCAGGAGGCAAAAAGCAUUUUC C_{A-5}', (SEQ ID NO: 401)

MYC-1816 Target: 5'-AAGCAGGAGGCAAAAAGCTCATTTCTG- 3' (SEQ ID NO: 728)

5'-GGAGCAGGAGCAAAAAGCUUUGUAGA C_{G-3}', (SEQ ID NO: 1710)
3'-CCUCGUGUUGCUAGUAAAGAAGCUUUC G_{U-5}', (SEQ ID NO: 402)

MYC-1823 Target: 5'-GGAGCAGGAGCAGCTCATTCTGTGGA- 3' (SEQ ID NO: 729)

5'-AAAGGCUUUGUUGAGGACGUU C_{A-3}' (SEQ ID NO: 1711)
3'-UUUCGGAAGAGACUUGCUCGAAG C_{A-5}', (SEQ ID NO: 403)

MYC-1828 Target: 5'-AAAGGCTCATCTTCTGAAGGACTTGT- 3' (SEQ ID NO: 730)

5'-UCUUUCUGAGGAGCUCUGGUCCG A_{C-3}', (SEQ ID NO: 1712)
3'-AGUAAAGACUUCGUAGAACGAG C_{U-5}', (SEQ ID NO: 404)

MYC-1834 Target: 5'-TCATTCTGAAGGACTTGGTGGGGA-3' (SEQ ID NO: 731)
5′-CUGAAGGGACUUGUUGCGGAAACG C^A-3′ (SEQ ID NO: 1713)
3′-GACUCUCUCGGAAACCGCCCUUGCn u^G-5′ (SEQ ID NO: 405)

MYC-1840 Target: 5′-CTGAAGGACTTGTTGCGGAAACGAC-3′ (SEQ ID NO: 732)
5′-GAGGACUUGUUGCGGAAACGAG c^C-3′ (SEQ ID NO: 1714)
3′-CUCCUGAACAACGCCUUUGCCUCUCn u^U-5′ (SEQ ID NO: 406)

MYC-1845 Target: 5′-GAGGACTTGTTGCGGAAACGAC-3′ (SEQ ID NO: 733)
5′-CUUGUUGCGGAAACGACCAG c^C-3′ (SEQ ID NO: 1715)
3′-GAACAGCUCUUUGCCUCUCUGUCn A_R-5′ (SEQ ID NO: 407)

MYC-1850 Target: 5′-UGCGGAAACGACGAGAACAG-3′ (SEQ ID NO: 734)
5′-UCGGGACGAGAACGAGAACAGUUGAA c^A-3′ (SEQ ID NO: 1716)
3′-AGGCCUUUUGCGGAAACGACACUUCn A_R-5′ (SEQ ID NO: 408)

MYC-1855 Target: 5′-TGCGGAAACGACGAGAACAGTT-3′ (SEQ ID NO: 735)
5′-ACAAACTTGAAACCGACTACGGAACTCTT-3′ (SEQ ID NO: 736)
5′-UGUUUGAACUUGUCGAUGCCUUGAG . . . (SEQ ID NO: 410)

MYC-1882 Target: 5′-ACAAACTTGAAACCGACTACGGAACTCTT-3′ (SEQ ID NO: 737)
5′-CACCUACGGAAACGUUGCCUUGGUGAG c^A-3′ (SEQ ID NO: 1718)
3′-AACUUGUGCAUGCCUCUUGAACACG G_A-5′ (SEQ ID NO: 411)

MYC-1888 Target: 5′-TTGAACACTACGGAACTCTTGTGCGT-3′ (SEQ ID NO: 738)
5′-GGAACTCTTGTGCGTAAAGGAAAAGTAA-3′ (SEQ ID NO: 739)
5′-GGACUCUUGGCUAGGAAAAGAAGU c^C-3′ (SEQ ID NO: 1720)
3′-CCUUUGAGAAACCGCUUUUCUCUUUCAn u^U-5′ (SEQ ID NO: 412)

MYC-1900 Target: 5′-GGAACTCTTGTGCGTAAAGGAAAAGTAA-3′ (SEQ ID NO: 739)
5′-GUUGGCGGAAAGGAAGCUAAGGAG c^C-3′ (SEQ ID NO: 1721)
3′-GAACACCGCUUUCUUUUCAUCCCUCun u^U-5′ (SEQ ID NO: 413)

MYC-1906 Target: 5′-CTTGTGGCTAAAGGAAAAGTAAAGAAA-3′ (SEQ ID NO: 740)
5′-GCGUAGAAAAGUAAGGAAAAACGA c^C-3′ (SEQ ID NO: 1722)
3′-CGCAUUCUUUUCGUUCUUUCGU A_R-5′ (SEQ ID NO: 414)
MYC-1911 Target: 5'-GCGTAAGGAAAAGTAAGGAAAACGATT-3' (SEQ ID NO: 741)
3'-UUCAUUCCUUUUGCUAGAGAUUG-5' (SEQ ID NO: 1723)
MYC-1921 Target: 5'-AGGAAAACGAUUCCUAACAGAAACGATT-3' (SEQ ID NO: 742)
3'-UCCUUUUGCUAGAGAUUG-5' (SEQ ID NO: 1416)
MYC-1926 Target: 5'-AACGAAUCCUUUACAAAAAGUC-3' (SEQ ID NO: 1725)
3'-UUGCUUUACGUUACUUACAG-5' (SEQ ID NO: 417)
MYC-1937 Target: 5'-TCCCTCTAAGAATGCTCTGAGCAA-3' (SEQ ID NO: 744)
5'-UGCCUGAGCAUUCAACAGAAACGATT-3' (SEQ ID NO: 1726)
3'-AGGAAGAUUGCUUACAGACUG-5' (SEQ ID NO: 418)
MYC-1944 Target: 5'-AACAGAAATGTCCTGAGCAATCACCTA-3' (SEQ ID NO: 745)
5'-GUCCUGAGCAAUCACCUAUGAACUUGAAAUG-3' (SEQ ID NO: 1727)
3'-AGGAAGAUUGGUUACAGACUG-5' (SEQ ID NO: 420)
MYC-1953 Target: 5'-GTCCCTGAGCAATCACCTAAGAATGCTCTGAGCAA-3' (SEQ ID NO: 746)
5'-AGCAATCACCTAAGAATGCTCTGAGCAA-3' (SEQ ID NO: 1728)
3'-UGCCUGAGCAUUCAACAGAAACGATT-3' (SEQ ID NO: 1729)
MYC-1959 Target: 5'-AGCAATCACCTAAGAATGCTCTGAGCAA-3' (SEQ ID NO: 747)
5'-AGCAATCACCTAAGAATGCTCTGAGCAA-3' (SEQ ID NO: 1729)
3'-UGCCUGAGCAUUCAACAGAAACGATT-3' (SEQ ID NO: 1730)
MYC-1965 Target: 5'-CACCTATGAACTTGTTTCAAATGCATG-3' (SEQ ID NO: 748)
5'-AACGAAUCCUUUACAAAAAGUC-3' (SEQ ID NO: 1730)
3'-UUGCUUUACGUUAAACAGAUUGAUCGUUACUG-5' (SEQ ID NO: 422)
MYC-1970 Target: 5'-ATGAACTTGTTTCAAATGCATGATCAA-3' (SEQ ID NO: 749)
5'-AAAGAAGCUUGGUUAAAAGUC-3' (SEQ ID NO: 1731)
3'-UACUUGAACAAAAUGGUUACGUAG-5' (SEQ ID NO: 423)
3'-AACAAAGUUUACGUACUAGUUUACG U-5' (SEQ ID NO: 424)

MYC-1976 Target: 5'-TTGTTTCAAATGCATGATCAAATGCAA-3' (SEQ ID NO: 751)

5'-UCAAUGCAUGACAAUGCAACCU A-3' (SEQ ID NO: 1733)
3'-AGUUUACGUAGUUUACGUUGGAp GU-5' (SEQ ID NO: 425)

MYC-1981 Target: 5'-TCAATGATGATCAAATGCAACCTCA-3' (SEQ ID NO: 752)

5'-AUGAUCAAAUGCAACCUACCU A-3' (SEQ ID NO: 1734)
3'-UACAUAGUUUAGUUGGAGUGUUGGA AC-5' (SEQ ID NO: 426)

MYC-1989 Target: 5'-TCAAATGCAACCTCACAACCTTG-3' (SEQ ID NO: 753)

5'-AAAUGCAACCUACCUACCUAGGUUACCU C-5' (SEQ ID NO: 1735)
3'-GUUUGAGUUGGAGUGGAGGACCA CG CC-5' (SEQ ID NO: 427)

MYC-1994 Target: 5'-AAATGCAAACCTCACAACTTGCTGA-3' (SEQ ID NO: 754)

5'-UACCUCACUACCUACGUUGGCACGUUACUUU A-3' (SEQ ID NO: 1736)
3'-UGUUGGAGUUGGAGUGGAGGACCA CCG AC-5' (SEQ ID NO: 428)

MYC-2001 Target: 5'-AACCTCAACACTTTTGCTGACTGCTGA-3' (SEQ ID NO: 755)

5'-CAACACCUUCGUCAGGUCAGGCACGUUACUUU A-3' (SEQ ID NO: 1737)
3'-GUGUUGGACCGACUCGACACGUUGUUGGU CCAC-5' (SEQ ID NO: 429)

MYC-2006 Target: 5'-CAACACTTTTGCTGACTGCTGA-3' (SEQ ID NO: 756)

5'-UUGCCUGAGUCAGGACUUGCACAAAGA A-3' (SEQ ID NO: 1738)
3'-AACCAGACUCAGACAACGUUGCCACACAUACGUUU AC-5' (SEQ ID NO: 430)

MYC-2013 Target: 5'-TTGGCTGAGTCTTGAGACTGAATT-3' (SEQ ID NO: 757)

5'-GAGUCUUGGACUAAAGAAGAUUUAGC A-3' (SEQ ID NO: 1739)
3'-CUCAGAAGUCUUCUAUUCAAAUUGU CC-5' (SEQ ID NO: 431)

MYC-2019 Target: 5'-GAGTCTTGAGCTTGAGACTGAATT-3' (SEQ ID NO: 758)

5'-GAGUCUUGGACUAAAGAAGAUUUAGC A-3' (SEQ ID NO: 1740)
3'-CUCAGAAGUCUUCUAUUCAAAUUGU CC-5' (SEQ ID NO: 432)

MYC-2026 Target: 5'-GAGACTGAAAGATTAGCTAGAACTGA-3' (SEQ ID NO: 759)

5'-UGAAAGAUUUAGGCAUAAUGUAAAC C-3' (SEQ ID NO: 1741)
3'-ACUUUCUAAUGGUUUACAUUUUG AC-5' (SEQ ID NO: 433)

MYC-2031 Target: 5'-TGAAGATTTAGCATAATGGAAC-3' (SEQ ID NO: 760)
- MYC-2040 Target: 5'-'TAGCCATAATGAAACTGCTCAAATTT-3' (SEQ ID NO: 761)
- MYC-2048 Target: 5'-'ATGTAAACTGCTCAAATTGGACTTG-3' (SEQ ID NO: 762)
- MYC-2054 Target: 5'-'-ATGTAAACTGCTCAAATTGGACTTTG-3' (SEQ ID NO: 763)
- MYC-2059 Target: 5'-'CTCAAATTGGACTTTGGGCATAAAGA-3' (SEQ ID NO: 764)
- MYC-2066 Target: 5'-'TGGAATCTTGGGCATAAAAAGACTTTT-3' (SEQ ID NO: 765)
- MYC-2073 Target: 5'-'TGGGCATAAAAAGACTTTTATGCTT-3' (SEQ ID NO: 766)
- MYC-2078 Target: 5'-'ATAAAAGACCTTTTTATGCTTACCATCTTTTTTTTT-3' (SEQ ID NO: 767)
- MYC-2083 Target: 5'-'AGAACTTTTTTTATGCTTACCATCTTTTTTT-3' (SEQ ID NO: 768)
- MYC-2089 Target: 5'-'-TTTTATGCTTACCATCTTTTTTTTT-3' (SEQ ID NO: 769)
MYC-2094  Target: 5'-ATGCTTACCATCTTTTTTTTTCTTTTA-3' (SEQ ID NO: 770)
3'-'AUGGUAGAAAAAAAGAAAAUGU C3' (SEQ ID NO: 444)

MYC-2099  Target: 5'-TACCATCTTTTTTTTCTTTACAGA-3' (SEQ ID NO: 771)
3'-'GAAAATAAGAAAUUGUUAAAC  A3' (SEQ ID NO: 445)

MYC-2105  Target: 5'-CTTTTTTTTTCTTTAACAGATTTGTA-3' (SEQ ID NO: 772)
3'-'AAGAAAUUGUCUAAACAUAAAUUCUn  A-5' (SEQ ID NO: 446)

MYC-2114  Target: 5'-TTCTTTAACAGATTTGTATTTAAGAAT-3' (SEQ ID NO: 773)
3'-'UGUAUUUAAGAAUUGUUUUAAAA  C3' (SEQ ID NO: 447)

MYC-2120  Target: 5'-AACAGATTGTATTTAAGAATTGTTTT-3' (SEQ ID NO: 774)
3'-'UGUUACAAAGAGACAUUUAUAACGGU  A-5' (SEQ ID NO: 450)

MYC-2135  Target: 5'-AAGAATTGTTTTTAAAAAAATTTTAAGA-3' (SEQ ID NO: 775)
3'-'ACAAUGUUUCUGUAAAUAUUGCC  C3' (SEQ ID NO: 1757)

MYC-2167  Target: 5'-ACAATGTTTCTCTGTAAATATTGCCAT-3' (SEQ ID NO: 776)
3'-'CUCUGUAUAAUUGGCAUUAAGUGU C3' (SEQ ID NO: 1758)

MYC-2176  Target: 5'-CTCTGTAAATATTGCCATTAAATGGA-3' (SEQ ID NO: 777)
3'-'UUAAUAUUGCCAUUAAGUGAAAUAU  A3' (SEQ ID NO: 1759)

MYC-2181  Target: 5'-TAAATATTGCCATTAATGTAAAC-3' (SEQ ID NO: 778)
3'-'UGCCAUAUAAUGUAUAACUUAUU  C3' (SEQ ID NO: 1760)
3’-ACGGUAUUACAUUUAAUGAAAUU₅' (SEQ ID NO: 453)
MYC-2188 Target: 5’-TGCCATTAAATGTAATAACTTTATA₃’ (SEQ ID NO: 780)
5’-CUUUAUAUAAACGUUUAUGACAUU₃’ (SEQ ID NO: 1762)
5’-GAAUUUAAUUGCAAAUAUCGUA₃’ (SEQ ID NO: 454)
MYC-2207 Target: 5’-CTTTAATAAAAACGTTTATAGCAGTAC₃’ (SEQ ID NO: 781)
5’-CACAGAAUUCAAAGUGAUAUA₃’ (SEQ ID NO: 1763)
5’-GUUGUUAACGUUGGAAU₃’ (SEQ ID NO: 455)
MYC-2233 Target: 5’-CACAGAATTTCAATCCTAGTATAT₃’ (SEQ ID NO: 782)
5’-UUGGAUUAUAAUAUCCAUGAUUU₃’ (SEQ ID NO: 456)
MYC-2260 Target: 5’-ACCTAGTATTAGGTAATTAAACCC₃’ (SEQ ID NO: 783)
5’-AAUAAGGUCAUAAACCCAUUU₃’ (SEQ ID NO: 1765)
5’-CAUGAUAUUUGGGAUU₃’ (SEQ ID NO: 457)
MYC-2267 Target: 5’-ATTATAGGTACTTAAAAACCCCAAACTT₃’ (SEQ ID NO: 784)
5’-GUACUAUAAACCCCUAUAUUUUUU₃’ (SEQ ID NO: 1766)
5’-CAUGAUAUUUGGGAUAA₃’ (SEQ ID NO: 458)
MYC-2274 Target: 5’-GTACTTAAAACCCCTAATTTTT₃’ (SEQ ID NO: 785)
5’-AACCCUAUUUUUUUUUUUAAGUA₃’ (SEQ ID NO: 1767)
5’-UUUGGGAUUAAAAAAUUUCAU₃’ (SEQ ID NO: 459)
MYC-2282 Target: 5’-AACCCCTATTTTTTTTTTTTTTT₃’ (SEQ ID NO: 786)
5’-UAUUUUUUUUUUUUUUAAGUCAUU₃’ (SEQ ID NO: 1768)
5’-UUUAAUUUUAGUCAUUUGCUUUU₃’ (SEQ ID NO: 1769)
5’-AAAUAUUUAACGUAAACCGAAAA₃’ (SEQ ID NO: 461)
MYC-2287 Target: 5’-TAAATTTTTTTTTTTTATAAAGTAC₃’ (SEQ ID NO: 787)
5’-UAAUUUUAGUCAUUUGCUUUU₃’ (SEQ ID NO: 1769)
5’-AAUAUUAAACGUAAACCGAAAA₃’ (SEQ ID NO: 461)
MYC-2295 Target: 5’-TTTTTTTTGTACATTTGGTTTAA₃’ (SEQ ID NO: 788)
5’-UAAAGUCAUUUGCUUUUUAAAGU₃’ (SEQ ID NO: 1770)
5’-AAUUCAUGUAAACGAAAUUAUCA₃’ (SEQ ID NO: 462)
MYC-2300 Target: 5’-TTAAGTACATTTTGCTTTTTAAAAAGTG₃’ (SEQ ID NO: 789)
5'-ACAUUUUGCUUUUUAAGUGAUUUU cC-3' (SEQ ID NO: 1771)
3'-UGUAAAACGAAAAUUCAACUAAA A_R-5' (SEQ ID NO: 463)
MYC-2306 Target: 5'-'-ACATTTTGGCTTTTTAAAGTGTGTTTTTTT-3' (SEQ ID NO: 790)
5'-UGCUUUUUAAGUGAUUUUUC cC-3' (SEQ ID NO: 1772)
3'-ACGAAAAUUCACUAAAAAAGAn-5' (SEQ ID NO: 464)
MYC-2312 Target: 5'-'-TGCTTTTTAAGTTGATTTTTTTCTAT-3' (SEQ ID NO: 791)
5'-UCUAUUGUUUUGAAAAAUAAA cC-3' (SEQ ID NO: 1773)
3'-AGAUAAACAAAUCUUUUAUUUU A_U-5' (SEQ ID NO: 465)
MYC-2334 Target: 5'-'-TCTATTTTTAGAAAAATAAAATA-3' (SEQ ID NO: 792)
5'-UGUUUUGAGAAAAAAUAUAACCUA cA-3' (SEQ ID NO: 1774)
3'-ACAAAAAUUUCUUUUUAUUUAUG cC-5' (SEQ ID NO: 466)
MYC-2339 Target: 5'-'-TGTTTTTAGAAAAAATAAAATCTGG-3' (SEQ ID NO: 793)
5'-GAAAAAAUAUAACUCGGAAAU cA-3' (SEQ ID NO: 1775)
3'-CUUUUUAUUAUUGACGCUUUU A_U-5' (SEQ ID NO: 467)
MYC-2347 Target: 5'-'-GAAAAATAAAAAATAAC TGGCAATAAAT-3' (SEQ ID NO: 794)
5'-AAAUAACUGGCAAUAUAACAUUG cA-3' (SEQ ID NO: 1776)
3'-UUUUAUUGACGGUUAUAGAUAC cC-5' (SEQ ID NO: 468)
MYC-2355 Target: 5'-'-AAAAATACTGGCAATATATCATGGAC-3' (SEQ ID NO: 795)
5'-GGCAAAUAUAUCAGAGCCAACUC cC-3' (SEQ ID NO: 1777)
3'-CGGCUUUUAUAUAGACGGGUUUAG A_R-5' (SEQ ID NO: 469)
MYC-2364 Target: 5'-'-GGCAAAATATATCATGGACGCAAATCTT-3' (SEQ ID NO: 796)
5'-AUUAUCAGGACCCAAUAUCUUUU cC-3' (SEQ ID NO: 1778)
3'-UUAGUAAACUGGGUUAAGAUUUUn cU-5' (SEQ ID NO: 470)
MYC-2371 Target: 5'-'-ATATCTAGGCAAATCTTTAAAAAAT-3' (SEQ ID NO: 797)
5'-UGAGCCCAAUCUUUAAAAAAAN cC-3' (SEQ ID NO: 1779)
3'-AUCUGCCGAAAAGAAUUUUUUUn cU-5' (SEQ ID NO: 471)
MYC-2377 Target: 5'-'-TTGAGGCAATCTTTAAAAAAATAA-3' (SEQ ID NO: 798)
5'-UACUCGCUAGUAAUUCGCCGGA A_C-3' (SEQ ID NO: 1780)
3'-AUUGAGCGACAUAAUAGGUCGU C_U-5' (SEQ ID NO: 472)
MYC-188 Target: 5'-TAACTCGCTGTAGTAATTCCAGCGAGA-3' (SEQ ID NO: 799)
5'-AACUCGCUAGUAUUCCAGCGAG C^A-3' (SEQ ID NO: 1781)
3'-UUGAGCGACAUUAAGGUCGCUC U_C-5', (SEQ ID NO: 473)
MYC-189 Target: 5'-AACTCGCTGTAGTAATTCCAGCGAG-3' (SEQ ID NO: 800)
5'-ACUCGCUGUAGUAUUCCAGCGAG A^A-3' (SEQ ID NO: 1782)
3'-UGAGCGACAUUAAGGUCGCUC C_C-5', (SEQ ID NO: 474)
MYC-190 Target: 5'-ACTCGCTGTAGTAATTCCAGCGAG-3' (SEQ ID NO: 801)
5'-CUCGCUGUAGUAUUCCAGCGAG A^A-3' (SEQ ID NO: 1783)
3'-GAGCGACAUUAAGGUCGCUC C_G-5', (SEQ ID NO: 475)
MYC-191 Target: 5'-CTCGCTGTAGTAATTCCAGCGAGG-3' (SEQ ID NO: 802)
5'-UCGCUGUAGUAUUCCAGCGAG A^C-3' (SEQ ID NO: 1784)
3'-AGCGACAUUAAGGUCGCUCU_U_C-5', (SEQ ID NO: 476)
MYC-192 Target: 5'-TCGCTGTAGTAATTCCAGCGAGG-3' (SEQ ID NO: 803)
5'-CGCUGUAGUAUUCCAGCGAGG C^A-3' (SEQ ID NO: 1785)
3'-GCACAUUAAGGUCGCUCUCGU U_C-5', (SEQ ID NO: 477)
MYC-193 Target: 5'-CGCTGTAGTAATTCCAGCGAGG-3' (SEQ ID NO: 804)
5'-GCUGUAGUAUUCCAGCGAGGC A^C-3' (SEQ ID NO: 1786)
3'-CGACAUUAAGGUCGCUCUCGU U_G-5', (SEQ ID NO: 478)
MYC-194 Target: 5'-GCTGTAGTAATTCCAGCGAGG-3' (SEQ ID NO: 805)
5'-CGUGUAGUAUUCCAGCGAGGC C^A-3' (SEQ ID NO: 1787)
3'-GACAUUAAGGUCGCUCUCGU U_C-5', (SEQ ID NO: 479)
MYC-195 Target: 5'-CTGTAGTAATTCCAGCGAGG-3' (SEQ ID NO: 806)
5'-AGCUUCACCAACAGGAACUAGACC A^A-3' (SEQ ID NO: 1788)
3'-UCGAAGGGUUGGUCUUGAUACUGG A_G-5', (SEQ ID NO: 480)
MYC-612 Target: 5'-AGCTTCACCAACAGGAACTATGACCTC-3' (SEQ ID NO: 807)
5'-GCUUACCAACAGGAACUAGACC A^A-3' (SEQ ID NO: 1789)
3'-CGAAGGGUUGGUCUUGAUACUGG C_G-5', (SEQ ID NO: 481)
MYC-613 Target: 5'-GCTTCACCAACAGGAACTATGACCTG-3' (SEQ ID NO: 808)
5'-CUUCAACCAACAGGAACUAGACC A^C-3' (SEQ ID NO: 1790)
3' -GAAGGUUGUUGCUUGAUCUGGAG<sub>C-U-5'</sub> (SEQ ID NO: 482)

**MYC-614** Target: 5' -CTTCACCAACAGGAATGACCTCG-3' (SEQ ID NO: 809)

5' -UUCACCAACAGGAUUGACCUG<sup>CU</sup>A<sub>A-3'</sub> (SEQ ID NO: 1791)
3' -AGUGGUUGUUGCUUGAUCUGGAGC<sub>G-5'</sub> (SEQ ID NO: 483)

**MYC-615** Target: 5' -TTTACCAACAGGAATGACCTCG-3' (SEQ ID NO: 810)

5' -UCACCAACAGGAUUGACCUG<sup>CU</sup>A<sub>C-3'</sub> (SEQ ID NO: 1792)
3' -AGUGGUUGUUGCUUGAUCUGGAGC<sub>G-5'</sub> (SEQ ID NO: 484)

**MYC-616** Target: 5' -TCACCAACAGGAATGACCTCG-3' (SEQ ID NO: 811)

5' -UCACCAACAGGAUUGACCUG<sup>CU</sup>G<sub>C-3'</sub> (SEQ ID NO: 1793)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>A-U-5'</sub> (SEQ ID NO: 485)

**MYC-617** Target: 5' -ACACACAGGAATGACCTCGACT-3' (SEQ ID NO: 812)

5' -CCACCAACAGGAUUGACCUG<sup>G-A-3'</sup>C<sub>A-3'</sub> (SEQ ID NO: 1794)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>G-U-5'</sub> (SEQ ID NO: 486)

**MYC-618** Target: 5' -ACACACAGGAATGACCTCGACT-3' (SEQ ID NO: 813)

5' -CAACCAACAGGAUUGACCUG<sup>G-A-3'</sup>C<sub>A-3'</sub> (SEQ ID NO: 1795)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>G-U-5'</sub> (SEQ ID NO: 487)

**MYC-619** Target: 5' -CAACCAACAGGAATGACCTCGACT-3' (SEQ ID NO: 814)

5' -CAACCAACAGGAUUGACCUG<sup>G-A-3'</sup>C<sub>A-3'</sub> (SEQ ID NO: 1796)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>G-U-5'</sub> (SEQ ID NO: 488)

**MYC-620** Target: 5' -CAACCAACAGGAATGACCTCGACT-3' (SEQ ID NO: 815)

5' -CAACCAACAGGAUUGACCUG<sup>G-A-3'</sup>C<sub>A-3'</sub> (SEQ ID NO: 1797)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>G-U-5'</sub> (SEQ ID NO: 489)

**MYC-621** Target: 5' -CAACCAACAGGAATGACCTCGACT-3' (SEQ ID NO: 816)

5' -CAACCAACAGGAUUGACCUG<sup>G-A-3'</sup>C<sub>A-3'</sub> (SEQ ID NO: 1798)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>G-U-5'</sub> (SEQ ID NO: 490)

**MYC-622** Target: 5' -CAACCAACAGGAATGACCTCGACT-3' (SEQ ID NO: 817)

5' -CAACCAACAGGAUUGACCUG<sup>G-A-3'</sup>C<sub>A-3'</sub> (SEQ ID NO: 1799)
3' -GGUUGUUGCUUGAUCUGGAGCU<sub>G-U-5'</sub> (SEQ ID NO: 491)

**MYC-623** Target: 5' -CAACCAACAGGAATGACCTCGACT-3' (SEQ ID NO: 818)
5'-AGGAAACUAUGACCUCGACUACGACU^A^-3' (SEQ ID NO: 1800)
3'-UCCUUGAUAUCUGCAGGACUGAUGCGUGA $^C_C$-5' (SEQ ID NO: 492)

MYC-624 Target: 5'-AGGAAACTATGACCTCGACTACGACTCG-3' (SEQ ID NO: 819)

5'-GGAACUUGACCCUCGACUACGACU^A^-3' (SEQ ID NO: 1801)
3'-CCUUGAUACUGGAGCGUACUGGAG $^C_C$-5' (SEQ ID NO: 493)

MYC-625 Target: 5'-GGAACATATGACCTCGACTACGACTCGG-3' (SEQ ID NO: 820)

5'-GAAACUAUGACCCUCGACUACGACUG $^A^-3'$ (SEQ ID NO: 1802)
3'-CUUUGAUACUGGAGCGUACUGGAG $^G_A$-5' (SEQ ID NO: 494)

MYC-626 Target: 5'-GAAACTATGACCTCGACTACGACTCGGT-3' (SEQ ID NO: 821)

5'-ACUAUGACCCUCGACUACGACU^A^-3' (SEQ ID NO: 1804)
3'-UGAUACUGGACUGAUGCGAGC $^G_C$-5' (SEQ ID NO: 496)

MYC-628 Target: 5'-ACTATGACCTCGACTACGACTCGGTGC-3' (SEQ ID NO: 823)

5'-CUAUGACCUCCUCGACUACGACUGG $^A^-3'$ (SEQ ID NO: 1805)
3'-GAUACUGGACUGAUGCGAGCCACp $^U_G$-5' (SEQ ID NO: 497)

MYC-627 Target: 5'-ACTATGACCTCGACTACGACTCGGT-3' (SEQ ID NO: 822)

5'-GCGAGGAUAUCUGGAGAAAUUCGA $^A^-3'$ (SEQ ID NO: 1806)
3'-CGCUCUCAUAUCGACUUUAAAGCU $^G_G$-5' (SEQ ID NO: 498)

MYC-733 Target: 5'-GCGAGGATATCTGGAGAAATTCGAC-3' (SEQ ID NO: 825)

5'-CGGAGGAUAUCUGGAGAAAUUCGAG $^A^-3'$ (SEQ ID NO: 1807)
3'-GGCUCUCAUAAGCUCUUUAAAGCC $^G_R$-5' (SEQ ID NO: 499)

MYC-734 Target: 5'-CGGAGGATATCTGGAGAAATTCGAGCT-3' (SEQ ID NO: 826)

5'-GAGGAUAUCUGGAGAAAUUCGAGC $^A^-3'$ (SEQ ID NO: 1808)
3'-CUCUCUAGACCUCUUAAGCUCG $^A_C$-5' (SEQ ID NO: 500)

MYC-735 Target: 5'-GAGGATATCTGGGAGAAATTCGAGCTG-3' (SEQ ID NO: 827)

5'-AGGGAUAUCUGGAGAAAUUCGCUGA $^A^-3'$ (SEQ ID NO: 1809)
3'-UCCUUAUGACCUUUAAGCGUGA $^G_C$-5' (SEQ ID NO: 501)
MYC-736 Target: 5’-AGGATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 828)
3’-GGUAUCUGGAAGAAUUCGAGCCUGA
c1-3’ (SEQ ID NO: 1810)
MYC-737 Target: 5’-GGATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 829)
3’-GUAAUCUGGAAGAAUUCGAGCCUGA
c1-3’ (SEQ ID NO: 1811)
MYC-738 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 830)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1812)
MYC-739 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 831)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1813)
MYC-740 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 832)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1814)
MYC-741 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 833)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1815)
MYC-742 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 834)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1816)
MYC-743 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 835)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1817)
MYC-744 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 836)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1818)
MYC-745 Target: 5’-ATATCTGGAAGAAATTCGAGCTGC-3’ (SEQ ID NO: 837)
3’-UAUCUGGAAGAAUUCGACCGUCGAC
c1-3’ (SEQ ID NO: 1819)
3'-UCGGCGGCGAGGCCCGAGACGAGCGp \( G_{5}' \) (SEQ ID NO: 511)

MYC-786 Target: 5'-AGCCGCCGCTCCGGGCTCTGCTCGCCC-3' (SEQ ID NO: 838)

5'-GCCGCCGCUCCGGGCUCUGCUCGCC \( A_{3}' \) (SEQ ID NO: 1820)
3'-GGGGAGGAGACATGGTGAACCAGAGTTTC-3' (SEQ ID NO: 843)

MYC-953 Target: 5'-GGACGAGACCTTCATCAAAAACAT-3' (SEQ ID NO: 847)

5'-UGGGAGGAGACATGGTGAACCAGAGTT-3' (SEQ ID NO: 841)
3'-ACCCUCCUCUGUACCACUUGGUCuCA \( A_{5}' \) (SEQ ID NO: 514)

MYC-916 Target: 5'-GAGGACGACATGGTGAACCAGAGTTTC-3' (SEQ ID NO: 845)

5'-CGGACGACGAGACCTTCATCAAAAACAT-3' (SEQ ID NO: 846)
3'-GU-5' (SEQ ID NO: 517)

MYC-952 Target: 5'-GAGGACGACGAGACCTTCATCAAAAACA-3' (SEQ ID NO: 846)

5'-GGGAGGAGACATGGTGAACCAGAGU-3' (SEQ ID NO: 1824)
3'-CCUCUCUGUACCACUUGGUCuCA \( A_{5}' \) (SEQ ID NO: 516)

MYC-915 Target: 5'-GAGGACGACATGGTGAACCAGAGTT-3' (SEQ ID NO: 843)

5'-GGGAGGAGACATGGTGAACCAGAGUTT-3' (SEQ ID NO: 842)
3'-CCUCUCUGUACCACUUGGUCuCA \( A_{5}' \) (SEQ ID NO: 515)

MYC-914 Target: 5'-GAGGACGACATGGTGAACCAGAGTTT-3' (SEQ ID NO: 841)

5'-GGAGGAGACATGGTGAACCAGAGU-3' (SEQ ID NO: 1823)
3'-CCUCUCUGUACCACUUGGUCuCA \( A_{5}' \) (SEQ ID NO: 514)

MYC-913 Target: 5'-GGGAGGAGACATGGTGAACCAGAGU-3' (SEQ ID NO: 840)

5'-UGGAGGAGACATGGTGAACCAGAGU-3' (SEQ ID NO: 1822)
3'-ACCCUCCUCUGUACCACUUGGUCuCA \( A_{5}' \) (SEQ ID NO: 513)

MYC-788 Target: 5'-GGGAGGAGACATGGTGAACCAGAGU-3' (SEQ ID NO: 839)

5'-GCCGCCGCUCCGGGCUCUGCUCGCC \( A_{3}' \) (SEQ ID NO: 1821)
3'-GGCGGCGAGGCCCGAGACGAGCGGp \( G_{5}' \) (SEQ ID NO: 512)

MYC-787 Target: 5'-GCCGCCGCTCCGGGCTCTGCTCGCCC-3' (SEQ ID NO: 838)

5'-GCCGCCGCUCCGGGCUCUGCUCGCC \( A_{3}' \) (SEQ ID NO: 1820)
3'-GGCGGCGAGGCCCGAGACGAGCGGp \( G_{5}' \) (SEQ ID NO: 511)

MYC-786 Target: 5'-AGCCGCCGCTCCGGGCTCTGCTCGCCC-3' (SEQ ID NO: 838)

5'-UCGGCGGCGAGGCCCGAGACGAGCGp \( G_{5}' \) (SEQ ID NO: 511)
5’-AAAACAUCAUCAUCCAGGACUGUAU
A⁻³⁻C’ (SEQ ID NO: 1829)
3’-UUUGUAGUAGUAGGUCCUGACAUA
Cₐ⁻₅’ (SEQ ID NO: 521)

MYC-973 Target: 5’-AAAACATCATCATCCAGGACTGTATGT-3’ (SEQ ID NO: 848)

5’-AAAACAUCAUCCAGGACUGUAUG
A⁻³⁻C’ (SEQ ID NO: 1830)
3’-UUUGUAGUAGUAGGUCCUGACAUAC
A⁻₅’ (SEQ ID NO: 522)

MYC-974 Target: 5’-AAAACATCATCATCCAGGACTGTATGT-3’ (SEQ ID NO: 849)

5’-AACATCATCATCATCCAGGACUGUAUG
A⁻³⁻C’ (SEQ ID NO: 1831)
3’-UUUGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 523)

MYC-975 Target: 5’-AACATCATCATCCAGGACTGTATGT-3’ (SEQ ID NO: 850)

5’-CAUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1832)
3’-GUAGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 524)

MYC-976 Target: 5’-ACATCATCATCCAGGACTGTATGT-3’ (SEQ ID NO: 851)

5’-CAUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1833)
3’-GUAGUAGUAGUAGGUCCUGACAUAC
U⁻₅’ (SEQ ID NO: 525)

MYC-977 Target: 5’-CATCATCATCCAGGACTGTATGTGAG-3’ (SEQ ID NO: 852)

5’-UAUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1834)
3’-AGUAGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 526)

MYC-978 Target: 5’-ATCATCATCCAGGACTGTATGTGAG-3’ (SEQ ID NO: 853)

5’-UAUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1835)
3’-AGUAGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 527)

MYC-979 Target: 5’-TCATCATCCAGGACTGTATGTGAG-3’ (SEQ ID NO: 854)

5’-CAUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1836)
3’-GUAGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 528)

MYC-980 Target: 5’-TCATCATCCAGGACTGTATGTGAG-3’ (SEQ ID NO: 855)

5’-AUUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1837)
3’-GUAGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 529)

MYC-981 Target: 5’-ATCATCCAGGACTGTATGTGAG-3’ (SEQ ID NO: 856)

5’-UAUCAUCCAGGACUGUAUGUG
A⁻³⁻C’ (SEQ ID NO: 1838)
3’-AGUAGUAGUAGUAGGUCCUGACAUAC
C⁻₅’ (SEQ ID NO: 530)
MYC-982 Target: 5'-TCATCCAGGACTGTATGTGGAGCGGCT-3' (SEQ ID NO: 857)
5'-CAGCAGAAGCUUGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1839)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 531)

MYC-983 Target: 5'-CATCCAGGACTGTATGTGGAGCGGCTT-3' (SEQ ID NO: 858)
5'-AUGGCGAGAAGCUUGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1840)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 532)

MYC-984 Target: 5'-ATCCAGGACTGTATGTGGAGCGGCTTCT-3' (SEQ ID NO: 859)
5'-UAGGCGAGAAGCUUGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1841)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 533)

MYC-985 Target: 5'-CAGGACTGTATGTGGAGCGGCTTTCT-3' (SEQ ID NO: 860)
5'-AGAAGAGGCGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1842)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 534)

MYC-986 Target: 5'-CCAGGACTGTATGTGGAGCGGCTTTCTC-3' (SEQ ID NO: 861)
5'-AGAAGAGGCGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1844)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 536)

MYC-1033 Target: 5'-CAGAAGCTGGCCCTCCCTACCCAGGCTG-3' (SEQ ID NO: 862)
5'-AGAAGAGGCGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1845)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 537)

MYC-1034 Target: 5'-AGAAGCTGGCCCTCCCTACCCAGGCTG-3' (SEQ ID NO: 863)
5'-AGAAGAGGCGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1846)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 538)

MYC-1035 Target: 5'-AGAAGCTGGCCCTCCCTACCCAGGCTGCGG-3' (SEQ ID NO: 864)
5'-AGAAGAGGCGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1847)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 539)

MYC-1036 Target: 5'-AGAAGCTGGCCCTCCCTACCCAGGCTGCGG-3' (SEQ ID NO: 865)
5'-AGAAGAGGCGCCUUCUACCAGGCAGCAGCAGCA-3' (SEQ ID NO: 1848)
3'-GUAGGUGCCAGACACUGCCAACCAGGCTGGCGG-5' (SEQ ID NO: 540)
<table>
<thead>
<tr>
<th>Target</th>
<th>Sequence</th>
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<tr>
<td>MYC-1038</td>
<td>5'-AACGTCGCTCTCCATTACGCGCG-3' (SEQ ID NO: 867)</td>
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<tr>
<td>MYC-1039</td>
<td>5'-AGCTGGCGCTCCCTACCAGGCTGCGCG-3' (SEQ ID NO: 868)</td>
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<td>MYC-1040</td>
<td>5'-GCTGGCGCTCCCTACCAGGCTGCGC-3' (SEQ ID NO: 869)</td>
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<td>MYC-1041</td>
<td>5'-CCGACCGCAACTGGCGCTCCCTACCAGGCTGCGCG-3' (SEQ ID NO: 870)</td>
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<tr>
<td>MYC-1042</td>
<td>5'-GGCTGGCGCTCCCTACCAGGCTGCGCGAAG-3' (SEQ ID NO: 871)</td>
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<tr>
<td>MYC-1043</td>
<td>5'-GCCUCUCACGCGCUGCGGCGCGAACAG-3' (SEQ ID NO: 872)</td>
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<td>MYC-1044</td>
<td>5'-GCCTGGCGCTCCCTACCAGGCTGCGCGAAGAC-3' (SEQ ID NO: 873)</td>
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<tr>
<td>MYC-1045</td>
<td>5'-CCCTGGCGCTCCCTACCAGGCTGCGCGAAAGCA-3' (SEQ ID NO: 874)</td>
</tr>
<tr>
<td>MYC-1046</td>
<td>5'-ACGAGGCGCGCCCGCGCGCGCGAGC-3' (SEQ ID NO: 875)</td>
</tr>
<tr>
<td>MYC-1047</td>
<td>5'-TCCTGGCGCTCCCTACCAGGCTGCGCGAAGAC-3' (SEQ ID NO: 876)</td>
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5'-CCUACCAGGCUCGCSCAAAGCACAGCA-3' (SEQ ID NO: 1858)
3'-GAUGUGCUCGCCACGCSSUUUCUGCCp GUc-5', (SEQ ID NO: 550)
MYC-1048 Target: 5'-CCACCAGGCTGCCCGCAAAAGACACCG-3' (SEQ ID NO: 877)
5'-CUACCCAGGCUGGCSCCAAGACACCGA-3' (SEQ ID NO: 1859)
3'-GAUGUGCACGCSCGUUUUCUGCGC Cc-5', (SEQ ID NO: 551)
MYC-1049 Target: 5'-CTACCAGGCTGCCCGCAAAAGACACCG- 3' (SEQ ID NO: 878)
5'-UACCAGGCUCGCAAAAGACACCGG A-3' (SEQ ID NO: 1860)
3'-UGUGCCGCACCGGCUUUUCUGCCGc Gu-5', (SEQ ID NO: 552)
MYC-1050 Target: 5'-CTACCAGGCTGCCCGCAAAAGACACCGC-3' (SEQ ID NO: 879)
5'-ACACCAGGCUCGCCAAAGACACCGG A-3' (SEQ ID NO: 1861)
3'-UGUGCCGCACCGGCUUUUCUGCCGC Cp Gu-5', (SEQ ID NO: 553)
MYC-1051 Target: 5'-ACACCAGGCTGCCCGCAAAAGACACCGCA- 3' (SEQ ID NO: 880)
5'-CCAGCCUCGCSCCCAAAGACACCGG C-3' (SEQ ID NO: 1862)
3'-GUUGCCGCACCGGCUUUUCUGCCGC Cc-5', (SEQ ID NO: 554)
MYC-1052 Target: 5'-CCAGCCTGCCGCSCAAAGACACCGCA-3' (SEQ ID NO: 881)
5'-CCAGCCUCGCSCCCAAAGACACCGG A-3' (SEQ ID NO: 1863)
3'-GUUGCCGCACCGGCUUUUCUGCCGC cGc-5', (SEQ ID NO: 555)
MYC-1053 Target: 5'-CCAGCCTGCCGCSCAAAGACACCGCA-3' (SEQ ID NO: 882)
5'-GCCAGCCUCGCSCCCAAAGACACCGG A-3' (SEQ ID NO: 1864)
3'-CGUGCCGCACCGGCUUUUCUGCCGC GcA-5', (SEQ ID NO: 556)
MYC-1096 Target: 5'-GCCAGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 883)
5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 884)
5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 884)
3'-GGUGCCGACGAGGAGGAGGAGGc A-5', (SEQ ID NO: 557)
MYC-1097 Target: 5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 885)
5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 884)
3'-GGUGCCGACGAGGAGGAGGAGGc A-5', (SEQ ID NO: 557)
MYC-1098 Target: 5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 885)
5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 884)
3'-GGUGCCGACGAGGAGGAGGAGGc A-5', (SEQ ID NO: 557)
MYC-1099 Target: 5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 885)
5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 884)
3'-GGUGCCGACGAGGAGGAGGAGGc A-5', (SEQ ID NO: 557)
MYC-1100 Target: 5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 885)
5'-CCACGCGTCTGCTGCCCTACCTCGCTAGCTTT-3' (SEQ ID NO: 884)
3'-GGUGCCGACGAGGAGGAGGAGGc A-5', (SEQ ID NO: 557)
MYC-1099 Target: 5'-ACAGCGTCTGCTCCACCTCCAGCTTGT-3' (SEQ ID NO: 886)
3'-GUCGCAGACAGGGGGAGUCCUGAAGA (SEQ ID NO: 560)

MYC-1100 Target: 5'-CAGCGTCTGCTCCACCTCCAGCTTGTA-3' (SEQ ID NO: 887)
3'-UCGCAGACGAGGUGGAGGUCGAACAR (SEQ ID NO: 561)

MYC-1101 Target: 5'-AGCGUCUGCUCCACCUCCAGCUUG (SEQ ID NO: 1868)
3'-GUCGCAGACGAGGUGGAGGUCGAACAr (SEQ ID NO: 562)

MYC-1189 Target: 5'-CTCTCAACGACAGCAGCTCGCCCAAGT-3' (SEQ ID NO: 890)
3'-CUCAACGACAGCGCUCCCAAGAUA-3' (SEQ ID NO: 1870)
3'-GAGGUUGCUCCUCAGCCGGGUUC (SEQ ID NO: 564)

MYC-1190 Target: 5'-CTCTCAACGACAGCAGCTCGCCCAAGTC-3' (SEQ ID NO: 891)
3'-UCUCACGACAGCGCUCCCAAGAUA-3' (SEQ ID NO: 1871)
3'-AGAGUUGCUGUCGUCGAGCGGGUUC (SEQ ID NO: 565)

MYC-1191 Target: 5'-CTCAACGACAGGTCGCCCAGCAAGTG-3' (SEQ ID NO: 892)
3'-CAACGACAGCGCUCCCAAGUCC (SEQ ID NO: 1874)
3'-GUUGCUGUCGUCGAGCGGGUUCAG (SEQ ID NO: 566)

MYC-1192 Target: 5'-CTCAACGACAGGTCGCCCAGCAAGTG-3' (SEQ ID NO: 893)
3'-CAACGACAGCGCUCCCAAGUCC (SEQ ID NO: 1875)
3'-GUUGCUGUCGUCGAGCGGGUUCAG (SEQ ID NO: 567)

MYC-1315 Target: 5'-CCTCATGAGGAGACACCGCCCACCACCA-3' (SEQ ID NO: 894)
3'-UCCAUGAGAGACACCGCCCACCACCA (SEQ ID NO: 1876)
3'-GUACCUCUCUGGCGGUGUGGG (SEQ ID NO: 568)

MYC-1316 Target: 5'-CCATGAGGAGACACCGCCCACCACCA-3' (SEQ ID NO: 895)
3'-CAUGAGAGAGACACCGCCCACCACCA (SEQ ID NO: 1877)
3'-GUACUCCUCUGUGCGGGUGGUGGU C_{G-5'}, (SEQ ID NO: 569)

MYC-1317 Target: 5'-CATGAGGAGACACCGCCCACCACCAGA C_{A-3'} (SEQ ID NO: 1878)
3'-UACUCUCUGGGCGGGUGGUGCp G_{U-5'}, (SEQ ID NO: 570)

MYC-1318 Target: 5'-ATGAGGAGACACCGCCCACCACCAGCU C_{A-3'} (SEQ ID NO: 1879)
3'-ACUCUCUGGGCGGGUGGUGCgn G_{C-5'}, (SEQ ID NO: 571)

MYC-1319 Target: 5'-TGAGGAGACACCGCCCACCACCAGCA-3' (SEQ ID NO: 896)
3'-CUCCUCUGGGCGGGUGGUGCn C_{U-5'}, (SEQ ID NO: 572)

MYC-1320 Target: 5'-GGAGGACACCGCCCACCACCAGCGA-3' (SEQ ID NO: 1880)
3'-UCUCUGGGCGGGUGGUGCUp G_{C-5'}, (SEQ ID NO: 573)

MYC-1321 Target: 5'-GGAGGACACCGCCCACCACCAGCGACT-3' (SEQ ID NO: 1881)
3'-CUCCUCUGGGCGGGUGGUGCUp G_{C-5'}, (SEQ ID NO: 574)

MYC-1322 Target: 5'-GGAGGACACCGCCCACCACCAGCGACTC-3' (SEQ ID NO: 1882)
3'-UCUCUGGGCGGGUGGUGCUp G_{C-5'}, (SEQ ID NO: 575)

MYC-1323 Target: 5'-GGAGGACACCGCCCACCACCAGCGACTCT-3' (SEQ ID NO: 1883)
3'-UCUCUGGGCGGGUGGUGCUp G_{C-5'}, (SEQ ID NO: 576)

MYC-1324 Target: 5'-AGACACCGCCCACCACCAGCGACTCTC-3' (SEQ ID NO: 1884)
3'-UCUCUGGGCGGGUGGUGCUp G_{A-5'}, (SEQ ID NO: 577)

MYC-1325 Target: 5'-GACACCGCCCACCACCAGCGACTCT-3' (SEQ ID NO: 1885)
3'-UGUGGGCGGGUGGUGCUp G_{A-5'}, (SEQ ID NO: 578)

MYC-1326 Target: 5'-GACACCGCCCACCACCAGCGACTCT-3' (SEQ ID NO: 1886)
3'-UGUGGGCGGGUGGUGCUp G_{A-5'}, (SEQ ID NO: 579)
5'-CACCCGCCACCACCAGCGACUC  \(5'\)-AC-3'  (SEQ ID NO: 1887)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 579)

MYC-1327 Target:  5'-CACCCGCCACCACCAGCGACAGCAGCGACTCTG-3'  (SEQ ID NO: 906)

5'-ACCCGCCACCACCAGCGACAGCAGCGACUGU  \(5'\)-AC-3'  (SEQ ID NO: 1888)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 580)

MYC-1328 Target:  5'-ACCGCCCACCACCAGCGACAGCAGCGACTCTG-3'  (SEQ ID NO: 907)

5'-CGCCACCACCAGCGACAGCAGCGACTCTGAGA  \(5'\)-AC-3'  (SEQ ID NO: 1890)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 582)

MYC-1330 Target:  5'-CGCCACCACCAGCGACAGCAGCGACTCTGAGG-3'  (SEQ ID NO: 909)

5'-GGCCACCACCAGCGACAGCAGCGACUGAAGA  \(5'\)-AC-3'  (SEQ ID NO: 1891)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 583)

MYC-1331 Target:  5'-GGCCACCACCAGCGACAGCAGCGACTCTGAGG-3'  (SEQ ID NO: 910)

5'-GGCCACCACCAGCGACAGCAGCGACUGAAGA  \(5'\)-AC-3'  (SEQ ID NO: 1892)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 584)

MYC-1332 Target:  5'-GGCCACCACCAGCGACAGCAGCGACTCTGAGG-3'  (SEQ ID NO: 911)

5'-GGCCACCACCAGCGACAGCAGCGACUGAAGA  \(5'\)-AC-3'  (SEQ ID NO: 1893)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 585)

MYC-1333 Target:  5'-GGCCACCACCAGCGACAGCAGCGACTCTGAGG-3'  (SEQ ID NO: 912)

5'-GGCCACCACCAGCGACAGCAGCGACUGAAGA  \(5'\)-AC-3'  (SEQ ID NO: 1894)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 586)

MYC-1334 Target:  5'-GGCCACCACCAGCGACAGCAGCGACTCTGAGG-3'  (SEQ ID NO: 913)

5'-GGCCACCACCAGCGACAGCAGCGACUGAAGA  \(5'\)-AC-3'  (SEQ ID NO: 1895)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 587)

MYC-1360 Target:  5'-GGCCACCACCAGCGACAGCAGCGACTCTGAGG-3'  (SEQ ID NO: 914)

5'-GGCCACCACCAGCGACAGCAGCGACUGAAGA  \(5'\)-AC-3'  (SEQ ID NO: 1896)
3'-GUUGCGGGUGGUAGCGUGCGA  \(3'\)-AC-5'  (SEQ ID NO: 588)
MYC-1361 Target: 5'-ACAAGAAGATGAGGAAGAAATCGATGT-3' (SEQ ID NO: 915)
5'-UGGAGGCCACAGCAAACCUCCUCAC (SEQ ID NO: 1897)
3'-ACCUCGGUGUCGUGUUGAGGAGGUGn uC-5' (SEQ ID NO: 589)

MYC-1448 Target: 5'-TGGAGGCCACAGCAAACCTCCTCACAG-3' (SEQ ID NO: 916)
5'-UCACAGCCCACUGGUCUCAAGAG (SEQ ID NO: 1898)
3'-GAGUGUCGGUGACCCAGAGUUCUCuAC-5' (SEQ ID NO: 590)

MYC-1468 Target: 5'-CTCACAGCCCACTGGTCCTCAAGAGGT-3' (SEQ ID NO: 917)
5'-UCACAGCCCACUGGUCUCAAGAGG (SEQ ID NO: 1899)
3'-AGUGUCGGUGACCCAGAGUUCUCuA-5' (SEQ ID NO: 591)

MYC-1469 Target: 5'-TCACAGCCCACTGGTCCTCAAGAGGTGC-3' (SEQ ID NO: 918)
5'-UCACAGCCCACUGGUCUCAAGAGGU (SEQ ID NO: 1900)
3'-GAGUGUCGGUGACCCAGAGUUCUCuG-5' (SEQ ID NO: 592)

MYC-1470 Target: 5'-CACAGCCCACUGGUCUCAAGAGGTGC-3' (SEQ ID NO: 919)
5'-ACAGCCCACUGGUCUCAAGAGGUGA-3' (SEQ ID NO: 1901)
3'-UGUCGGUGACCCAGAGUUCUCuGc-5' (SEQ ID NO: 593)

MYC-1471 Target: 5'-ACAGCCCACUGGUCUCAAGAGGTGCCA-3' (SEQ ID NO: 920)
5'-AGCCCACUGGUCUCAAGAGGUGCC (SEQ ID NO: 1902)
3'-GUGUGACCCAGAGUUCUCAGCAGuG-5' (SEQ ID NO: 594)

MYC-1472 Target: 5'-AGCCCACUGGUCUCAAGAGGTGCCAC-3' (SEQ ID NO: 921)
5'-AGCCCACUGGUCUCAAGAGGUGCC (SEQ ID NO: 1903)
3'-UCGGUGACCCAGAGUUCUCAGGn uG-5' (SEQ ID NO: 595)

MYC-1473 Target: 5'-AGCCCACUGGUCUCAAGAGGTGCCAC-3' (SEQ ID NO: 922)
5'-GCCCACTGGTCCTCAAGAGGTGCCAC (SEQ ID NO: 1904)
3'-CGGUGACCCAGAGUUCUCAGGuC-5' (SEQ ID NO: 596)

MYC-1474 Target: 5'-GCCCACTGGTCCTCAAGAGGTGCCAC-3' (SEQ ID NO: 923)
5'-CCCACUGGUCUCAAGAGGUGCCAC (SEQ ID NO: 1905)
3'-GGUGACCCAGAGUUCUCAGGGuC-5' (SEQ ID NO: 597)

MYC-1475 Target: 5'-CCCACUGGUCUCAAGAGGUGCCAC-3' (SEQ ID NO: 924)
5'-CCACUGGUCUCAAGAGGUGCCAC (SEQ ID NO: 1906)
3'-GGUGACCAGGAGUUCUCCACGGUGC A<sub>G</sub> 5' (SEQ ID NO: 598)

MYC-1476 Target: 5'-CCACTGGTCCTCAAGAGGTGCCACGT-3' (SEQ ID NO: 925)

5'-CACUGGUCUCAAGAGGUCACGGACG A<sub>C</sub> 3' (SEQ ID NO: 1907)
3'-GUGACCAGGAGUUUCACGGUGACGp G<sub>U</sub>-5', (SEQ ID NO: 599)

MYC-1477 Target: 5'-CACTGGTCCTCAAGAGGTGCCACGTCT-3' (SEQ ID NO: 926)

5'-ACUGGUCUCAAGAGGUGCCACAGC A<sub>C</sub> 3' (SEQ ID NO: 1908)
3'-UGACCAGGAGUUUCACGGUGACGp G<sub>G</sub>-5', (SEQ ID NO: 600)

MYC-1478 Target: 5'-ACTGGTCCTCAAGAGGTGCCACGTCT-3' (SEQ ID NO: 927)

5'-UGGUCUCAAGAGGUGCCACAGC A<sub>G</sub> 3' (SEQ ID NO: 1909)
3'-ACCAGGAGUUUCACGGUGACGp G<sub>U</sub>-5', (SEQ ID NO: 601)

MYC-1479 Target: 5'-ACTGGTCCTCAAGAGGTGCCACGTCT-3' (SEQ ID NO: 928)

5'-UGGUCUCAAGAGGUGCCACAGC A<sub>G</sub> 3' (SEQ ID NO: 1910)
3'-CCAGGAGUUUCACGGUGACGp G<sub>U</sub>-5', (SEQ ID NO: 602)

MYC-1480 Target: 5'-TGTTCTCAAGAGGTGCCACGTCTCA-3' (SEQ ID NO: 929)

5'-GGUCCUCAGGAGGUCACGGUCUC A<sub>G</sub> 3' (SEQ ID NO: 1911)
3'-CCAGGAGUUUCACGGUGACGp G<sub>U</sub>-5', (SEQ ID NO: 603)

MYC-1481 Target: 5'-GGTTCTCAAGAGGTGCCACGTCTCA-3' (SEQ ID NO: 930)

5'-GUCUCAGGAGGUGCCACGUCUC A<sub>G</sub> 3' (SEQ ID NO: 1912)
3'-CAGGAGUUUCACGGUGACGp G<sub>U</sub>-5', (SEQ ID NO: 604)

MYC-1482 Target: 5'-GTCTCAAGAGGTGCCACGTCTCA-3' (SEQ ID NO: 931)

5'-UCCUCAGGAGGUCACGUCUC A<sub>C</sub> 3' (SEQ ID NO: 1913)
3'-AGGAGUUUCACGGUGACGp G<sub>U</sub>-5', (SEQ ID NO: 605)

MYC-1483 Target: 5'-TCTCAAGAGGTGCCACGTCTCA-3' (SEQ ID NO: 932)

5'-GGAGCUUUUUUGCCCGUGACCA A<sub>G</sub> 3' (SEQ ID NO: 1914)
3'-CCUCAGAAAAACGGACGACGp G<sub>U</sub>-5', (SEQ ID NO: 606)

MYC-1711 Target: 5'-GGAGCTTTTTTGCCCTGCGTGACCAGA-3' (SEQ ID NO: 933)

5'-GAGCUUUUUUGCCCGUGACCA A<sub>C</sub> 3' (SEQ ID NO: 1915)
3'-CUCAAAACGGACGACGACGp G<sub>U</sub>-5', (SEQ ID NO: 607)

MYC-1712 Target: 5'-GAGCTTTTTTGCCCTGCGTGACCAGAT-3' (SEQ ID NO: 934)
MYC-1713 Target: 5'-AGCTTTTTTGCCCTGCGTGACCAGATC-3' (SEQ ID NO: 1916)

5'-GCUUUUUUGCCCUGGUGACCAGAUA^ (SEQ ID NO: 1917)

MYC-1714 Target: 5'-GCTTTTTTGCCCTGCGTGACCAGATCC-3' (SEQ ID NO: 609)

5'-GUUUUUUGCCCUGGUGACCAGAUA^ (SEQ ID NO: 608)

MYC-1715 Target: 5'-CTTTTTTGCCCTGCGTGACCAGATCCC-3' (SEQ ID NO: 935)

5'-GGAAAAACGACACUGGUCUAG (SEQ ID NO: 610)

MYC-1716 Target: 5'-GCTTTTTTGCCCTGCGTGACCAGATCCCG-3' (SEQ ID NO: 936)

5'-GAAAAAACGACACUGGUCUAG (SEQ ID NO: 611)

MYC-1717 Target: 5'-TTTTTGCCCTGCGTGACCAGATCCCGG-3' (SEQ ID NO: 937)

5'-AAAAAACGACACUGGUCUAG (SEQ ID NO: 612)

MYC-1718 Target: 5'-TTTTTGCCCTGCGTGACCAGATCCCGGA-3' (SEQ ID NO: 938)

5'-AAAAAACGACACUGGUCUAG (SEQ ID NO: 613)

MYC-1719 Target: 5'-TTTTTGCCCTGCGTGACCAGATCCCGGA-3' (SEQ ID NO: 939)

5'-AAAAAACGACACUGGUCUAG (SEQ ID NO: 614)

MYC-1720 Target: 5'-TTTGCCCTGCGTGACCAGATCCCGGA-3' (SEQ ID NO: 940)

5'-AAAAAACGACACUGGUCUAG (SEQ ID NO: 615)

MYC-1721 Target: 5'-TTGCCCTGCGTGACCAGATCCCGGAG-3' (SEQ ID NO: 941)

5'-AAAAAACGACACUGGUCUAG (SEQ ID NO: 616)

MYC-1722 Target: 5'-TTGCCCTGCGTGACCAGATCCCGGAGT-3' (SEQ ID NO: 942)

5'-AAAAAACGACACUGGUCUAG (SEQ ID NO: 617)
MYC-1856 Target: 5' -GCGGAAACGACGAGAACAGTTGAAACA- 3' (SEQ ID NO: 944)
3' -GCCUUUGCUGCUUUGUCAUCUUG (SEQ ID NO: 618)

MYC-1857 Target: 5' -CGGAAACGACGAGAACAGTTGAAACA- 3' (SEQ ID NO: 945)
3' -AGAAUUGUCUAACUAUAUUCUU (SEQ ID NO: 619)

MYC-2115 Target: 5' -TCTTTAAGCATTTGATTTAAGATT-3' (SEQ ID NO: 946)
3' -CAGGUUUGUGGGACUUGGUCA (SEQ ID NO: 1927)

MYC-2116 Target: 5' -TCTTTAAGCATTTGATTTAAGATT-3' (SEQ ID NO: 947)
3' -CAGGUUUGUGGGACUUGGUCA (SEQ ID NO: 1927)

MYC-2193 Target: 5' -TTAAATGTAAATAACTTTAATAAAACG-3' (SEQ ID NO: 948)
3' -UAAUGUAAAUAACUUUAAUAAA (SEQ ID NO: 1930)

MYC-2194 Target: 5' -TTAAATGTAAATAACTTTAATAAAACG-3' (SEQ ID NO: 949)
3' -UAAUGUAAAUAACUUUAAUAAA (SEQ ID NO: 1930)

MYC-2195 Target: 5' -TTAAATGTAAATAACTTTAATAAAACG-3' (SEQ ID NO: 950)
3' -UAAUGUAAAUAACUUUAAUAAA (SEQ ID NO: 1930)

MYC-2196 Target: 5' -TTAAATGTAAATAACTTTAATAAAACG-3' (SEQ ID NO: 951)
3' -UAAUGUAAAUAACUUUAAUAAA (SEQ ID NO: 1930)

MYC-2197 Target: 5' -TTAAATGTAAATAACTTTAATAAAACG-3' (SEQ ID NO: 952)
3' -UAAUGUAAAUAACUUUAAUAAA (SEQ ID NO: 1930)

MYC-2198 Target: 5' -TTAAATGTAAATAACTTTAATAAAACG-3' (SEQ ID NO: 953)
3' -UAAUGUAAAUAACUUUAAUAAA (SEQ ID NO: 1930)
3'-'CAUUUAUUGAAAUUUUUUGCAAAAU  (SEQ ID NO: 627)
MYC-2199 Target: 5'-'GTAAATAACTTTAATAAAAACGTTTATA-3 ' (SEQ ID NO: 954)
5'-'UAAUAACUUAUAAACGUUUUAU  (SEQ ID NO: 1936)
3'-'AUUUAUGAAAUUUUUGCAAAAU  (SEQ ID NO: 628)
MYC-2200 Target: 5'-'TAATAACTTTAATAAAAACGTTTATA-3 ' (SEQ ID NO: 955)
5'-'AAAUAACUUAUAAACGUUUUAU  (SEQ ID NO: 1937)
3'-'UUUAUGAAAUUUUUGCAAAAU  (SEQ ID NO: 629)
MYC-2201 Target: 5'-'AAATAACTTTAATAAAAACGTTTATAG-3 ' (SEQ ID NO: 956)
5'-'AAUAACUUAUAAACGUUUUAUAG  (SEQ ID NO: 1938)
3'-'UUUAUGAAAUUUUUGCAAAAUUCP  (SEQ ID NO: 630)
MYC-2202 Target: 5'-'AAATAACTTTAATAAAAACGTTTATAG-3 ' (SEQ ID NO: 957)
5'-'AAUAACUUAUAAACGUUUUAUAG  (SEQ ID NO: 1939)
3'-'UUUAUGAAAUUUUUGCAAAAU  (SEQ ID NO: 631)
MYC-2203 Target: 5'-'AAATAACTTTAATAAAAACGTTTATAG-3 ' (SEQ ID NO: 958)
5'-'AAUAACUUAUAAACGUUUUAUAGCA  (SEQ ID NO: 1940)
3'-'UUUAUGAAAUUUUUGCAAAAUUCG  (SEQ ID NO: 632)
MYC-2204 Target: 5'-'AAATAACTTTAATAAAAACGTTTATAGCAG-3 ' (SEQ ID NO: 959)
5'-'AAUAACUUAUAAACGUUUUAUAGCAG  (SEQ ID NO: 1941)
3'-'UUUAUGAAAUUUUUGCAAAAUUCGUC  (SEQ ID NO: 633)
MYC-2205 Target: 5'-'AAATAACTTTAATAAAAACGTTTATAGCAG-3 ' (SEQ ID NO: 960)
5'-'AAUAACUUAUAAACGUUUUAUAGCA  (SEQ ID NO: 1942)
3'-'UUUAUGAAAUUUUUGCAAAAUUCG  (SEQ ID NO: 634)
MYC-2313 Target: 5'-'GCTTTTTAAGTTGATTTTTTCTATT-3 ' (SEQ ID NO: 961)
5'-'CUUUUUAAGGUUGAUUUUUUCUAU  (SEQ ID NO: 1943)
3'-'GAAAAAUUUUCAACUA AAAGAU  (SEQ ID NO: 635)
MYC-2314 Target: 5'-'TTTTTTAAGTTGATTTTTTCTATTG-3 ' (SEQ ID NO: 962)
5'-'UUUAAGGUUGAUUUUUUUUCUAU  (SEQ ID NO: 1944)
3'-'AAAAAAUUCACUA AAAAGAU  (SEQ ID NO: 636)
MYC-2315 Target: 5'-'TTTTTTAAGTTGATTTTTTCTATTG-3 ' (SEQ ID NO: 963)
5' -UUUUAAAGUUGAUUUUUUCUAUUG -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2316 Target: 5' -TTTTAAAGTGATTTTTCTATTGTT -3' (SEQ ID NO: 964)

5' -UUUAAAGUUGAUUUUUUCUAUUG -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2317 Target: 5' -TTAAAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 965)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2318 Target: 5' -TTAAAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 966)

5' -UUUAAAGUUGAUUUUUUCUAUUGUU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2319 Target: 5' -TTAAAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 967)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2320 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 968)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2321 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 969)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2322 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 970)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2323 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 971)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2324 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 972)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2325 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 973)

5' -UUUAAAGUUGAUUUUUUCUAUUGU -C -3'
3' -AAAAUUUCAACUAAAAAGAUAAAC -A -5'

MYC-2326 Target: 5' -AAAGTGATTTTTCTATTGTTT -3' (SEQ ID NO: 974)
MYC-2325 Target: 5'-TGATTTTTTCTATTGTTTTTAGAAAA-3' (SEQ ID NO: 973)
5'-GAUUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1955)
3'-CUAAAAAAAGAUAAACAAAAACUUCUU un u-5', (SEQ ID NO: 647)
MYC-2326 Target: 5'-GATTTTTTCTATTGTTTTTAGAAAA-3' (SEQ ID NO: 974)
5'-AUUUUUUUCUAUUGUUUUUGAGAAA C C-3' (SEQ ID NO: 1956)
3'-UAAAAAGAUAAACAAAAACUUCUU u -5', (SEQ ID NO: 648)
MYC-2327 Target: 5'-ATTTTTTCTATTGTTTTTAGAAAA-3' (SEQ ID NO: 975)
5'-UUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1957)
3'-AAAAAAAGAUAAACAAAAACUUCUU u -A-5', (SEQ ID NO: 649)
MYC-2328 Target: 5'-TTTTTTCTATTGTTTTTAGAAAA-3' (SEQ ID NO: 976)
5'-UUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1958)
3'-AAAAAAAGAUAAACAAAAACUUCUU u-A-5', (SEQ ID NO: 650)
MYC-2329 Target: 5'-TTTTTTCTATTGTTTTTAGAAAAAT-3' (SEQ ID NO: 977)
5'-UUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1959)
3'-AAAAAAAGAUAAACAAAAACUUCUU u-A-5', (SEQ ID NO: 651)
MYC-2330 Target: 5'-TTTTTTCTATTGTTTTTAGAAAA-3' (SEQ ID NO: 978)
5'-UUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1960)
3'-AAAAAAAGAUAAACAAAAACUUCUU u-A-5', (SEQ ID NO: 652)
MYC-2331 Target: 5'-TTTTTTCTATTGTTTTTAGAAAAAT-3' (SEQ ID NO: 979)
5'-UUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1961)
3'-AAAAAAAGAUAAACAAAAACUUCUU u-A-5', (SEQ ID NO: 653)
MYC-2332 Target: 5'-TTTTTTCTATTGTTTTTAGAAAAAT-3' (SEQ ID NO: 980)
5'-UUUUUUUCUAUUGUUUUUGAGAAA c C-3' (SEQ ID NO: 1962)
3'-AAAAAAAGAUAAACAAAAACUUCUU u -A-5', (SEQ ID NO: 654)
MYC-2333 Target: 5'-TTTTTTCTATTGTTTTTAGAAAAAT-3' (SEQ ID NO: 981)

**Table 7:** Selected Human Anti-MYC "Blunt/Blunt" DsiRNAs

<table>
<thead>
<tr>
<th>DsiRNA Sequence</th>
<th>ID No.</th>
</tr>
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<tbody>
<tr>
<td>5'-CUCGAGAGGGCAGGCUUCAGAGG-3'</td>
<td>1963</td>
</tr>
<tr>
<td>3'-GGGCUCUUCAGGCUUCAGG-5'</td>
<td>328</td>
</tr>
<tr>
<td>MYC-94 Target: 5'-CTCGAGAGGGCAGGCTTCAGAGG-3'</td>
<td>655</td>
</tr>
<tr>
<td>5'-GGGCUCUUCAGGCUUCAGG-3'</td>
<td>1964</td>
</tr>
</tbody>
</table>
3'-'CCCGAAAUAGAUUGAGCGACAUCAUUA-5' (SEQ ID NO: 329)

MYC-178 Target: 5'-'GGGCTTTATCTAATCTGCTGTAGTAAT-3' (SEQ ID NO: 656)

5'-'AACCCCUGGGCTGGAACGAAACUUUG- 3' (SEQ ID NO: 1976)
3'-'UUGGGAAACCGUUGCUUGCUUGAAAAAC- 5' (SEQ ID NO: 330)

MYC-365 Target: 5'-'AACCCCTTGGCGCATCCAGAAACTTTG-3' (SEQ ID NO: 657)

5'-'UUGCCCGCAUCCACAAAUUUGCCCAAU-3' (SEQ ID NO: 1966)
3'-'AACCGGCUAGAGCUUGUUUGAAGACG- 5' (SEQ ID NO: 331)

MYC-370 Target: 5'-'TGCCCGCATCCAGAAACTTTGCCCAAT-3' (SEQ ID NO: 658)

5'-'CAUCCCCGAAACUUGCCCAUAGCAG-3' (SEQ ID NO: 1967)
3'-'GGGCCCUGGGCUUUGGCUUGUUC- 5' (SEQ ID NO: 332)

MYC-376 Target: 5'-'CATCCAGAAACTTTGCCCAATGCAGC-3' (SEQ ID NO: 659)

5'-'GGGCCCCGCAUCCACAAAUUUGCCCAAU-3' (SEQ ID NO: 1968)
3'-'CCCGGCCCUGGGCUUUGGCUUGUUC- 5' (SEQ ID NO: 333)

MYC-403 Target: 5'-'GGGCGGGCACTTTGCCACTGAAGTTAC-3' (SEQ ID NO: 660)

5'-'GCACUUGGCACUUGCAACUACCAACCC-3' (SEQ ID NO: 1969)
3'-'CCGAAACGUGACCUUGAAUGUUGUUG- 5' (SEQ ID NO: 334)

MYC-409 Target: 5'-'GCACUUGGCACUUGCAACUACCAACCC-3' (SEQ ID NO: 1970)
3'-'GGGACCUGUGAUAUGUGGCUUGUC- 5' (SEQ ID NO: 335)

MYC-417 Target: 5'-'CActTTGCACTTTGCACTGAAGTTAC-3' (SEQ ID NO: 662)

5'-'UGGCAACGGUAGCUUUGCAACUACCC-3' (SEQ ID NO: 1971)
3'-'AAAGGAAGACCUUGACCUUGAACAC- 5' (SEQ ID NO: 336)

MYC-535 Target: 5'-'TGCCACTGTGGTAGGTGCTGATTIT-3' (SEQ ID NO: 663)

5'-'UCGGUUUGGCAACUUGCAACUACCC-3' (SEQ ID NO: 1972)
3'-'GACGGAACGGUAGCUUUGCAACUACCC- 5' (SEQ ID NO: 337)

MYC-541 Target: 5'-'CTGCTTTGAGCGCTTGATTTTCTCGG-3' (SEQ ID NO: 664)

5'-'GACGGUUUGGCAACUUGCAACUACCC-3' (SEQ ID NO: 1973)
3'-'CUGCGACCAUUAAAAAGCCCAUACAC- 5' (SEQ ID NO: 338)

MYC-548 Target: 5'-'GACGCTCGGATTTTTTTCGGGATTAGGTGA-3' (SEQ ID NO: 665)

5'-'UGGAUUUUUUUGCCGGAUUGGAAAAC-3' (SEQ ID NO: 1974)
3'-'ACCUUUUAAAAGCCCAUACCUUUUGG- 5' (SEQ ID NO: 339)

MYC-553 Target: 5'-'TGAGTTTTTTTCCGGGTATGGAAAACC-3' (SEQ ID NO: 666)

5'-'UCGGUUUGGCAACUUGCAACUACCC-3' (SEQ ID NO: 1975)
3'-'AAGCGCAACCGUUGGGUGUGGGGAG- 5' (SEQ ID NO: 340)

MYC-562 Target: 5'-'TTCCGTTAGGGAAAACCGGAGCCTC-3' (SEQ ID NO: 667)

5'-'CCCUCACGCGUUGACCAACACCAGAG-3' (SEQ ID NO: 1976)
3'-'GGGAAGUGGCACCGGAAGCGGUUGUC- 5' (SEQ ID NO: 341)

MYC-601 Target: 5'-'CCCTCAACGGTTCCTCACCAACAGGA-3' (SEQ ID NO: 668)

5'-'ACGGUUGCUUCAACCAACAGGAACUAUG-3' (SEQ ID NO: 1977)
3'-'UGCAAUCGAGUUGGUGGCUUUAACU- 5' (SEQ ID NO: 342)
MYC-607 Target: 5'-ACGTTAGCTTCACCAACAGGAACTATG-3' (SEQ ID NO: 669)
3'-UGCUGACCCACUGCGAUAAAGGAAGA-5' (SEQ ID NO: 343)
MYC-643 Target: 5'-ACGACTCGGTGACGGCTATTTTACT-3' (SEQ ID NO: 670)
5'-GUGCAGCCGUAUUUUCAGCCGACGAG-3' (SEQ ID NO: 1979)
3'-CAUGCGCCCAGAAAGAGGUGGCAGCGC-5' (SEQ ID NO: 344)
MYC-651 Target: 5'-GTGCAGCGGTATTTTACTGCGACGAG-3' (SEQ ID NO: 671)
5'-AGGAGGAACUCUACCAGCGAGGCAG-3' (SEQ ID NO: 1980)
3'-UCUCUCUCUCUAGGAAGGCGUCGUGGCG-5' (SEQ ID NO: 345)
MYC-676 Target: 5'-AGGAGGAACCTTCTACACGAGCAG-3' (SEQ ID NO: 672)
5'-CAGCGGAGAUCUGAGAAGAAUCG-3' (SEQ ID NO: 1981)
3'-GUGCGUCCCUAUAAGACUUCUUAAGCU-5' (SEQ ID NO: 346)
MYC-731 Target: 5'-ACCCGGGACGAGACCTTCATCAA-3' (SEQ ID NO: 673)
5'-UACGUGCGGUCACCCCCUCUCUU-3' (SEQ ID NO: 1982)
3'-AUGCAAGCCUCUAGCGGAAGGAA-5' (SEQ ID NO: 347)
MYC-816 Target: 5'-TACGTTCGTCACACCCCTCTCCCTT-3' (SEQ ID NO: 674)
5'-AGCACUUGGAAACCAGGCUUUCACUG-3' (SEQ ID NO: 1983)
3'-UCUGUACACUUGGCUCAAAUGAGAC-5' (SEQ ID NO: 348)
MYC-920 Target: 5'-AGACATGTTGAACCGAGGTTATCTCTG-3' (SEQ ID NO: 675)
5'-ACCCGAGGACGAGACCTTCATCAA-3' (SEQ ID NO: 676)
3'-UCCCUUGGCGUCCGCGAAGGAAU-5' (SEQ ID NO: 349)
MYC-949 Target: 5'-ACCCGGGACGACCACTTCTCACA-3' (SEQ ID NO: 677)
5'-ACCGACUUCAUCAAAACAUCAUCA-3' (SEQ ID NO: 1984)
3'-UGCUUGGAGAAGUUGUGUGUGUGUGAGU-5' (SEQ ID NO: 350)
MYC-958 Target: 5'-ACGAGACCTTCATCAAACGACATCA-3' (SEQ ID NO: 677)
5'-UCAAAAAACAUAUCAACGAGACGUG-3' (SEQ ID NO: 1986)
3'-AGUUUUGUGAAGUGCUCCGACAAU-5' (SEQ ID NO: 351)
MYC-970 Target: 5'-TCAAAACATCATCATCCAGGACCTGTA-3' (SEQ ID NO: 678)
5'-CAGGACUGUAUUGGAACGCGGCUUCUG-3' (SEQ ID NO: 1987)
3'-CCUCUCUGUCCACUACUCGCGGAAGAC-5' (SEQ ID NO: 352)
MYC-987 Target: 5'-CAGGACTGTATGTGGACTCGCGCACGAC-3' (SEQ ID NO: 679)
5'-GUCUUGUCCACCCCUACCGUGACUGGUCUG-3' (SEQ ID NO: 1988)
3'-CAACGACGCGGUGAACAUGGACGU-5' (SEQ ID NO: 353)
MYC-1104 Target: 5'-GCTCTGGAGACACCTCAGGCGCTTATG-3' (SEQ ID NO: 680)
5'-CUCACUCCAGGGAAGGUAAGAGAUCG-3' (SEQ ID NO: 1989)
3'-GGUGGAGGUGACAAAUGGACGU-5' (SEQ ID NO: 354)
MYC-1111 Target: 5'-CAGGCTGTTTTCATCCGAGGAGAC-3' (SEQ ID NO: 681)
5'-UCACUGACUCCUGCGAGAUCUGGCAG-3' (SEQ ID NO: 1990)
3'-AGUUGAACAUGGAGACGUCCUUCG-5' (SEQ ID NO: 355)
MYC-1116 Target: 5'-TCCAGCTTTGTACCTCGAGGATC-3' (SEQ ID NO: 682)
5'-'CCAAGUCCUGCGCCUCGCAAGACUCCA-3' (SEQ ID NO: 1991)
3'-'GGUUCAGGACGCGGAGCGUUCUGAGGU-5' (SEQ ID NO: 356)

MYC-1210 Target: 5'-'CCAAGTCTCGCGCCUCGCAAGACUCCA-3' (SEQ ID NO: 683)

5'-'CAGCAGCGACUCUGAGGAGGAACAAGA-3' (SEQ ID NO: 1992)
3'-'GUCCUGUCCGCACUGCGUUCUGUUCGU-5' (SEQ ID NO: 357)

MYC-1340 Target: 5'-'CAGCAGCGACTCGAGGAACAAGA-3' (SEQ ID NO: 684)

5'-'CGACUCUGAGGAGGAACAAGAAGAUGA-3' (SEQ ID NO: 1993)
3'-'GCGAGACUCUCUCUUGUUCUUCACU-5' (SEQ ID NO: 358)

MYC-1346 Target: 5'-'CGACTCGAGGAACAAGA-3' (SEQ ID NO: 685)

5'-'CUGGAGGAGGAACAAGAAGAUGAGGAAG-3' (SEQ ID NO: 1994)
3'-'GCCUGGUGCUUGGUUCACUCUC-5' (SEQ ID NO: 360)

MYC-1351 Target: 5'-'CTGAGGAGGAACAAGAAGA-3' (SEQ ID NO: 686)

5'-'GCCUCUCUCUUGUUCUUCUUCACU-5' (SEQ ID NO: 1995)

MYC-1358 Target: 5'-'GCCUCUCUCUUGUUCUUCUUCACU-5' (SEQ ID NO: 361)

5'-'AAGAAGAAGAAGAUGAUGUUGUUCUGU-3' (SEQ ID NO: 1996)
3'-'UCUUGGUGGUUACUUGCAACA-5' (SEQ ID NO: 362)

MYC-1364 Target: 5'-'AGAAGAAGAAGAUGAUGUUGUUCUGU-3' (SEQ ID NO: 687)

5'-'UAGAAGAAGAAGAUGAUGUUGUUCUGU-3' (SEQ ID NO: 1997)
3'-'ACUUGCAUAGACACCAAACAAAGA-5' (SEQ ID NO: 363)

MYC-1370 Target: 5'-'TGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 688)

5'-'AGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 1998)
3'-'UCUUGGUGGUUACUUGCAACA-5' (SEQ ID NO: 364)

MYC-1376 Target: 5'-'AGAAGAAGAAGAUGAUGUUGUUCUGU-3' (SEQ ID NO: 365)

5'-'UGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 1999)
3'-'GCAGAACAAACACCCUGUUCUGCUG-5' (SEQ ID NO: 366)

MYC-1382 Target: 5'-'CGATGTGTTCGATGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 690)

5'-'AGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 2000)
3'-'UCUUGGUGGUUACUUGCAACA-5' (SEQ ID NO: 367)

MYC-1401 Target: 5'-'AGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 691)

5'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAGG-3' (SEQ ID NO: 368)
3'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAG-5' (SEQ ID NO: 692)

MYC-1406 Target: 5'-'AGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 369)

5'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAGG-3' (SEQ ID NO: 2001)
3'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAG-5' (SEQ ID NO: 366)

MYC-1411 Target: 5'-'AGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 693)

5'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAGG-3' (SEQ ID NO: 2002)
3'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAG-5' (SEQ ID NO: 367)

MYC-1416 Target: 5'-'AGAGGAGAAAATCGATGTGTTCGAT-3' (SEQ ID NO: 694)

5'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAGG-3' (SEQ ID NO: 2003)
3'-'GCAGGAGGACCCUGUUCUGCUGGAGGAGGAG-5' (SEQ ID NO: 368)
5' -AAGGUCAGAGUCUGGAUCACCCUCUGC- 3' (SEQ ID NO: 2004)
3' -UUCGAGUCACAGAGCUGGAAAGAGC- 5' (SEQ ID NO: 369)

MYC-1421 Target: 5' -AAGGTCAAGCTCTGGACACCTCTCTGC- 3' (SEQ ID NO: 696)
5' -CAGCAGACUCUCUAGACACCCUCUGG- 3' (SEQ ID NO: 2005)
3' -GUGCGUAGGUAGCUGCUAGGCACGAG- 5' (SEQ ID NO: 370)

MYC-1457 Target: 5' -CAGCAGAAGGCTCTCTACGCTCAG- 3' (SEQ ID NO: 697)
5' -CUCUCACACCCCUCUGCUGCAAGA- 3' (SEQ ID NO: 2016)
3' -GAGGAGGUGCUUGCUGCAAGACGGU- 5' (SEQ ID NO: 371)

MYC-1465 Target: 5' -CTCCCTCAAGCCTCTCTGCAG- 3' (SEQ ID NO: 698)
5' -CUCUCUCACUGCGAGCUGAUCCUG- 3' (SEQ ID NO: 2007)
3' -GAGGAGGUGCUUGCUGCAAGACGGU- 5' (SEQ ID NO: 372)

MYC-1531 Target: 5' -CTCCCTCAAGCCTCTCTGCAG- 3' (SEQ ID NO: 699)
5' -CAGAUCAGCAACAACCGAAAAUGCACC- 3' (SEQ ID NO: 2017)
3' -GACUCAGCAACAACCGAAAAUGCACC- 5' (SEQ ID NO: 373)

MYC-1538 Target: 5' -CACTCGGAAGCCTCTCTGCAGCAG- 3' (SEQ ID NO: 700)
5' -CUAUCAGCCAGCGCAGGGAAGGUGGAA- 3' (SEQ ID NO: 2008)
3' -GAGGAGGUGCUUGCUGCAAGACGGU- 5' (SEQ ID NO: 374)

MYC-1550 Target: 5' -CTATTCGCCAGGTTGCGAAGG-T- 3' (SEQ ID NO: 701)
5' -CUCUCUCACUGCGAGCUGAUCCUG- 3' (SEQ ID NO: 2009)
3' -GAGGAGGUGCUUGCUGCAAGACGGU- 5' (SEQ ID NO: 375)

MYC-1555 Target: 5' -CTCCTGCCAGGTTGCGAAGG-T- 3' (SEQ ID NO: 702)
5' -CCCAAGAGCCAGGUGGACAGGUG- 3' (SEQ ID NO: 2010)
3' -GAGGAGGUGCUUGCUGCAAGACGGU- 5' (SEQ ID NO: 376)

MYC-1560 Target: 5' -GCAGGAGCGTCAAGGCTCTCTGCAG- 3' (SEQ ID NO: 703)
5' -GAGGAGGUGCUUGCUGCAAGGAGA- 3' (SEQ ID NO: 2011)
3' -GAGGAGGUGCUUGCUGCAAGACG- 5' (SEQ ID NO: 377)

MYC-1565 Target: 5' -GAGGAGGUGCUUGCUGCAAGGAGA- 3' (SEQ ID NO: 2012)
3' -GAGGAGGUGCUUGCUGCAAGACG- 5' (SEQ ID NO: 378)

MYC-1570 Target: 5' -CACTCGGAAGCCTCTCTGCAGCAG- 3' (SEQ ID NO: 704)
5' -UUCGAGCCAGCCAGCAGAGAGAGAGA- 3' (SEQ ID NO: 2013)
3' -AAGUACGACUCAGCUGAGGGAAAGC- 5' (SEQ ID NO: 379)

MYC-1575 Target: 5' -TTGAGACGACAGTCTAGGAGGACAG- 3' (SEQ ID NO: 705)
5' -GUCGAGACUCAGACAGAGAGAGAGA- 3' (SEQ ID NO: 2014)
3' -CAGUCAGGACAGAGAGAGAGAGAGA- 5' (SEQ ID NO: 380)

MYC-1584 Target: 5' -GTCAGACGACAGTCTAGGAGGACAG- 3' (SEQ ID NO: 706)
5' -UGAGACGACAGACAGAGAGAGAGA- 3' (SEQ ID NO: 2015)
3' -GTCAGACGACAGACAGAGAGAGAGA- 5' (SEQ ID NO: 381)

MYC-1593 Target: 5' -CTGAGACGACAGTCTAGGAGGACAG- 3' (SEQ ID NO: 707)
5' -CAGACGACGACAGACAGAGAGAGAGA- 3' (SEQ ID NO: 2016)
3' -GACGACGACGACAGACAGAGAGAGA- 5' (SEQ ID NO: 382)

MYC-1593 Target: 5' -CTGAGACGACAGTCTAGGAGGACAG- 3' (SEQ ID NO: 708)
5' -CAGACGACGACAGACAGAGAGAGAGA- 3' (SEQ ID NO: 2017)
3'-GUCUAGUCGUUGCUUUCAGUGG- 5' (SEQ ID NO: 382)

MYC-1599 Target: 5'-CAGATCGAACAACCGAAAAATGACC- 3' (SEQ ID NO: 709)

5'-GUCUCCGACGACCCAGAAGGGA- 3' (SEQ ID NO: 2018)
3'-CAGGACUCGCCCUCCGAGAUCAGU- 5' (SEQ ID NO: 383)

MYC-1634 Target: 5'-GTCCCTCGAGACCCGAGGAATGTCA- 3' (SEQ ID NO: 710)

5'-CGGACACCGAGGAAAGUCAAGAGGC- 3' (SEQ ID NO: 2019)
3'-GCUGUGGCUCCUCUUACAGUUCU- 5' (SEQ ID NO: 384)

MYC-1639 Target: 5'-CGGACACCGAGGAAATGCTAAGGAGGC- 3' (SEQ ID NO: 711)

5'-GCCCAGGAGGAAAGCAGCUAAAACGGGA- 3' (SEQ ID NO: 2020)
3'-CGGUUCCUGCCCUUCUGGAUUCUUGCC- 5' (SEQ ID NO: 385)

MYC-1687 Target: 5'-GCCAGGAGGAAACGAGCTAAAACGGGA- 3' (SEQ ID NO: 712)

5'-GAACGAGCCUAACCCGAGCUUUUUGCC- 3' (SEQ ID NO: 2021)
3'-CCUCCUUGCCUUAUCUUGCCUUGAAAAA- 5' (SEQ ID NO: 386)

MYC-1693 Target: 5'-GAGAAGGACTAAAACGGACGTITTTTGC- 3' (SEQ ID NO: 713)

5'-AAAGCCAGCUUUUUGCCUUCGGU- 3' (SEQ ID NO: 2022)
3'-GCUUUUGCCUUGCCCCAAGGAGGC- 5' (SEQ ID NO: 387)

MYC-1698 Target: 5'-AACGAGCTAAACCCGAGCTTTTGGCC- 3' (SEQ ID NO: 714)

5'-CUAAACCCGAGCUUUUUGCCUUCGG- 3' (SEQ ID NO: 2023)
3'-GAUUUUGCCUUGCCCCAAAGGAGGC- 5' (SEQ ID NO: 388)

MYC-1704 Target: 5'-CTAAAAAGGAGCTTTTTGCGCCTGGT- 3' (SEQ ID NO: 715)

5'-ACGAGCCUUUUUUGCCUUCGGUACCA- 3' (SEQ ID NO: 2024)
3'-UGCUCGAAAACCCGGAGACCGACUUG- 5' (SEQ ID NO: 389)

MYC-1709 Target: 5'-ACCGACGTITTGTTGCGCTGCC- 3' (SEQ ID NO: 716)

5'-GUGACCGAUUCCCCGAGUUGGAAAACA- 3' (SEQ ID NO: 2025)
3'-CAUGUGCUUCGCCCCUAAACUUCUGU- 5' (SEQ ID NO: 390)

MYC-1729 Target: 5'-GTCGACCAGATCCCCGAGTTGGAAAACA- 3' (SEQ ID NO: 717)

5'-CAGAUUCCCCGAGUUGGAAAACAAUGGA- 3' (SEQ ID NO: 2026)
3'-GCUUAGGGCUUCAACCUUUGUUGAUCU- 5' (SEQ ID NO: 391)

MYC-1734 Target: 5'-CAGATCCCCGAGTTGGAAAACAATGGA- 3' (SEQ ID NO: 718)

5'-CCCGAGUUUAGGAAAAAAGCAAGGAC- 3' (SEQ ID NO: 2027)
3'-GGGCCUAACCAUUAAUUUGUUUUGGUG- 5' (SEQ ID NO: 392)

MYC-1739 Target: 5'-CCCCGAGTTGGAAAACAAATGGAAGGC- 3' (SEQ ID NO: 719)

5'-CAAGGGUAGUUNUCUCUUUUUAAAAGCCAC- 3' (SEQ ID NO: 2028)
3'-GUUCCAUAAUGAAUUCUUGGUGGUGC- 5' (SEQ ID NO: 393)

MYC-1769 Target: 5'-CAAGTGTAGATTCTCCATAAAAAAGGAC- 3' (SEQ ID NO: 720)

5'-UAGUUAUCCCUUUUAAAGGCAAGCAU- 3' (SEQ ID NO: 2029)
3'-AUCUAAAUAUAAAUUUGGUGGUGC- 5' (SEQ ID NO: 394)

MYC-1774 Target: 5'-TAGTATTTTAAAGGCCCCACAGCAT- 3' (SEQ ID NO: 721)

5'-AUUUCUAAAAAGGCCACAGCAUCAU- 3' (SEQ ID NO: 2030)
3'-UAGGAUUUUUUCGGUUGCUAGUAG- 5' (SEQ ID NO: 395)
MYC-1779 Target: 5'-ATCCTTAaaaaaaaaGCCACACCATACATC-3' (SEQ ID NO: 722)
  5'-UAaaaaAGCCACAACAUACACCGUC-3' (SEQ ID NO: 2031)
  3'-AUGCCUGCAUGGAACAGGACG-5' (SEQ ID NO: 396)
MYC-1784 Target: 5'-TTAAAAAGCCACAGCATACTCTCGTC-3' (SEQ ID NO: 723)
  5'-AGGCCACAGCAUACACCGUCG-3' (SEQ ID NO: 2032)
  3'-UUGCUGUCUACUAGGACGCGGAG-5' (SEQ ID NO: 397)
MYC-1789 Target: 5'-AGGCCACAGCATACATC-3' (SEQ ID NO: 724)
  5'-AGCCUGUCUACUAGGACGCGGAG-3' (SEQ ID NO: 2043)
  3'-UGCCUGUGGAGGACGCGGAG-5' (SEQ ID NO: 400)
MYC-1795 Target: 5'-CAAGCAGGAGATCTTTAGTGTCC-3' (SEQ ID NO: 725)
  5'-UGCCUGUGGAGGACGCGGAG-3' (SEQ ID NO: 2044)
  3'-UUGCCUGUGGAGGACGCGGAG-5' (SEQ ID NO: 401)
MYC-1799 Target: 5'-ATCCTTAAAAAGCCACACCATACATC-3' (SEQ ID NO: 722)
  5'-UAaaaaAGCCACAACAUACACCGUC-3' (SEQ ID NO: 2031)
  3'-AUGCCUGCAUGGAACAGGACG-5' (SEQ ID NO: 396)
MYC-1803 Target: 5'-ATCCCTGCTCGTCAGGACGACGACGACG-3' (SEQ ID NO: 726)
  5'-UGCCUGUGGAGGACGCGGAG-3' (SEQ ID NO: 2035)
  3'-UGCCUGUGGAGGACGCGGAG-5' (SEQ ID NO: 402)
MYC-1808 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 727)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2036)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 403)
MYC-1816 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 728)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2037)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 404)
MYC-1823 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 729)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2038)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 405)
MYC-1828 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 730)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2039)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 406)
MYC-1834 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 731)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2040)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 407)
MYC-1840 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 732)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2041)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 408)
MYC-1850 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 733)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-3' (SEQ ID NO: 2042)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACG-5' (SEQ ID NO: 409)
MYC-1855 Target: 5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACGACG-3' (SEQ ID NO: 734)
  5'-GGGTCCTCCCGTGCCGAGCAGGACGACGACGACG-3' (SEQ ID NO: 2043)
  3'-GGGTCCTCCCGTGCCGAGCAGGACGACGACGACG-5' (SEQ ID NO: 410)
5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 2044)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 409)

MYC-1882 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 736)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 409)

MYC-1888 Target: 5'-'TTGAACAGCTACGGAACCTCTTGTGCAG-3' (SEQ ID NO: 737)
3'-'AACUUGUCGAUGCCUUGAGAACACGCA-5' (SEQ ID NO: 410)

MYC-1893 Target: 5'-'CAGCUACGGAACUCUUGUGCGUAAGGA-3' (SEQ ID NO: 2045)
3'-'AACUUGUCGAUGCCUUGAGAACACGCA-5' (SEQ ID NO: 411)

MYC-1900 Target: 5'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 738)
3'-'AACUUGUCGAUGCCUUGAGAACACGCA-5' (SEQ ID NO: 412)

MYC-1906 Target: 5'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 739)
3'-'AACUUGUCGAUGCCUUGAGAACACGCA-5' (SEQ ID NO: 413)

MYC-1911 Target: 5'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 740)
3'-'AACUUGUCGAUGCCUUGAGAACACGCA-5' (SEQ ID NO: 414)

MYC-1921 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 408)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 415)

MYC-1926 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 409)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 416)

MYC-1931 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 410)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 417)

MYC-1937 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 412)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 418)

MYC-1944 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 413)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 419)

MYC-1953 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 420)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 421)

MYC-1959 Target: 5'-'ACAAACUUGAACAGCUACGGAACUCUU-3' (SEQ ID NO: 422)
3'-'UGUUUGAACUUGGAUCGCUUCCUGAGA-5' (SEQ ID NO: 423)
3'-'UACAUUUGACGGAGUUUAACCUGAAAC-5' (SEQ ID NO: 435)

MYC-2048 Target: 5'-'ATGTAAACTGCTCACAATTGGACTTTG-3' (SEQ ID NO: 762)

5'-'ACUGCCUAAUUGACGGAGUUUAACCUGAAAC-3' (SEQ ID NO: 2071)
3'-'UGACGGAGUUUAACCUGAAACCCCGAU-5' (SEQ ID NO: 436)

MYC-2054 Target: 5'-'ACTGCGCTCAAAATTTGGACTTTTGGGCATA-3' (SEQ ID NO: 763)

5'-'UUGUAUUUAAGAAUUGUUUUUAAAAAAU-3' (SEQ ID NO: 2083)
3'-'ACAUAAAUUCUUAACAAAAAUUUUUUA-5' (SEQ ID NO: 448)

MYC-2059 Target: 5'-'CTCAAAATTTGGACTTTTGGGCATAAAAGA-3' (SEQ ID NO: 764)

5'-'UUGACUUUGGCGCAUUAAAAAGAUCUUUUU-3' (SEQ ID NO: 2073)
3'-'ACCUGAAACCCGUUUUUCUGAAAAA-5' (SEQ ID NO: 438)

MYC-2066 Target: 5'-'TGGAATTTGGGCATAAAAGAACTTTTTTTATGC-3' (SEQ ID NO: 765)

5'-'AUAUAAGAACCUUUUUAUGCUAACCAGAA-3' (SEQ ID NO: 2074)
3'-'UAUUUUUUCUGAAAAAUAAGGAUGGU-5' (SEQ ID NO: 439)

MYC-2073 Target: 5'-'TGGGCATAAAAGAACTTTTTATGCTTACCAT-3' (SEQ ID NO: 766)

5'-'AUAUAAGAACCUUUUUAUGCUAACCAGAA-3' (SEQ ID NO: 2075)
3'-'UUCUUGAAAAAUAAGGAUGGU-5' (SEQ ID NO: 440)

MYC-2078 Target: 5'-'ATAAAAAGAATTTTTATGCTTACCAT-3' (SEQ ID NO: 767)

5'-'AGAACUUUUUUAUGCUAACCAGAA-3' (SEQ ID NO: 2076)
3'-'UCUGAAAAAUAAGGAUGGU-5' (SEQ ID NO: 441)

MYC-2083 Target: 5'-'AGAATTTTTATGCTTACCAT-3' (SEQ ID NO: 768)

5'-'UUUUAUGCUUIAACCAUUUUUUUUUUU-3' (SEQ ID NO: 2077)
3'-'AAAAGAUGCUUUGGAAGAAGAAAAA-5' (SEQ ID NO: 442)

MYC-2089 Target: 5'-'TTTTTATGCTTACCAT-3' (SEQ ID NO: 769)

5'-'AUGCUUACUCUUUUUUUUUCUUUA-3' (SEQ ID NO: 2078)
3'-'UACGAAUGGUAAAGAAAAAAGAUA-5' (SEQ ID NO: 443)

MYC-2094 Target: 5'-'ATGCTTAACCATCTTTTTTTTCTTTTA-3' (SEQ ID NO: 770)

5'-'UACCAUCUUUUUUCCUUUAAACAGA-3' (SEQ ID NO: 2079)
3'-'AUGUGAAGAAAAAAGAAAAAUGUCC-5' (SEQ ID NO: 444)

MYC-2099 Target: 5'-'TACCACCTTTTTTTTTTTTACAGA-3' (SEQ ID NO: 771)

5'-'CUUUUUUCCUUUCCUUUAAACAGA-3' (SEQ ID NO: 2080)
3'-'GAUAAAAAAGAAAAAUCACACAU-5' (SEQ ID NO: 445)

MYC-2105 Target: 5'-'CTTTTTTTTTTTTTAACTGATTTG-3' (SEQ ID NO: 772)

5'-'UCUCUUACAGAUGUAUUAAGAUA-3' (SEQ ID NO: 2081)
3'-'AAGAAAUUGCUAACAAAUUCUAU-5' (SEQ ID NO: 446)

MYC-2114 Target: 5'-'TCTTTTAACAGATTTGATTTAAGAAT-3' (SEQ ID NO: 773)

5'-'AACGAAUUUGUAUUAAGAUAUGUUU-3' (SEQ ID NO: 2082)
3'-'UGUCUAACAAAUAAUUCUAACAAA-5' (SEQ ID NO: 447)

MYC-2120 Target: 5'-'AACGATTTGATTTAAGAATTGTTT-3' (SEQ ID NO: 774)

5'-'UGUAAAUUUAAAGAUAUGUUUAAAAC-3' (SEQ ID NO: 2083)
3'-'AUAUAAUUCUUAACAAAUUAAAUAU-5' (SEQ ID NO: 448)
MYC-2128 Target: 5'-TGATTTTAAGAATTGTTTTTAAAAAAT-3' (SEQ ID NO: 775)
5'-AAGAAUUGUUUUAAUAAAAUAAAAGA-3' (SEQ ID NO: 2084)
3'-UUCUUAACAAAAAUUUUAAUUUUCU-5' (SEQ ID NO: 449)

MYC-2135 Target: 5'-AGAATTGTTTTTAAAAAATTAGA-3' (SEQ ID NO: 776)
5'-ACAAGUUGUUCUGUAUUAAUUGCCAU-3' (SEQ ID NO: 2085)
3'-UGUUCAAAAGACAUUUUAACCGUA-5' (SEQ ID NO: 450)

MYC-2167 Target: 5'-ACAATGTTTCTCTGTAAATATTGCCAT-3' (SEQ ID NO: 777)
5'-CUCUGUAAAUUGCAAUAAUGUAA-3' (SEQ ID NO: 2086)
3'-GAGCAUUUUAACGGAUAAUUAACAU-5' (SEQ ID NO: 451)

MYC-2176 Target: 5'-CCTCTGTAATAATTTGCCATTAATGTAA-3' (SEQ ID NO: 778)
5'-UAAGAAUUGUAAAUAUUGUAAAC-3' (SEQ ID NO: 2087)
3'-AUUUAUACCGUAUUAAUUAUG-5' (SEQ ID NO: 452)

MYC-2181 Target: 5'-TAAATATGGCATTAAATGTAATAAC-3' (SEQ ID NO: 779)
5'-UGCCAUUUAUUGAAAAUACUUUUAU-3' (SEQ ID NO: 2088)
3'-ACCGGAUAAUCAUUAUGAAAUAU-5' (SEQ ID NO: 453)

MYC-2188 Target: 5'-TGCCATTAAATGTAATAACTTTAATA-3' (SEQ ID NO: 780)
5'-CUUUAUAAAACGUGUUAUACGAAUC-3' (SEQ ID NO: 2089)
3'-GAAUAUUAAUUGCCAAUAUUGCAAGA-5' (SEQ ID NO: 454)

MYC-22 07 Target: 5'-CTTTAAATAAAACGTTTATAGCAGTTAC-3' (SEQ ID NO: 781)
5'-CACACAAAUUAUCCAGUUAAUAAUAG-3' (SEQ ID NO: 2090)
3'-GUCUUAUAUAAUUCAGAAUAACAG-5' (SEQ ID NO: 455)

MYC-22 33 Target: 5'-CACAGAATTTCAATCCTAGTATATAGT-3' (SEQ ID NO: 782)
5'-ACCUAGUAAUUAAGAGCAUAAAACC-3' (SEQ ID NO: 2091)
3'-UGCUUAUAAUAUACGAAAUCAGUUG-5' (SEQ ID NO: 456)

MYC-22 60 Target: 5'-ACCTAGTATTATAGTTACTAAAAACCC-3' (SEQ ID NO: 783)
5'-AUUUAAGGUACUUAUAAACCCGUAAUU-3' (SEQ ID NO: 2092)
3'-UAUUAUUCGUUAUUAUUGGGAUAAUAA-5' (SEQ ID NO: 457)

MYC-22 67 Target: 5'-ATTATAGGTACTATAAACCCCTAATTT-3' (SEQ ID NO: 784)
5'-GUACUUAAGAACCUCUAUAAAUUU-3' (SEQ ID NO: 2093)
3'-CAUGUAAUUGGGGUAUAAAAAUAUU-5' (SEQ ID NO: 458)

MYC-2274 Target: 5'-GTACTATAAACCTAATTTTTTTTATT-3' (SEQ ID NO: 785)
5'-ACCCCUAAUAAUUUUAAUAAUUGA-3' (SEQ ID NO: 2094)
3'-UUGGUAUAAUAAAAAUAUUUCGAUA-5' (SEQ ID NO: 459)

MYC-2282 Target: 5'-ACCCCTAATTTTTTTTTTTTAATGACTA-3' (SEQ ID NO: 786)
5'-UAUUUUUUAAUUGUAAUUGUAAUUUCG-3' (SEQ ID NO: 2095)
3'-AUUAAAAAAAUAAUUGUAAUCAU-5' (SEQ ID NO: 460)

MYC-2287 Target: 5'-TAAATTTTTTTTTTTTAAGTACATTTTG-3' (SEQ ID NO: 787)
5'-UUUUUUAAUUGUAAUUGUAAUUGC-3' (SEQ ID NO: 2096)
3'-AAUAUUAAUUCAGAAAUAUUU-5' (SEQ ID NO: 461)

MYC-2295 Target: 5'-TTTTTTTTAGTACATTTTTGACTTAA-3' (SEQ ID NO: 788)
5'-UUAGUACAUUGCUUUAAAGUUG-3' (SEQ ID NO: 2097)
3'-AUUACGUGAAGCUGGAAUAUUCAC-5' (SEQ ID NO: 462)

MYC-2300 Target: 5'-TGAATGATACATTTTGCTTTTTAAGTGG-3' (SEQ ID NO: 789)

5'-ACAUUUUGCUUUUUAAAGUUG-3' (SEQ ID NO: 2098)
3'-UGUUACGAAUAAUAAUUCACUAAA-5' (SEQ ID NO: 463)

MYC-2306 Target: 5'-ACATTTTGCTTTTTAAGTGG-3' (SEQ ID NO: 790)

5'-UGCUCUUUAAGUUGAUUUUCUCUAU-3' (SEQ ID NO: 2099)
3'-ACGAAAUAUUUCACUAAAAGAUAA-5' (SEQ ID NO: 464)

MYC-2312 Target: 5'-TGCTTTTTAAAGTGG-3' (SEQ ID NO: 791)

5'-GGCUUUUAAGUUGAUUUACU-3' (SEQ ID NO: 2100)
3'-GAAAUAUAAAAGUUGACGCUUAUUU-5' (SEQ ID NO: 465)

MYC-2334 Target: 5'-TGCTTTTTAAAGTGG-3' (SEQ ID NO: 792)

5'-ACGAAAUAUUUAAGUUGACGCUUAUUU-5' (SEQ ID NO: 467)

MYC-2339 Target: 5'-TGCTTTTTAAAGTGG-3' (SEQ ID NO: 793)

5'-GAAAUAUAAAAGUUGACGCUUAUUU-5' (SEQ ID NO: 468)

MYC-2347 Target: 5'-GAAAATAAAATAACTGGCAATATA-3' (SEQ ID NO: 794)

5'-UUUUAUUUGGGAUUGUGCUUUAUU-5' (SEQ ID NO: 470)

MYC-2364 Target: 5'-GAAAATAAAATAACTGGCAATATA-3' (SEQ ID NO: 796)

5'-GGCUUUUAAGUUGAUUUACU-3' (SEQ ID NO: 2102)
3'-GCAAUAUAAAAGUUGACGCUUAUUU-5' (SEQ ID NO: 469)

MYC-2371 Target: 5'-GAAAATAAAATAACTGGCAATATA-3' (SEQ ID NO: 797)

5'-UGAGACGUGGGAUUGUGCUUUAUU-3' (SEQ ID NO: 2103)
3'-ACGAAAUAUUUAAGUUGACGCUUAUUU-5' (SEQ ID NO: 470)

MYC-2355 Target: 5'-GAAATTAACTGGCAATATACTTGAG-3' (SEQ ID NO: 795)

5'-UGAGACGUGGGAUUGUGCUUUAUU-3' (SEQ ID NO: 2104)
3'-ACGAAAUAUUUAAGUUGACGCUUAUUU-5' (SEQ ID NO: 471)

MYC-2357 Target: 5'-GAAATTAACTGGCAATATACTTGAG-3' (SEQ ID NO: 797)

5'-UGAGACGUGGGAUUGUGCUUUAUU-5' (SEQ ID NO: 470)

MYC-2377 Target: 5'-GGAATTAACCTGGCAATATACTTGAG-3' (SEQ ID NO: 798)

5'-UGAGACGUGGGAUUGUGCUUUAUU-3' (SEQ ID NO: 2106)
3'-ACGAAAUAUUUAAGUUGACGCUUAUUU-5' (SEQ ID NO: 470)

MYC-2378 Target: 5'-GGAATTAACCTGGCAATATACTTGAG-3' (SEQ ID NO: 799)

5'-UGAGACGUGGGAUUGUGCUUUAUU-3' (SEQ ID NO: 2107)
3'-ACGAAAUAUUUAAGUUGACGCUUAUUU-5' (SEQ ID NO: 470)

MYC-2379 Target: 5'-GGAATTAACCTGGCAATATACTTGAG-3' (SEQ ID NO: 800)

5'-UGAGACGUGGGAUUGUGCUUUAUU-3' (SEQ ID NO: 2109)
3'-ACGAAAUAUUUAAGUUGACGCUUAUUU-5' (SEQ ID NO: 474)

MYC-2380 Target: 5'-GGAATTAACCTGGCAATATACTTGAG-3' (SEQ ID NO: 801)
5' -CUCGCUGUAGUAAUCCAGCGAGAGGC- 3'  (SEQ ID NO: 2110)
3' -GAGCGACAUCAUUAAGGUCGCUCUCCG- 5'  (SEQ ID NO: 475)

MYC-191 Target:  5' -CTCGCTGTAGTAATTCACCGGAGGAGGC- 3'  (SEQ ID NO: 802)
5' -UCGCUAGUAAUCCAGCGAGAGGC- 3'  (SEQ ID NO: 2111)
3' -AGCGACAUCAUUAAGGUCGCUCUCCG- 5'  (SEQ ID NO: 476)

MYC-192 Target:  5' -TCGCTGTAGTAATTCACCGGAGGAGGC- 3'  (SEQ ID NO: 803)
5' -CGCGACAUCAUUAAGGUCGCUCUCCG- 3'  (SEQ ID NO: 2112)
3' -GCAACAUCAUUAAGGUCGCUCUCCGUC- 5'  (SEQ ID NO: 477)

MYC-193 Target:  5' -CCGCTGTAGTAATTCACCGGAGGAGGC- 3'  (SEQ ID NO: 804)
5' -GUCUAGUAAUCCAGCGAGAGGC- 3'  (SEQ ID NO: 2113)
3' -GCAACAUCAUUAAGGUCGCUCUCCGUC- 5'  (SEQ ID NO: 479)

MYC-194 Target:  5' -CTCGCTGTAGTAATTCACCGGAGGAGGC- 3'  (SEQ ID NO: 805)
5' -CUGUAGUAAUCCAGCGAGAGGC- 3'  (SEQ ID NO: 2114)
3' -UCGACAUCAUUAAGGUCGCUCUCCGUC- 5'  (SEQ ID NO: 480)

MYC-195 Target:  5' -AGCCTCACCACAGGAACACTATGACCT- 3'  (SEQ ID NO: 807)
5' -GCUCACCAACAGGAACACTATGACCT- 3'  (SEQ ID NO: 2115)
3' -CGAAGUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 481)

MYC-612 Target:  5' -CTGCTCACCACAGGAACACTATGACCT- 3'  (SEQ ID NO: 808)
5' -CUUCCACCAACAGGAACACTATGACCT- 3'  (SEQ ID NO: 2117)
3' -GAAUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 482)

MYC-613 Target:  5' -CTGCTCACCACAGGAACACTATGACCT- 3'  (SEQ ID NO: 809)
5' -UCUCCACCAACAGGAACACTATGACCT- 3'  (SEQ ID NO: 2118)
3' -AAGUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 483)

MYC-614 Target:  5' -CTGCTCACCACAGGAACACTATGACCT- 3'  (SEQ ID NO: 810)
5' -UCUCCACCAACAGGAACACTATGACCT- 3'  (SEQ ID NO: 2119)
3' -AUGUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 484)

MYC-615 Target:  5' -CTGCTCACCACAGGAACACTATGACCT- 3'  (SEQ ID NO: 811)
5' -UCUCCACCAACAGGAACACTATGACCT- 3'  (SEQ ID NO: 2120)
3' -UGGUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 485)

MYC-616 Target:  5' -CTGCTCACCACAGGAACACTATGACCT- 3'  (SEQ ID NO: 812)
5' -ACCAACAGGAACTATGACCTGACT- 3'  (SEQ ID NO: 2121)
3' -UGGUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 486)

MYC-617 Target:  5' -ACCAACAGGAACTATGACCTGACT- 3'  (SEQ ID NO: 813)
5' -CCGCGACAUCAUUAAGGUCGCUCUCCG- 3'  (SEQ ID NO: 2122)
3' -GGUGUGGCGUCUGGUAACUGGAC- 5'  (SEQ ID NO: 487)

MYC-618 Target:  5' -ACCAACAGGAACTATGACCTGACT- 3'  (SEQ ID NO: 814)
5' -CCGCGACAUCAUUAAGGUCGCUCUCCG- 3'  (SEQ ID NO: 2123)
3'-'GUUGUCCUUGAUACUGGAGCUGAUGCU-5' (SEQ ID NO: 488)

MYC-620 Target: 5'-'CAACAGGAACTATGACCTCGACTACGAC-3' (SEQ ID NO: 489)

5'-'AACAGGAAUCAGCUGACUAAGAC-3' (SEQ ID NO: 2124)
3'-'UGCCUUGAUCGUGACUGAGUCG-5' (SEQ ID NO: 489)

MYC-621 Target: 5'-'AACAGGAACTATGACCTCGACTACGAC-3' (SEQ ID NO: 489)

5'-'ACAGGAAUAUCAGCUGACUAAGAC-3' (SEQ ID NO: 2125)
3'-'UGCUUAUGAUGGAGCUGAUGCUG-5' (SEQ ID NO: 490)

MYC-622 Target: 5'-'CAACAGGAACTATGACCTCGACTACGAC-3' (SEQ ID NO: 491)

5'-'CAGGAACUAUGACCGACUAAGAC-3' (SEQ ID NO: 2126)
3'-'GUCCUUGAUCGUGACUGAGUCG-5' (SEQ ID NO: 492)

MYC-623 Target: 5'-'CAACAGGAACTATGACCTCGACTACGAC-3' (SEQ ID NO: 493)

5'-'AGGAAUAUGACCGACUAAGAC-3' (SEQ ID NO: 2127)
3'-'UGCUUAUGAUGGAGCUGAUGCUG-5' (SEQ ID NO: 494)

MYC-624 Target: 5'-'CAACAGGAACTATGACCTCGACTACGAC-3' (SEQ ID NO: 495)

5'-'GGAACUAUGACCGACUAAGAC-3' (SEQ ID NO: 2128)
3'-'GUUACUUGAUGGAGCUGAUGCUGAGCC-5' (SEQ ID NO: 496)

MYC-625 Target: 5'-'GAACACTATGGAACCTCGACTACGACTCGG-3' (SEQ ID NO: 497)

5'-'AACAGGAAUCAGCUGACUAAGAC-3' (SEQ ID NO: 2130)
3'-'UGCUUAUGAUGGAGCUGAUGCUGAC-5' (SEQ ID NO: 499)

MYC-626 Target: 5'-'GAACACTATGGAACCTCGACTACGACTCGG-3' (SEQ ID NO: 500)

5'-'ACUAUGACCGACUAAGAC-3' (SEQ ID NO: 2131)
3'-'UGCUUAUGAUGGAGCUGAUGCUGAC-5' (SEQ ID NO: 501)

MYC-628 Target: 5'-'GAACACTATGGAACCTCGACTACGACTCGG-3' (SEQ ID NO: 502)

5'-'CUAUGACCGACUAAGAC-3' (SEQ ID NO: 2132)
3'-'GUACUGGACUGAUGCUGAC-5' (SEQ ID NO: 497)

MYC-629 Target: 5'-'CTATGGAACCTCGACTACGACTCGG-3' (SEQ ID NO: 498)

5'-'GCCGGAACCUUGAGAAGAAAUCGUG-3' (SEQ ID NO: 2133)
3'-'GUCCCCUAUGAAGACUUUUAAAGCUG-5' (SEQ ID NO: 499)

MYC-73 3 Target: 5'-'GCCGGAACCUUGAGAAGAAAUCGUG-3' (SEQ ID NO: 501)

5'-'CGAGGAACUAUGGAGAAGAAAUCGUG-3' (SEQ ID NO: 2134)
3'-'GCUCUCCUAUGAAGACUUUUAAAGCUG-5' (SEQ ID NO: 502)

MYC-73 4 Target: 5'-'CGAGGAACUAUGGAGAAGAAAUCGUG-3' (SEQ ID NO: 503)

5'-'GAGGAAUCUGGAAAGAAAUCGUG-3' (SEQ ID NO: 2135)
3'-'GUCCUUAUGAAGACUUUUAAAGCUGAC-5' (SEQ ID NO: 504)

MYC-73 5 Target: 5'-'GAGGAAUCUGGAAAGAAAUCGUG-3' (SEQ ID NO: 2136)
3'-'UCUCUUAUGAAGACUUUUAAAGCUGAC-5' (SEQ ID NO: 505)
MYC-73 Target: 5'-'AGGATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 828)
5'-'GGAUAUCUGGAAGAAUUCGAGCUGCU-3'  (SEQ ID NO: 2137)
3'-'CCUAGACCUCUUCUUAAAGCUCCGACGA-5'  (SEQ ID NO: 502)
MYC-73 7 Target: 5'-'GGATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 829)
5'-'GGAUAUCUGGAAGAAUUCGAGCUGCU-3'  (SEQ ID NO: 2138)
3'-'CUAGACCUCUUCUUAAAGCUCCGACGC-5'  (SEQ ID NO: 503)
MYC-73 8 Target: 5'-'GATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 830)
5'-'GGAUAUCUGGAAGAAUUCGAGCUGCU-3'  (SEQ ID NO: 2139)
3'-'UAAGACCUCUUCUUAAAGCUCCGACGC-5'  (SEQ ID NO: 504)
MYC-73 9 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 831)
5'-'GGAUAUCUGGAAGAAUUCGAGCUGCU-3'  (SEQ ID NO: 2140)
3'-'UAAGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 505)
MYC-74 0 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 832)
5'-'GGAUAUCUGGAAGAAUUCGAGCUGCU-3'  (SEQ ID NO: 2141)
3'-'UAAGACCUCUUUAAGCUCCGACGC-5'  (SEQ ID NO: 506)
MYC-74 1 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 833)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2142)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 507)
MYC-74 2 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 834)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2143)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 508)
MYC-74 3 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 835)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2144)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 509)
MYC-74 4 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 836)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2145)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 510)
MYC-74 5 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 837)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2146)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 511)
MYC-74 6 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 838)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2147)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 512)
MYC-74 7 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 839)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2148)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 513)
MYC-74 8 Target: 5'-'ATATCTGGAAAGAATTCGAGCTGC-3'  (SEQ ID NO: 840)
5'-'UCUGGAAGAAUUCGAGCUGCUCCCA-3'  (SEQ ID NO: 2149)
3'-'AGACCUCUUCUUAAGCUCCGACGC-5'  (SEQ ID NO: 514)
MYC-913 Target: 5'-'TGGAAGGAGCAATGTGAACCAGAGTT-3'  (SEQ ID NO: 841)
5' -GGGAGGAGACAUUGUGAACCAGAGUUU-3' (SEQ ID NO: 2150)
3' -CCUCUCUCUGUACCAUCUUGGUCUCAA-5' (SEQ ID NO: 515)

MYC-914 Target: 5' -GGGAGGAGACATGGTAACCAGAGTTT-3' (SEQ ID NO: 842)
3' -CCCUCCUCUGUACCACUUGGUCUCAAAGU-5' (SEQ ID NO: 516)

MYC-915 Target: 5' -GGAGGAGACATGGTAACCAGAGTTT-3' (SEQ ID NO: 843)
3' -CCCUCCUCUGUACCACUUGGUCUCAAAGU-5' (SEQ ID NO: 517)

MYC-916 Target: 5' -AGGAGACATGGTAACCAGAGTTTTCA-3' (SEQ ID NO: 844)
3' -CCCUCCUCUGUACCACUUGGUCUCAAAGU-5' (SEQ ID NO: 518)

MYC-917 Target: 5' -AGGAGACATGGTAACCAGAGTTTTCA-3' (SEQ ID NO: 845)
3' -CCCUCCUCUGUACCACUUGGUCUCAAAGU-5' (SEQ ID NO: 519)

MYC-952 Target: 5' -GGACGAGACAGCTTCATCAAAAACA-3' (SEQ ID NO: 846)
3' -GGACGAGACAGCTTCATCAAAAACA-3' (SEQ ID NO: 520)

MYC-953 Target: 5' -GGACGAGACAGCTTCATCAAAAACA-3' (SEQ ID NO: 847)
3' -GGACGAGACAGCTTCATCAAAAACA-3' (SEQ ID NO: 521)

MYC-973 Target: 5' -AAAACATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 848)
3' -AAAACATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 522)

MYC-974 Target: 5' -AAAACATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 849)
3' -AAAACATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 523)

MYC-975 Target: 5' -AAAACATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 850)
3' -AAAACATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 524)

MYC-976 Target: 5' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 851)
3' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 525)

MYC-977 Target: 5' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 852)
3' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 526)

MYC-978 Target: 5' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 853)
3' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 527)

MYC-979 Target: 5' -ACATCATCATCACCCAGACTGTATGT-3' (SEQ ID NO: 854)
5'-CAUCAUCCAGGACUGUAUGUGGAGCGG-3' (SEQ ID NO: 2163)
3'-GUAGGUAGGUAGUGACGAGGCGC-5' (SEQ ID NO: 528)
MYC-980 Target: 5'-CATCATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 855)
5'-CAUCAUCCAGGACUGUAUGUGGAGCGGCGC-3' (SEQ ID NO: 2164)
3'-UAGUAGGUAGGUAGACGAGGCGC-5' (SEQ ID NO: 529)
MYC-981 Target: 5'-ATCATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 856)
5'-CAUCAUCCAGGACUGUAUGUGGAGCGGCGC-3' (SEQ ID NO: 2165)
3'-AGUAGGUAGGUAGACGAGGCGC-5' (SEQ ID NO: 530)
MYC-982 Target: 5'-ATCATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 857)
5'-CAUCAUCCAGGACUGUAUGUGGAGCGGCGC-3' (SEQ ID NO: 2166)
3'-AGUAGGUAGGUAGACGAGGCGC-5' (SEQ ID NO: 531)
MYC-983 Target: 5'-ATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 858)
5'-CAUCAUCCAGGACUGUAUGUGGAGCGGCGC-3' (SEQ ID NO: 2167)
3'-AGUAGGUAGGUAGACGAGGCGC-5' (SEQ ID NO: 532)
MYC-984 Target: 5'-ATCCAGGACTGTATGTGGAGCGG-3' (SEQ ID NO: 859)
5'-CCAGGACTGTATGTGGAGCGGCGC-3' (SEQ ID NO: 2168)
3'-GUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 533)
MYC-985 Target: 5'-CCAGGACTGTATGTGGAGCGGCGC-3' (SEQ ID NO: 860)
5'-CCAGGACTGTATGTGGAGCGGCGC-3' (SEQ ID NO: 2169)
3'-GUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 534)
MYC-986 Target: 5'-CCAGGACTGTATGTGGAGCGGCGC-3' (SEQ ID NO: 861)
5'-CCAGGACTGTATGTGGAGCGGCGC-3' (SEQ ID NO: 2170)
3'-GUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 535)
MYC-1033 Target: 5'-CAAGAAAGCTGCTGCCCTCTTACCAGGCTG-3' (SEQ ID NO: 862)
5'-AGAGGCUGGCCUCUCACCCAGGCUCG-3' (SEQ ID NO: 2171)
3'-CUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 536)
MYC-1034 Target: 5'-AGAGAAAGCTGCTGCCCTCTTACCAGGCTG-3' (SEQ ID NO: 863)
5'-AGAGGCUGGCCUCUCACCCAGGCUCG-3' (SEQ ID NO: 2172)
3'-CUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 537)
MYC-1035 Target: 5'-AGAGAAAGCTGCTGCCCTCTTACCAGGCTG-3' (SEQ ID NO: 864)
5'-AGAGGCUGGCCUCUCACCCAGGCUCG-3' (SEQ ID NO: 2173)
3'-CUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 538)
MYC-1036 Target: 5'-AGAGAAAGCTGCTGCCCTCTTACCAGGCTG-3' (SEQ ID NO: 865)
5'-AGAGGCUGGCCUCUCACCCAGGCUCG-3' (SEQ ID NO: 2174)
3'-CUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 539)
MYC-1037 Target: 5'-AGAGAAAGCTGCTGCCCTCTTACCAGGCTG-3' (SEQ ID NO: 866)
5'-AGAGGCUGGCCUCUCACCCAGGCUCG-3' (SEQ ID NO: 2175)
3'-CUCUCUCUCUCACCUCGCAGCAG-5' (SEQ ID NO: 540)
MYC-1038 Target: 5'-AGAGAAAGCTGCTGCCCTCTTACCAGGCTG-3' (SEQ ID NO: 867)
5'-AGAGGCUGGCCUCUCACCCAGGCUCG-3' (SEQ ID NO: 2176)
3'-UCGACCGGAGGAUGGUCCGACGCGCGU-5' (SEQ ID NO: 541)
MYC-1039 Target: 5'-AGCTGGCCTCCTACCAAGGCTGCGCGCA-3' (SEQ ID NO: 868)
5'-GGUCCGACGCGCGUUUCUGUCGCCGUC-3' (SEQ ID NO: 554)
MYC-1040 Target: 5'-GCTGGCCTCCTACCAAGGCTGCGCGCA-3' (SEQ ID NO: 869)
5'-CUGGCCUCUACCAAGGUCGCACGCCGCAA-3' (SEQ ID NO: 2178)
3'-GACCGGAUGGUCCGACGCGCGUUGU-5' (SEQ ID NO: 543)
MYC-1041 Target: 5'-TGCCCTCTTACCAGGCTGCGCGCAA-3' (SEQ ID NO: 870)
5'-UGGCUCUCUACCAAGGUCGCACGCCGCAA-3' (SEQ ID NO: 2179)
3'-ACCGGAUGGUCCGACGCGCGUUGU-5' (SEQ ID NO: 554)
MYC-1042 Target: 5'-CGCTCTCTACCGGCTGCGCGCAAAG-3' (SEQ ID NO: 871)
5'-GCCUCUCUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2180)
3'-CCAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 546)
MYC-1043 Target: 5'-GGCTCTCTTACCAGGCTGCGCGCAAAG-3' (SEQ ID NO: 872)
5'-CCUCUCUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2181)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 547)
MYC-1044 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 873)
5'-CCUCUCUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2182)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 547)
MYC-1045 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 874)
5'-CCUCUCUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2183)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 548)
MYC-1046 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 875)
5'-CCUCUCUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2184)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 549)
MYC-1047 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 876)
5'-CCUCUCUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2185)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 550)
MYC-1048 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 877)
5'-CUACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2186)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 551)
MYC-1049 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 878)
5'-UACCAAGGUCGCACGCCGCAAAGAC-3' (SEQ ID NO: 2187)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 552)
MYC-1050 Target: 5'-CTCTCTTACCAGGCTGCGCGCAAAGAC-3' (SEQ ID NO: 879)
5'-ACCCAGGCACGCCGCAAAGAC-3' (SEQ ID NO: 2188)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 553)
MYC-1051 Target: 5'-ACCAGGCACGCCGCAAAGAC-3' (SEQ ID NO: 880)
5'-ACCCAGGCACGCCGCAAAGAC-3' (SEQ ID NO: 2189)
3'-CGAGGAUGGUCCGACGCGCGUUGUUGU-5' (SEQ ID NO: 554)
MYC-1052 Target: 5'-CCAGGCTGCCGCAAGACACGCAGGCAG-3' (SEQ ID NO: 881)
   5'-CAGGCUGCGCGCAAAGACAGCGGCAGC-3' (SEQ ID NO: 567)
MYC-1096 Target: 5'-GCCACAGCGGAGACACCGCCCACCACCA-3' (SEQ ID NO: 894)
   5'-CCAGGCGGCCCAAGACAGCGGCAG-3' (SEQ ID NO: 2190)
   3'-GUGUGUGCGACAGGGGUGGAGGCGGA-5' (SEQ ID NO: 555)
MYC-1097 Target: 5'-CCACAGCGTCGCTCCACCTCCACGCTT-3' (SEQ ID NO: 884)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2192)
   3'-GGUGUGCGACAGGGGUGGAGGCGGA-5' (SEQ ID NO: 557)
MYC-1098 Target: 5'-CACACGCAGCAGCAGCTCGCCCAAGTCCTG-3' (SEQ ID NO: 885)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2194)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 559)
MYC-1099 Target: 5'-CCACACTGCTCGCCACCTCCACGCTTGT-3' (SEQ ID NO: 886)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2195)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 560)
MYC-1100 Target: 5'-CCACACGCTGCTCCACCTCCACGCTTGT-3' (SEQ ID NO: 887)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2196)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 561)
MYC-1101 Target: 5'-CCACACGCTGCTCCACCTCCACGCTTAC-3' (SEQ ID NO: 888)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2197)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 562)
MYC-1102 Target: 5'-CTCTCAACGACACGCTCGCCCAAGT-3' (SEQ ID NO: 889)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2198)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 563)
MYC-1103 Target: 5'-CTCTCAACGACACGCTCGCCCAAGT-3' (SEQ ID NO: 890)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2199)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 564)
MYC-1104 Target: 5'-CTCTCAACGACACGCTCGCCCAAGT-3' (SEQ ID NO: 891)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2200)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 565)
MYC-1105 Target: 5'-TCAACGACACGCTGCTCCCAAGTCT-3' (SEQ ID NO: 892)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2201)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 566)
MYC-1106 Target: 5'-TCAACGACACGCTGCTCCCAAGTCT-3' (SEQ ID NO: 893)
   5'-CCACAGCGGCGCGCAAAGACAGCGGCAG-3' (SEQ ID NO: 2202)
   3'-GUGUGCGACAGGGGUGGAGGCGGAAC-5' (SEQ ID NO: 567)
MYC-1107 Target: 5'-TCAACGACACGCTGCTCCCAAGTCT-3' (SEQ ID NO: 894)
5'-CCAUGAGGAGACACCGCCCACCACCAG-3' (SEQ ID NO: 2203)
3'-GGUACUCCUCUGUGGCGGGUGGUGGUC-5' (SEQ ID NO: 568)

MYC-1316 Target: 5'-CCATGAGGAGACACCGCCCACCACCAG-3' (SEQ ID NO: 895)
3'-GUACUCCUCUGUGGCGGGUGGUGGUCG-5' (SEQ ID NO: 569)

MYC-1317 Target: 5'-CATGAGGAGACACCGCCCACCACCAGC-3' (SEQ ID NO: 896)
3'-UACUCUCUGUGGCGGGUGGUGGUCG-5' (SEQ ID NO: 570)

MYC-1318 Target: 5'-ATGAGGAGACACCGCCCACCACCAGC-3' (SEQ ID NO: 897)
3'-UCUCUCUGUGGCGGGUGGUGGUCGCU-5' (SEQ ID NO: 571)

MYC-1319 Target: 5'-GAGGAGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 898)
3'-ACUCUCUGUGGCGGGUGGUGGUGGUCG-5' (SEQ ID NO: 572)

MYC-1320 Target: 5'-GAGGAGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 899)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 573)

MYC-1321 Target: 5'-AGGAGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 900)
3'-CCUCUGUGGCGGGUGGUGGUGGUGGUCG-5' (SEQ ID NO: 574)

MYC-1322 Target: 5'-GGAGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 901)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 575)

MYC-1323 Target: 5'-AGGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 902)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 576)

MYC-1324 Target: 5'-AGGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 903)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 577)

MYC-1325 Target: 5'-AGGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 904)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 578)

MYC-1326 Target: 5'-AGGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 905)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 579)

MYC-1327 Target: 5'-AGGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 906)
3'-UCUCUCUGUGGCGGGUGGUGGUGGUCGCU-5' (SEQ ID NO: 580)

MYC-1328 Target: 5'-AGGACACCGCCCACCACCAGCG-3' (SEQ ID NO: 907)
5' -CCGCCACCGACCGACGGACUUGAG-3' (SEQ ID NO: 2216)
3' -GCGGGUGGGUGGGUGGUGAGACUACU-5' (SEQ ID NO: 581)

MYC-1329 Target: 5' -CCGCCACCGACCGACGGACUUGAG-3' (SEQ ID NO: 908)

5' -CCGCCACCGACCGACGGACUUGAGG-3' (SEQ ID NO: 2217)
3' -GCGGGUGGGUGGGUGGUGAGACUACU-5' (SEQ ID NO: 582)

MYC-1330 Target: 5' -CCGCCACCGACCGACGGACUUGAGG-3' (SEQ ID NO: 909)

5' -GCCACCACCGACCGACGGACUUGAGGA-3' (SEQ ID NO: 2218)
3' -CGGGUGGGUUGUGGUGGUGAGACUACCU-5' (SEQ ID NO: 583)

MYC-1331 Target: 5' -GCCACCACCGACCGACGGACTCTGGAGA-3' (SEQ ID NO: 910)

5' -CCCCACCACCGACCGACGGACUUGAGGA-3' (SEQ ID NO: 2219)
3' -GGGGUGGGUGGUGGUGGUGAGACUACCU-5' (SEQ ID NO: 584)

MYC-1332 Target: 5' -CCCCACCACCGACCGACGGACTCTGAGGAGA-3' (SEQ ID NO: 911)

5' -CCACCCACCGACCGACGGACUUGAGGAG-3' (SEQ ID NO: 2220)
3' -GGGGUGGGUGGUGGUGGUGAGACUACCU-5' (SEQ ID NO: 585)

MYC-1333 Target: 5' -CCACCCACCGACCGACGGACTCTGAGGAGA-3' (SEQ ID NO: 912)

5' -AACAAAGAAGAAGAAGAAGAAGAAGAAG-3' (SEQ ID NO: 2221)
3' -UGGGUUGUGGUUCUACCCGCGACUACCU-5' (SEQ ID NO: 586)

MYC-1334 Target: 5' -AACAAAGAAGAAGAAGAAGAAGAAGAAG-3' (SEQ ID NO: 913)

5' -AACAAAGAAGAAGAAGAAGAAGAAGAAG-3' (SEQ ID NO: 2222)
3' -UGGGUUGUGGUUCUACCCGCGACUACCU-5' (SEQ ID NO: 587)

MYC-1360 Target: 5' -AACAAAGAAGAAGAAGAAGAAGAAGAAG-3' (SEQ ID NO: 914)

5' -AAAAGAAGAAGAAGAAGAAGAAGAAGAAG-3' (SEQ ID NO: 2223)
3' -UAUGUUCUUCUACCCGCGACUACCU-5' (SEQ ID NO: 588)

MYC-1361 Target: 5' -AAAAGAAGAAGAAGAAGAAGAAGAAGAAG-3' (SEQ ID NO: 915)

5' -UGAAGGCCACAGCAACCCGCGACUACCU-3' (SEQ ID NO: 2224)
3' -AGCCCGUGGUGUGCGAGGAGUUGGUC-5' (SEQ ID NO: 589)

MYC-1448 Target: 5' -TGGAGGGCCACAGCAACCCGCGACUACCU-3' (SEQ ID NO: 916)

5' -UCACACGGCCACUGUCCUCUCACAGGAGG-3' (SEQ ID NO: 2225)
3' -GAGGGUGGUGGCGACCGAGGAGUUGGUC-5' (SEQ ID NO: 590)

MYC-1468 Target: 5' -CTCACAGGCCCCACTGGTCAACAGGAGT-3' (SEQ ID NO: 917)

5' -UCAGAGCCACCGACCGACCCGCGACUACCU-3' (SEQ ID NO: 2226)
3' -AGGGUGGUGGCGACCGAGGAGUUGGUC-5' (SEQ ID NO: 591)

MYC-1469 Target: 5' -TCAGAGCCACCGACCGACCGAGGAGT-3' (SEQ ID NO: 918)

5' -UCAGAGCCACCGACCGACCGAGGAGT-3' (SEQ ID NO: 2227)
3' -AGGGUGGUGGCGACCGAGGAGUUGGUC-5' (SEQ ID NO: 592)

MYC-1470 Target: 5' -TCAGAGCCACCGACCGACCGAGGAGT-3' (SEQ ID NO: 919)

5' -ACAGAGCCACCGACCGACCGACGAGGAGG-3' (SEQ ID NO: 2228)
3' -UGGGUGGUGGCGACCGAGGAGUUGGUC-5' (SEQ ID NO: 593)

MYC-1471 Target: 5' -ACAGAGCCACCGACCGACCGACGAGGAGG-3' (SEQ ID NO: 920)

5' -CAGGCGCCCGACCGACCGACGAGGAGG-3' (SEQ ID NO: 2229)
3' -GUCGGGUGACCAGGAGUUCUCCACGGU-5' (SEQ ID NO: 594)

MYC-1472 Target: 5' -CAGCCCACTGGTCCTCAAGAGGTGCCA-3' (SEQ ID NO: 921)

5' -AGCCCAUGUAGGGCCACAC-3' (SEQ ID NO: 2230)
3' -UCGUGAGGGAGGGGCCCUGGUGCCG-5' (SEQ ID NO: 595)

MYC-1473 Target: 5' -AGCCCACTGGTCCTCAAGAGGTGCCA-3' (SEQ ID NO: 922)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2231)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 596)

MYC-1474 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 923)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2232)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 597)

MYC-1475 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 924)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2233)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 598)

MYC-1476 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 925)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2234)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 600)

MYC-1477 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 926)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2235)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 601)

MYC-1478 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 927)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2236)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 602)

MYC-1479 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 928)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2237)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 603)

MYC-1480 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 929)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2238)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 604)

MYC-1481 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 930)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2239)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 605)

MYC-1482 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 931)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2240)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 606)

MYC-1483 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 932)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2241)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 607)

MYC-1471 Target: 5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 933)

5' -GCCACUGUGCCCAAGAGGCCCAGC-3' (SEQ ID NO: 2242)
3' -CGGGUGACCCAGGGUCUGCCAGCUG-5' (SEQ ID NO: 607)
5' -GAGCTTTTTTGCCCTGCGTGACCAGAT-3' (SEQ ID NO: 934)
3' -UCGAAAAAACGGAACGCACUGGUCUAG-5' (SEQ ID NO: 608)

5' -AGCTTTTTTGCCCTGCGTGACCAGAT-3' (SEQ ID NO: 935)
3' -CGAAAAAACGGAACGCACUGGUCUAGG-5' (SEQ ID NO: 609)

5' -GCTTTTTTGCCCTGCGTGACCAGATCC-3' (SEQ ID NO: 936)
3' -UCUUUUGCCCUCGCGUGACCACAUCCG-3' (SEQ ID NO: 2245)
5' -AAGAAACCGCAACACUGUCAUGGGC-5' (SEQ ID NO: 611)

5' -CUUUGCCCGGUGACGGACAGAUCGGGA-3' (SEQ ID NO: 2247)
3' -AAACGGAACGCACUGUCAUGGGC-5' (SEQ ID NO: 612)

5' -UUUGGCCCUCGCGUGACCACAUCCCGG-3' (SEQ ID NO: 2248)
3' -AAACGGAACGCACUGUCAUGGGC-5' (SEQ ID NO: 613)

5' -UUUGGCCCUCGCGUGACCACAUCCCGGAG-3' (SEQ ID NO: 2249)
3' -AAACGGAACGCACUGUCAUGGGCCUC-5' (SEQ ID NO: 614)

5' -UUUGGCCCUCGCGUGACCACAUCCCGGAG-3' (SEQ ID NO: 2250)
3' -AAACGGAACGCACUGUCAUGGGCCUC-5' (SEQ ID NO: 615)

5' -TTGCCCCTGCGTGACCAGATCCCGGAG-3' (SEQ ID NO: 940)
3' -AAACGGAACGCACUGUCAUGGGCCUC-5' (SEQ ID NO: 616)

5' -TGCCCCTGCGTGACCAGATCCCGGAGGTT-3' (SEQ ID NO: 943)
3' -CGGGAGCAGAAACAGATTGAACAC-3' (SEQ ID NO: 2252)
5' -CGGGAGCAGAAACAGATTGAACAC-3' (SEQ ID NO: 2253)
3' -GCGGGAGCAGAAACAGATTGAACAC-5' (SEQ ID NO: 618)

5' -CGGGAGCAGAAACAGATTGAACAC-3' (SEQ ID NO: 944)
3' -CGGGAGCAGAAACAGATTGAACAC-5' (SEQ ID NO: 619)

5' -CGGGAGCAGAAACAGATTGAACAC-3' (SEQ ID NO: 946)
3' -AGGGAGCAGAAACAGATTGAACAC-5' (SEQ ID NO: 620)

5' -CTTTAACAGATTTCATTTAAGAATTG-3' (SEQ ID NO: 947)
5' -UUAAUGUAAAACUUUAAUAAAACG-3' (SEQ ID NO: 2256)
3' -AAUUUACAUUUUUGAAAUUUUGGCA-5' (SEQ ID NO: 622)

Myc-2193 Target: 5' -TTAATGTAATAACTTTAATAAAACG-3' (SEQ ID NO: 948)
5' -UAAUGUAAAACUUUAAUAAAACGU-3' (SEQ ID NO: 2257)
3' -AUUACAUUUUUGAAAUUUUGGCA-5' (SEQ ID NO: 623)

Myc-2194 Target: 5' -AAAUGUAAAACUUUAAUAAAACGT-3' (SEQ ID NO: 949)
5' -AAUGUAAAACUUUAAUAAAACGUU-3' (SEQ ID NO: 2258)
3' -UUUACAUUUUUGAAAUUUUGGCA-5' (SEQ ID NO: 624)

Myc-2195 Target: 5' -AATGTAATAACTTTAATAAAACGT-3' (SEQ ID NO: 950)
5' -AAUGUAAAACUUUAAUAAAACGUU-3' (SEQ ID NO: 2259)
3' -UUUACAUUUUUGAAAUUUUGGCA-5' (SEQ ID NO: 625)

Myc-2196 Target: 5' -AATGTAATAACTTTAATAAAACGT-3' (SEQ ID NO: 951)
5' -UGGAAAUAACUUUAAUAAAACGUU-3' (SEQ ID NO: 2260)
3' -AAUUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 626)

Myc-2197 Target: 5' -ATGTAATAACTTTAATAAAACGT-3' (SEQ ID NO: 952)
5' -UGGAAAUAACUUUAAUAAAACGUU-3' (SEQ ID NO: 2261)
3' -AAUUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 627)

Myc-2198 Target: 5' -TGTAATAACTTTAATAAAACGT-3' (SEQ ID NO: 953)
5' -GUAUUAACUUUAAUAAAACGUU-3' (SEQ ID NO: 2262)
3' -CAUUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 628)

Myc-2199 Target: 5' -GTAATAACTTTAATAAAACGT-3' (SEQ ID NO: 954)
5' -UAAUACUUAUAUAAAACGUUUAUAG-3' (SEQ ID NO: 2263)
3' -UUUUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 629)

Myc-2200 Target: 5' -AAAUCUUAUAUAAAACGUUUAUGC-3' (SEQ ID NO: 955)
3' -UAUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 630)

Myc-2201 Target: 5' -AAAUCUUAUAUAAAACGUUUAUGC-3' (SEQ ID NO: 956)
3' -UUUUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 631)

Myc-2202 Target: 5' -ATAACTTTAATAAAACGT-3' (SEQ ID NO: 957)
5' -AUACUUAUAUAAAACGUUUAUAGC-3' (SEQ ID NO: 2264)
3' -UAUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 632)

Myc-2203 Target: 5' -ATAACTTTAATAAAACGT-3' (SEQ ID NO: 958)
5' -UAACUUAUUAUAAAACGUUUAUAGC-3' (SEQ ID NO: 2265)
3' -UUUGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 633)

Myc-2204 Target: 5' -TAACUUAUUAUAAAACGT-3' (SEQ ID NO: 959)
5' -AAUACUUUAUUAUAAAACGUUUAUAGC-3' (SEQ ID NO: 2266)
3' -AUUGGUAAAUUUGAAAUUUUGGCA-5' (SEQ ID NO: 634)

Myc-2205 Target: 5' -AAACTTTAATAAAACGT-3' (SEQ ID NO: 960)
5' -GCUUUUUAAAGUUUUUUUCCUAAU-3' (SEQ ID NO: 2269)
3' -CGAAAUUUUCACUAAAAAAGAUAAC-5' (SEQ ID NO: 634)

MYC-2313 Target: 5' -GCTTTTTAAAGTTTTTTCTATT-3' (SEQ ID NO: 961)

5' -CUUUUUAAAGUUUUUUUCUAAUG-3' (SEQ ID NO: 2270)
3' -GAAAAUUUUCACUAAAAAAGAUAAC-5' (SEQ ID NO: 635)

MYC-2314 Target: 5' -CTTTTTAAAGTTTTTTCTATTG-3' (SEQ ID NO: 962)

5' -UUUUUAAAGUUUUUUUCCUAAUUGG-3' (SEQ ID NO: 2271)
3' -AAAAUUUUCACUAAAAAAGAUAAC-5' (SEQ ID NO: 636)

MYC-2315 Target: 5' -TTTTAAAGTTTTTTCTATTG-3' (SEQ ID NO: 963)

5' -UUUUUAAAGUUUUUUUCCUAAUUGG-3' (SEQ ID NO: 2272)
3' -AAAUUUUCACUAAAAAAGAUAAC-5' (SEQ ID NO: 637)

MYC-2316 Target: 5' -TTTTAAAGTTTTTTCTATTGTT-3' (SEQ ID NO: 964)

5' -UUUUUAAAGUUUUUUUCCUAAUUGG-3' (SEQ ID NO: 2273)
3' -AAAAUUUUCACUAAAAAAGAUAACAA-5' (SEQ ID NO: 638)

MYC-2317 Target: 5' -TTTTAAAGTTTTTTCTATTGTTT-3' (SEQ ID NO: 965)

5' -UUUUUAAAGUUUUUUUCCUAAUUGG-3' (SEQ ID NO: 2274)
3' -AAAAUUUUCACUAAAAAAGAUAACAAA-5' (SEQ ID NO: 639)

MYC-2318 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 966)

5' -UUUUUAAAGUUUUUUUCCUAAUUGG-3' (SEQ ID NO: 2275)
3' -AAAAUUUUCACUAAAAAAGAUAACAAA-5' (SEQ ID NO: 640)

MYC-2319 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 967)

5' -UUUAAAGUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2276)
3' -UUUCAACUAAAAAAGAUAACAAAA-5' (SEQ ID NO: 641)

MYC-2320 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 968)

5' -UUUAAAGUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2277)
3' -UUUCAACUAAAAAAGAUAACAAAA-5' (SEQ ID NO: 642)

MYC-2321 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 969)

5' -UUUAAAGUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2278)
3' -UUUCAACUAAAAAAGAUAACAAAA-5' (SEQ ID NO: 643)

MYC-2322 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 970)

5' -UUUAAAGUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2279)
3' -UUUCAACUAAAAAAGAUAACAAAA-5' (SEQ ID NO: 644)

MYC-2323 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 971)

5' -UUUAAAGUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2280)
3' -UUUCAACUAAAAAAGAUAACAAAA-5' (SEQ ID NO: 645)

MYC-2324 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 972)

5' -UUUAAAGUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2281)
3' -UUUCAACUAAAAAAGAUAACAAAA-5' (SEQ ID NO: 646)

MYC-2325 Target: 5' -TTTTAAAGTTTTTTCTATTGTTTT-3' (SEQ ID NO: 973)

5' -GAAUUUUUUUCUAAUUGUUUUA-3' (SEQ ID NO: 2282)
3' -CUAAAAAGAUACAAAAACUCCUUU- 5'  (SEQ ID NO: 647)
MYC-2326 Target: 5' -GATTTTTTCTATTGTTTTTAGAAAAA- 3'  (SEQ ID NO: 974)
5' -AUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2283)
3' -UUUUUAGAUAACAAAAACUCUUCUUU- 5'  (SEQ ID NO: 648)
MYC-2327 Target: 5' -ATTTTTTCTATTGTTTTTAGAAAAA- 3'  (SEQ ID NO: 975)
5' -UUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2284)
3' -UUUUUAGAUAACAAAAACUCUUCUUU-  5'  (SEQ ID NO: 649)
MYC-2328 Target: 5' -TTTTTTCTATTGTTTTTAGAAAAAAT- 3'  (SEQ ID NO: 976)
5' -UUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2285)
3' -UUUUUAGAUAACAAAAACUCUUCUUU- 5'  (SEQ ID NO: 650)
MYC-2329 Target: 5' -TTTTTTCTATTGTTTTTAGAAAAAATA- 3'  (SEQ ID NO: 977)
5' -UUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2286)
3' -UUUUUAGAUAACAAAAACUCUUCUUU-  5'  (SEQ ID NO: 651)
MYC-2330 Target: 5' -TTTTTTCTATTGTTTTTAGAAAAATAT- 3'  (SEQ ID NO: 978)
5' -UUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2287)
3' -UUUUUAGAUAACAAAAACUCUUCUUU-  5'  (SEQ ID NO: 652)
MYC-2331 Target: 5' -TTTTTTCTATTGTTTTTAGAAAAATAAAT- 3'  (SEQ ID NO: 979)
5' -UUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2288)
3' -UUUUUAGAUAACAAAAACUCUUCUUU-  5'  (SEQ ID NO: 653)
MYC-2332 Target: 5' -TTTTTTCTATTGTTTTTAGAAAAATAAATA- 3'  (SEQ ID NO: 980)
5' -UUUUUUCUAUGGUGUUUGAGAAAAA-  3'  (SEQ ID NO: 2289)
3' -UUUUUAGAUAACAAAAACUCUUCUUU-  5'  (SEQ ID NO: 654)
MYC-2333 Target: 5' -TTTTTTCTATTGTTTTTAGAAAAATAAATAT- 3'  (SEQ ID NO: 981)

Table 8: DsiRNA Component 19 Nucleotide Target Sequences In MYC mRNA

<table>
<thead>
<tr>
<th>MYC</th>
<th>94 nt Target</th>
<th>1</th>
<th>5' -CGAGAAGGGCAGGGCUC - 3'  (SEQ ID NO: 2290)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYC</td>
<td>94 nt Target</td>
<td>2</td>
<td>5' -UGAGAACGAGGGGCUC - 3'  (SEQ ID NO: 2617)</td>
</tr>
<tr>
<td>MYC</td>
<td>94 nt Target</td>
<td>3</td>
<td>5' -CGGAGAAAGGGGCGUC - 3'  (SEQ ID NO: 2944)</td>
</tr>
<tr>
<td>MYC</td>
<td>178 nt Target</td>
<td>1</td>
<td>5' -GCUCUUUACUACUCGCUU - 3'  (SEQ ID NO: 2291)</td>
</tr>
<tr>
<td>MYC</td>
<td>178 nt Target</td>
<td>2</td>
<td>5' -GGCUCUUAUCUACUCGCUU - 3'  (SEQ ID NO: 2618)</td>
</tr>
<tr>
<td>MYC</td>
<td>178 nt Target</td>
<td>3</td>
<td>5' -GGCUCUUAUCUACUCGCUU - 3'  (SEQ ID NO: 2945)</td>
</tr>
<tr>
<td>MYC</td>
<td>365 nt Target</td>
<td>1</td>
<td>5' -CCCUUGCCGCAUCGACGAG- 3'  (SEQ ID NO: 2922)</td>
</tr>
<tr>
<td>MYC</td>
<td>365 nt Target</td>
<td>2</td>
<td>5' -ACCCCUUGCCGCAUCGACGAG- 3'  (SEQ ID NO: 2619)</td>
</tr>
<tr>
<td>MYC</td>
<td>365 nt Target</td>
<td>3</td>
<td>5' -ACCCCUUGCCGCAUCGACGAG- 3'  (SEQ ID NO: 2946)</td>
</tr>
<tr>
<td>MYC</td>
<td>370 nt Target</td>
<td>1</td>
<td>5' -GCGCAUCCACGGAACUUCUU - 3'  (SEQ ID NO: 2293)</td>
</tr>
<tr>
<td>MYC</td>
<td>370 nt Target</td>
<td>2</td>
<td>5' -UCCGCCAUCGGAACUUCUU - 3'  (SEQ ID NO: 2620)</td>
</tr>
<tr>
<td>MYC</td>
<td>370 nt Target</td>
<td>3</td>
<td>5' -UUGCCGAUCGGAACUUCUU - 3'  (SEQ ID NO: 2947)</td>
</tr>
<tr>
<td>MYC</td>
<td>376 nt Target</td>
<td>1</td>
<td>5' -UCCACGAAACUUCGACGUUCAU - 3'  (SEQ ID NO: 2294)</td>
</tr>
<tr>
<td>MYC</td>
<td>376 nt Target</td>
<td>2</td>
<td>5' -AUCCACGAAACUUCGACGUUCAU - 3'  (SEQ ID NO: 2621)</td>
</tr>
<tr>
<td>MYC</td>
<td>376 nt Target</td>
<td>3</td>
<td>5' -AUCCACGAAACUUCGACGUUCAU - 3'  (SEQ ID NO: 2948)</td>
</tr>
<tr>
<td>MYC</td>
<td>403 nt Target</td>
<td>1</td>
<td>5' -GCGGCGCCUGGUUCGAGA - 3'  (SEQ ID NO: 2295)</td>
</tr>
<tr>
<td>MYC</td>
<td>403 nt Target</td>
<td>2</td>
<td>5' -GCGGCGCCUGGUUCGAGA - 3'  (SEQ ID NO: 2622)</td>
</tr>
<tr>
<td>MYC</td>
<td>403 nt Target</td>
<td>3</td>
<td>5' -GCGGCGCCUGGUUCGAGA - 3'  (SEQ ID NO: 2949)</td>
</tr>
<tr>
<td>MYC</td>
<td>409 nt Target</td>
<td>1</td>
<td>5' -ACUUUGCUGGAUCUACGAGA - 3'  (SEQ ID NO: 2296)</td>
</tr>
<tr>
<td>MYC</td>
<td>409 nt Target</td>
<td>2</td>
<td>5' -ACUUUGCUGGAUCUACGAGA - 3'  (SEQ ID NO: 2623)</td>
</tr>
<tr>
<td>MYC</td>
<td>409 nt Target</td>
<td>3</td>
<td>5' -GACUUUGCUGGAUCUACGAGA - 3'  (SEQ ID NO: 2950)</td>
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</tbody>
</table>
MYC-417 19 nt Target #1: 5' -UCGGAGACUUAACACACCGG-3' *(SEQ ID NO: 2297)
MYC-417 19 nt Target #2: 5' -ACUGGAGACUUAACACACCGG-3' *(SEQ ID NO: 2624)
MYC-417 19 nt Target #3: 5' -GCACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2951)
MYC-535 19 nt Target #1: 5' -UCGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2952)
MYC-535 19 nt Target #2: 5' -UGCACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2625)
MYC-535 19 nt Target #3: 5' -UGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2952)
MYC-541 19 nt Target #1: 5' -UUGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2953)
MYC-541 19 nt Target #2: 5' -UCGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2300)
MYC-548 19 nt Target #1: 5' -UCGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2297)
MYC-548 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2312)
MYC-553 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2301)
MYC-553 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2628)
MYC-553 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2305)
MYC-562 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2632)
MYC-562 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2632)
MYC-562 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2959)
MYC-601 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2306)
MYC-601 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2633)
MYC-601 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2960)
MYC-676 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2307)
MYC-676 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2634)
MYC-676 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2961)
MYC-731 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2308)
MYC-731 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2635)
MYC-731 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2962)
MYC-816 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2309)
MYC-816 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2636)
MYC-816 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2963)
MYC-920 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2310)
MYC-920 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2637)
MYC-920 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2964)
MYC-949 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2311)
MYC-949 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2638)
MYC-949 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2965)
MYC-958 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2312)
MYC-958 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2639)
MYC-958 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2966)
MYC-970 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2313)
MYC-970 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2640)
MYC-970 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2967)
MYC-987 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2314)
MYC-987 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2641)
MYC-987 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2968)
MYC-1104 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2315)
MYC-1104 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2642)
MYC-1104 19 nt Target #3: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2969)
MYC-1111 19 nt Target #1: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2316)
MYC-1111 19 nt Target #2: 5' -GACGACUGGACUUAACACACCGG-3' *(SEQ ID NO: 2643)
MYC-1774 19 nt Target #1: 5'-GUUAUCCUUAAGAACCA-3'  (SEQ ID NO: 2356)
MYC-1774 19 nt Target #2: 5'-AGUUACCCUUAAGAACCC-3'  (SEQ ID NO: 2683)
MYC-1774 19 nt Target #3: 5'-UGAUGCACUUAAAGAACCA-3'  (SEQ ID NO: 3010)
MYC-1779 19 nt Target #1: 5'-CCUUAAAAAGCCACAGCA-3'  (SEQ ID NO: 2364)
MYC-1779 19 nt Target #2: 5'-UCUUAAAAAGCCACAGCA-3'  (SEQ ID NO: 2684)
MYC-1779 19 nt Target #3: 5'-AUCGUUAAAGCCACAGCA-3'  (SEQ ID NO: 3011)
MYC-1784 19 nt Target #1: 5'-AAAAGC CACAGCUAUCACU-3'  (SEQ ID NO: 2358)
MYC-1784 19 nt Target #2: 5'-AAAAGC CACAGCUAUCACU-3'  (SEQ ID NO: 2685)
MYC-1784 19 nt Target #3: 5'-UGAUGCACUUAAAGAACCA-3'  (SEQ ID NO: 3012)
MYC-1789 19 nt Target #1: 5'-GCAACGCUAACAUCAUCG-3'  (SEQ ID NO: 2359)
MYC-1789 19 nt Target #2: 5'-AGCCACGAACAUCAUCG-3'  (SEQ ID NO: 2686)
MYC-1789 19 nt Target #3: 5'-AGCCACGAACAUCAUCG-3'  (SEQ ID NO: 3013)
MYC-1795 19 nt Target #1: 5'-UCUUAAAAAGCCACAGCA-3'  (SEQ ID NO: 2360)
MYC-1795 19 nt Target #2: 5'-AGCUAACAUCCUGUGACG-3'  (SEQ ID NO: 2687)
MYC-1795 19 nt Target #3: 5'-CCGUUGACUCUGUGACG-3'  (SEQ ID NO: 3014)
MYC-1803 19 nt Target #1: 5'-UCCUGUCCUCAACGCA-3'  (SEQ ID NO: 2688)
MYC-1803 19 nt Target #2: 5'-UCUGCUUCGUCCAAAGCAG-3'  (SEQ ID NO: 3015)
MYC-1808 19 nt Target #1: 5'-CCGUUGACUCUGUGACG-3'  (SEQ ID NO: 2362)
MYC-1808 19 nt Target #2: 5'-UCUGCUUCGUCCAAAGCAG-3'  (SEQ ID NO: 2689)
MYC-1808 19 nt Target #3: 5'-UGACAGGAAGGCAAAGGAA-3'  (SEQ ID NO: 3016)
MYC-1816 19 nt Target #1: 5'-CCGAGGCAACAAAGCAG-3'  (SEQ ID NO: 2363)
MYC-1816 19 nt Target #2: 5'-AGGACAGGCAACAAAGCAG-3'  (SEQ ID NO: 2690)
MYC-1816 19 nt Target #3: 5'-AGGCAAAAGCAGCAACAAAGCAG-3'  (SEQ ID NO: 3017)
MYC-1823 19 nt Target #1: 5'-AGCAAAAGCUCUUUUCA-3'  (SEQ ID NO: 2364)
MYC-1823 19 nt Target #2: 5'-GACACAGCAACAAAGCAG-3'  (SEQ ID NO: 2691)
MYC-1823 19 nt Target #3: 5'-GGACAGCAACAAAGCAG-3'  (SEQ ID NO: 3018)
MYC-1828 19 nt Target #1: 5'-AAAAGCUCUUUUCAACAAAGCAG-3'  (SEQ ID NO: 2365)
MYC-1828 19 nt Target #2: 5'-AAAAGCUCUUUUCAACAAAGCAG-3'  (SEQ ID NO: 2692)
MYC-1828 19 nt Target #3: 5'-AAAAGCUCUUUUCAACAAAGCAG-3'  (SEQ ID NO: 3019)
MYC-1834 19 nt Target #1: 5'-UUUUGCUAGGGAAGCACU-3'  (SEQ ID NO: 2366)
MYC-1834 19 nt Target #2: 5'-CAUUCUGAGGGAAGCACU-3'  (SEQ ID NO: 2693)
MYC-1834 19 nt Target #3: 5'-UCUUCUGAGGGAAGCUGU-3'  (SEQ ID NO: 3020)
MYC-1840 19 nt Target #1: 5'-GCAAAAGCUCUUUUCA-3'  (SEQ ID NO: 2367)
MYC-1840 19 nt Target #2: 5'-UGAAGAGCUCUUUUCA-3'  (SEQ ID NO: 2694)
MYC-1840 19 nt Target #3: 5'-UGAAGAGCUCUUUUCA-3'  (SEQ ID NO: 3021)
MYC-1845 19 nt Target #1: 5'-GGACUCUUUUUCCGCAAACGACG-3'  (SEQ ID NO: 2368)
MYC-1845 19 nt Target #2: 5'-GGACUGUUGUUGCCGCAAACGACG-3'  (SEQ ID NO: 2695)
MYC-1845 19 nt Target #3: 5'-GGACUGUUGUUGCCGCAAACGACG-3'  (SEQ ID NO: 3022)
MYC-1850 19 nt Target #1: 5'-UGUGUGCGGAAACGACCAA-3'  (SEQ ID NO: 2369)
MYC-1850 19 nt Target #2: 5'-UGUGUGCGGAAACGACCAA-3'  (SEQ ID NO: 2696)
MYC-1850 19 nt Target #3: 5'-UGUGUGCGGAAACGACCAA-3'  (SEQ ID NO: 3023)
MYC-1855 19 nt Target #1: 5'-CGGAAGGACGACGACGACG-3'  (SEQ ID NO: 2370)
MYC-1855 19 nt Target #2: 5'-CGGAAAGCCAGCGACGACG-3'  (SEQ ID NO: 2697)
MYC-1855 19 nt Target #3: 5'-UGGCGAAAAAGGACGACGACG-3'  (SEQ ID NO: 3024)
MYC-1882 19 nt Target #1: 5'-AAAACUGAAAGCACAAACCAA-3'  (SEQ ID NO: 2371)
MYC-1882 19 nt Target #2: 5'-CAAACUGAAAGCACAAACCAA-3'  (SEQ ID NO: 2698)
MYC-1882 19 nt Target #3: 5'-ACAAACUGAAAGCACAAACCAA-3'  (SEQ ID NO: 3025)
MYC-1888 19 nt Target #1: 5'-GAACAGCUCUGGAAACGACG-3'  (SEQ ID NO: 2372)
MYC-1888 19 nt Target #2: 5'-UGACAGCUCUGGAAACGACG-3'  (SEQ ID NO: 2699)
MYC-1888 19 nt Target #3: 5'-UGACAGCUCUGGAAACGACG-3'  (SEQ ID NO: 3026)
MYC-1893 19 nt Target #1: 5'-GUUGGUGACGCAAAACGACG-3'  (SEQ ID NO: 2373)
MYC-1893 19 nt Target #2: 5'-GUUGGUGACGCAAAACGACG-3'  (SEQ ID NO: 2700)
MYC-1893 19 nt Target #3: 5'-GUUGGUGACGCAAAACGACG-3'  (SEQ ID NO: 3027)
MYC-1900 19 nt Target #1: 5'-AACUUCUGUUGGCAAGGA-3'  (SEQ ID NO: 2374)
MYC-1900 19 nt Target #2: 5'-GAACUCUCUGUUGGCAAGGA-3'  (SEQ ID NO: 2701)
MYC-1900 19 nt Target #3: 5'-GAACUCUCUGUUGGCAAGGA-3'  (SEQ ID NO: 3028)
MYC-1906 19 nt Target #1: 5'-GUUGGUGACGCAAAACGACG-3'  (SEQ ID NO: 2375)
MYC-1906 19 nt Target #2: 5'-UGUGCGGUAAGGAAGAAGGA-3'  (SEQ ID NO: 2702)
MYC-1906 19 nt Target #3: 5'-CUUGUGCGUAAGGAAAAGU- 3' (SEQ ID NO: 3029)
MYC-1911 19 nt Target #1: 5'-GUAAGGAAAAGUAGGAAAAGU- 3' (SEQ ID NO: 2376)
MYC-1911 19 nt Target #2: 5'-CGUAAGGAAAAGUAGGAAAAGU- 3' (SEQ ID NO: 2703)
MYC-1911 19 nt Target #3: 5'-GCUAGGAAAAGUAGGAAAAGU- 3' (SEQ ID NO: 3030)
MYC-1921 19 nt Target #1: 5'-GUAGAAGAAAAGUAGGAAAAGU- 3' (SEQ ID NO: 2377)
MYC-1921 19 nt Target #2: 5'-AGUAGAAGAAAAGUAGGAAAAGU- 3' (SEQ ID NO: 2704)
MYC-1921 19 nt Target #3: 5'-AGUAGAAGAAAAGUAGGAAAAGU- 3' (SEQ ID NO: 3031)
MYC-1926 19 nt Target #1: 5'-GAAAGAAGAUUCCUCAAC- 3' (SEQ ID NO: 2378)
MYC-1926 19 nt Target #2: 5'-GGAAGAAGAUUCCUCAAC- 3' (SEQ ID NO: 2705)
MYC-1926 19 nt Target #3: 5'-AGAAAGAAGAUUCCUCAAC- 3' (SEQ ID NO: 3032)
MYC-1931 19 nt Target #1: 5'-CGAUUCCUUUCACAGAAA- 3' (SEQ ID NO: 2379)
MYC-1931 19 nt Target #2: 5'-ACGAUUCCUUUCACAGAAA- 3' (SEQ ID NO: 2706)
MYC-1931 19 nt Target #3: 5'-AAGGAAGAUUCCUCAACAGAAA- 3' (SEQ ID NO: 3033)
MYC-1937 19 nt Target #1: 5'-CUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2380)
MYC-1937 19 nt Target #2: 5'-CCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2707)
MYC-1937 19 nt Target #3: 5'-CUCCCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3034)
MYC-1944 19 nt Target #1: 5'-CAGAAAAGUCCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2381)
MYC-1944 19 nt Target #2: 5'-ACAGAAAAGUCCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2708)
MYC-1944 19 nt Target #3: 5'-ACAGAAAAGUCCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3035)
MYC-1953 19 nt Target #1: 5'-CCUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2382)
MYC-1953 19 nt Target #2: 5'-UCUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2709)
MYC-1953 19 nt Target #3: 5'-GCUCUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3036)
MYC-1959 19 nt Target #1: 5'-CAACUUCUUCAUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2383)
MYC-1959 19 nt Target #2: 5'-GCAACUUCUUCAUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2710)
MYC-1959 19 nt Target #3: 5'-GCAACUUCUUCAUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3037)
MYC-1965 19 nt Target #1: 5'-CCUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2384)
MYC-1965 19 nt Target #2: 5'-ACUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2711)
MYC-1965 19 nt Target #3: 5'-CCUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3038)
MYC-1970 19 nt Target #1: 5'-GCAACUUCUUCAUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2385)
MYC-1970 19 nt Target #2: 5'-UGAAGAACUUCUUCAUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2712)
MYC-1970 19 nt Target #3: 5'-AUGAAGAACUUCUUCAUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3039)
MYC-1976 19 nt Target #1: 5'-GUUCUCAAAAGUCAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2386)
MYC-1976 19 nt Target #2: 5'-UGUUCUCAAAAGUCAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2713)
MYC-1976 19 nt Target #3: 5'-UGUUCUCAAAAGUCAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3040)
MYC-1981 19 nt Target #1: 5'-AAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2387)
MYC-1981 19 nt Target #2: 5'-GAAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2714)
MYC-1981 19 nt Target #3: 5'-CUCUUCCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3041)
MYC-1989 19 nt Target #1: 5'-GAAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2388)
MYC-1989 19 nt Target #2: 5'-UGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2715)
MYC-1989 19 nt Target #3: 5'-AUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3042)
MYC-1994 19 nt Target #1: 5'-AAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2389)
MYC-1994 19 nt Target #2: 5'-AAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2716)
MYC-1994 19 nt Target #3: 5'-GAAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 3043)
MYC-2001 19 nt Target #1: 5'-CCUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2390)
MYC-2001 19 nt Target #2: 5'-CCUUGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2717)
MYC-2001 19 nt Target #3: 5'-AACCUCUAACUCUCUGACUUCUUC- 3' (SEQ ID NO: 3044)
MYC-2006 19 nt Target #1: 5'-CAACUUCUUCCUGACUUCUUC- 3' (SEQ ID NO: 2391)
MYC-2006 19 nt Target #2: 5'-CAACUUCUUCCUGACUUCUUC- 3' (SEQ ID NO: 2718)
MYC-2006 19 nt Target #3: 5'-CAACUUCUUCCUGACUUCUUC- 3' (SEQ ID NO: 3045)
MYC-2013 19 nt Target #1: 5'-GGCGAGUUCUGAGACUUCUUC- 3' (SEQ ID NO: 2392)
MYC-2013 19 nt Target #2: 5'-GGCGAGUUCUGAGACUUCUUC- 3' (SEQ ID NO: 2719)
MYC-2013 19 nt Target #3: 5'-GGCGAGUUCUGAGACUUCUUC- 3' (SEQ ID NO: 3046)
MYC-2019 19 nt Target #1: 5'-GCUCUGAGACUUCUUC- 3' (SEQ ID NO: 2393)
MYC-2019 19 nt Target #2: 5'-GCUCUGAGACUUCUUC- 3' (SEQ ID NO: 2720)
MYC-2019 19 nt Target #3: 5'-GCUCUGAGACUUCUUC- 3' (SEQ ID NO: 3047)
MYC-2026 19 nt Target #1: 5'-GACUGAAGAUAUUGACGACUUCUUC- 3' (SEQ ID NO: 2394)
MYC-2026 19 nt Target #2: 5'-GACUGAAGAUAUUGACGACUUCUUC- 3' (SEQ ID NO: 2721)
MYC-2026 19 nt Target #3: 5'-GACUGAAGAUAUUGACGACUUCUUC- 3' (SEQ ID NO: 3048)
MYC-2031 19 nt Target #1: 5'-AAAGAAGAACUUCUUCAACAGAAAAGUCC- 3' (SEQ ID NO: 2395)
MYC-2188 19 nt Target #1: 5'-CCAUUAAGUAAUAACU-3' (SEQ ID NO: 2415)
MYC-2188 19 nt Target #2: 5'-GCCAUUAAGUAAUAACU-3' (SEQ ID NO: 2742)
MYC-2188 19 nt Target #3: 5'-UGCACUUAAGUAAUAACU-3' (SEQ ID NO: 3069)
MYC-2207 19 nt Target #1: 5'-UUAADAAAACGUGUAAAGG-3' (SEQ ID NO: 2416)
MYC-2207 19 nt Target #2: 5'-UUUAADAAAACGUGUAAAGG-3' (SEQ ID NO: 2743)
MYC-2207 19 nt Target #3: 5'-UUUAADAAAACGUGUAAAGG-3' (SEQ ID NO: 3070)
MYC-2233 19 nt Target #1: 5'-CAGAAUUUCAUCCUGUA-3' (SEQ ID NO: 2417)
MYC-2233 19 nt Target #2: 5'-ACAGAAUUUCACUCCUGUA-3' (SEQ ID NO: 2744)
MYC-2233 19 nt Target #3: 5'-ACAGAAUUUCACUCCUGUA-3' (SEQ ID NO: 3071)
MYC-2260 19 nt Target #1: 5'-CUAGAAUUUAAGUAAUA-3' (SEQ ID NO: 2418)
MYC-2260 19 nt Target #2: 5'-CCUAAGAAUUAAGUAAUA-3' (SEQ ID NO: 2745)
MYC-2260 19 nt Target #3: 5'-ACCUAAGAAUUAAGUAAUA-3' (SEQ ID NO: 3072)
MYC-2267 19 nt Target #1: 5'-UAUAGGUAACUAUAAACCCU-3' (SEQ ID NO: 2419)
MYC-2267 19 nt Target #2: 5'-UUAUAGGUAACUAUAAACCCU-3' (SEQ ID NO: 2746)
MYC-2267 19 nt Target #3: 5'-UUAUAGGUAACUAUAAACCCU-3' (SEQ ID NO: 3073)
MYC-2274 19 nt Target #1: 5'-ACUAAUAAACCCUAAUUU-3' (SEQ ID NO: 2420)
MYC-2274 19 nt Target #2: 5'-ACUAAUAAACCCUAAUUU-3' (SEQ ID NO: 2747)
MYC-2274 19 nt Target #3: 5'-ACUAAUAAACCCUAAUUU-3' (SEQ ID NO: 3074)
MYC-2282 19 nt Target #1: 5'-CCCUAUUUAUUUAAUAA-3' (SEQ ID NO: 2421)
MYC-2282 19 nt Target #2: 5'-CCCUAUUUAUUUAAUAA-3' (SEQ ID NO: 2748)
MYC-2282 19 nt Target #3: 5'-ACCUAUAAUAAUAAUAAU-3' (SEQ ID NO: 3075)
MYC-2287 19 nt Target #1: 5'-CUUUUUUUAUUUAAUAA-3' (SEQ ID NO: 2422)
MYC-2287 19 nt Target #2: 5'-AAGCUUUAUAUUUAAUAA-3' (SEQ ID NO: 2749)
MYC-2287 19 nt Target #3: 5'-UUAUAAUUAUUUAAUAA-3' (SEQ ID NO: 3076)
MYC-2295 19 nt Target #1: 5'-UUUAAUUGAUCUAUUGCU-3' (SEQ ID NO: 2423)
MYC-2295 19 nt Target #2: 5'-UAUUAUUGAUCUAUUGCU-3' (SEQ ID NO: 2750)
MYC-2295 19 nt Target #3: 5'-UCUUAUUGAUCUAUUGCU-3' (SEQ ID NO: 3077)
MYC-2300 19 nt Target #1: 5'-AAGUAAUUAAGUAAUUA-3' (SEQ ID NO: 2424)
MYC-2300 19 nt Target #2: 5'-UAUUGUAACUUAUUUCU-3' (SEQ ID NO: 2751)
MYC-2300 19 nt Target #3: 5'-UUAUUGUAACUUAUUUCU-3' (SEQ ID NO: 3078)
MYC-2306 19 nt Target #1: 5'-AUAUUGUGCUCUUAAUGG-3' (SEQ ID NO: 2425)
MYC-2306 19 nt Target #2: 5'-CAUUUUGCUUUAAGG-3' (SEQ ID NO: 2752)
MYC-2306 19 nt Target #3: 5'-CAUUUUGCUUUAAGG-3' (SEQ ID NO: 3079)
MYC-2312 19 nt Target #1: 5'-CUUUUAAGUGAUGUUC-3' (SEQ ID NO: 2426)
MYC-2312 19 nt Target #2: 5'-GCUUUUAAGUGAUGUUC-3' (SEQ ID NO: 2753)
MYC-2312 19 nt Target #3: 5'-GCUUUUAAGUGAUGUUC-3' (SEQ ID NO: 3080)
MYC-2334 19 nt Target #1: 5'-UAAUGUUGGUGAAA-3' (SEQ ID NO: 2427)
MYC-2334 19 nt Target #2: 5'-CUAAUGUGGUGAAA-3' (SEQ ID NO: 2754)
MYC-2334 19 nt Target #3: 5'-UCUAAUGUGGUGAAA-3' (SEQ ID NO: 3081)
MYC-2339 19 nt Target #1: 5'-UUUUGUAAAAAAUAA-3' (SEQ ID NO: 2428)
MYC-2339 19 nt Target #2: 5'-GUUUGUAAAAAAUAA-3' (SEQ ID NO: 2755)
MYC-2339 19 nt Target #3: 5'-UGUUUGUAAAAAAUAA-3' (SEQ ID NO: 3082)
MYC-2347 19 nt Target #1: 5'-AAAAAAUAACGGCCCU-3' (SEQ ID NO: 2429)
MYC-2347 19 nt Target #2: 5'-AAAAAAUAACGGCCCU-3' (SEQ ID NO: 2756)
MYC-2347 19 nt Target #3: 5'-AAAAAAUAACGGCCCU-3' (SEQ ID NO: 3083)
MYC-2355 19 nt Target #1: 5'-AAAAACUGGCAAAUUAC-3' (SEQ ID NO: 2430)
MYC-2355 19 nt Target #2: 5'-AAAAACUGGCAAAUUAC-3' (SEQ ID NO: 2757)
MYC-2355 19 nt Target #3: 5'-AAAAACUGGCAAAUUAC-3' (SEQ ID NO: 3084)
MYC-2364 19 nt Target #1: 5'-CAAAAUUACUAGAAGC-3' (SEQ ID NO: 2431)
MYC-2364 19 nt Target #2: 5'-GCAAAAUUACUAGAAGC-3' (SEQ ID NO: 2758)
MYC-2364 19 nt Target #3: 5'-GCAAAAUUACUAGAAGC-3' (SEQ ID NO: 3085)
MYC-2371 19 nt Target #1: 5'-AuCAGGACGCAAAUCUA-3' (SEQ ID NO: 2432)
MYC-2371 19 nt Target #2: 5'-AUCAGGACGCAAAUCUA-3' (SEQ ID NO: 2759)
MYC-2371 19 nt Target #3: 5'-AUCAGGACGCAAAUCUA-3' (SEQ ID NO: 3086)
MYC-2377 19 nt Target #1: 5'-AGCGCAAAUUAAAAGA-3' (SEQ ID NO: 2433)
MYC-2377 19 nt Target #2: 5'-UGACGCAAAUUAAAAGA-3' (SEQ ID NO: 2760)
MYC-2377 19 nt Target #3: 5'-UGACGCAAAUUAAAAGA-3' (SEQ ID NO: 3087)
MYC-188 19 nt Target #1: 5'-ACUCGGCUUGUAACUAC-3' (SEQ ID NO: 2434)
MYC-188 19 nt Target #2: 5'-ACUCGGCUUGUAACUAC-3' (SEQ ID NO: 2761)
MYC- 624 19 nt Target #2: 5'-GGAACUAUGACCUCGACU-3' (SEQ ID NO: 2781)
MYC- 624 19 nt Target #3: 5'-AGGACCUAGCGACCAGCU-3' (SEQ ID NO: 3108)
MYC- 625 19 nt Target #1: 5'-AACCUUAGGACCUCGACUG-3' (SEQ ID NO: 2455)
MYC- 625 19 nt Target #2: 5'-GACCUUAGGACCUCGACUG-3' (SEQ ID NO: 2782)
MYC- 625 19 nt Target #3: 5'-GAAACUAUAGGACCUCGACU-3' (SEQ ID NO: 3109)
MYC- 626 19 nt Target #1: 5'-ACUUGACUCUGCUAUGAGA-3' (SEQ ID NO: 2456)
MYC- 626 19 nt Target #2: 5'-AACAUUGACCUAGCGAGACG-3' (SEQ ID NO: 2783)
MYC- 626 19 nt Target #3: 5'-GACCUUAGGACCUCGACUG-3' (SEQ ID NO: 3110)
MYC- 627 19 nt Target #1: 5'-CUUUGACCUAGCGACUAG-3' (SEQ ID NO: 2457)
MYC- 627 19 nt Target #2: 5'-ACUUGACUCUGCUAUGAGA-3' (SEQ ID NO: 2784)
MYC- 627 19 nt Target #3: 5'-AACAUUGACCUAGCGAGACG-3' (SEQ ID NO: 3111)
MYC- 628 19 nt Target #1: 5'-UUGGACCUAGCGAGACG-3' (SEQ ID NO: 2458)
MYC- 628 19 nt Target #2: 5'-CUUUGACCUAGCGAGACG-3' (SEQ ID NO: 2785)
MYC- 628 19 nt Target #3: 5'-ACUUGACCUAGCGAGACG-3' (SEQ ID NO: 3112)
MYC- 629 19 nt Target #1: 5'-UUGGACCUAGCGAGACG-3' (SEQ ID NO: 2459)
MYC- 629 19 nt Target #2: 5'-CUUUGACCUAGCGAGACG-3' (SEQ ID NO: 2786)
MYC- 629 19 nt Target #3: 5'-ACUUGACCUAGCGAGACG-3' (SEQ ID NO: 3113)
MYC- 733 19 nt Target #1: 5'-GAGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 2460)
MYC- 733 19 nt Target #2: 5'-CGAGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 2787)
MYC- 734 19 nt Target #3: 5'-GCGAGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 3114)
MYC- 734 19 nt Target #1: 5'-AGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 2461)
MYC- 734 19 nt Target #2: 5'-AGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 2788)
MYC- 734 19 nt Target #3: 5'-CGAGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 3115)
MYC- 735 19 nt Target #1: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 2462)
MYC- 735 19 nt Target #2: 5'-AGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 2789)
MYC- 735 19 nt Target #3: 5'-GAGGAAUUCUGGAAAGAAU-3' (SEQ ID NO: 3116)
MYC- 736 19 nt Target #1: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 2463)
MYC- 736 19 nt Target #2: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 2790)
MYC- 736 19 nt Target #3: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 3117)
MYC- 737 19 nt Target #1: 5'-UAUUCUGGAAAGAAU-3' (SEQ ID NO: 2464)
MYC- 737 19 nt Target #2: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 2791)
MYC- 737 19 nt Target #3: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 3118)
MYC- 738 19 nt Target #1: 5'-UAUUCUGGAAAGAAU-3' (SEQ ID NO: 2465)
MYC- 738 19 nt Target #2: 5'-UAUUCUGGAAAGAAU-3' (SEQ ID NO: 2792)
MYC- 738 19 nt Target #3: 5'-GAUUCUGGAAAGAAU-3' (SEQ ID NO: 3119)
MYC- 739 19 nt Target #1: 5'-UAUUCUGGAAAGAAU-3' (SEQ ID NO: 2466)
MYC- 739 19 nt Target #2: 5'-UAUUCUGGAAAGAAU-3' (SEQ ID NO: 2793)
MYC- 739 19 nt Target #3: 5'-UAUUCUGGAAAGAAU-3' (SEQ ID NO: 3120)
MYC- 740 19 nt Target #1: 5'-UCUGGAAAGAAU-3' (SEQ ID NO: 2467)
MYC- 740 19 nt Target #2: 5'-UCUGGAAAGAAU-3' (SEQ ID NO: 2794)
MYC- 740 19 nt Target #3: 5'-UCUGGAAAGAAU-3' (SEQ ID NO: 3121)
MYC- 741 19 nt Target #1: 5'-UCUGGAAAGAAU-3' (SEQ ID NO: 2468)
MYC- 741 19 nt Target #2: 5'-UCUGGAAAGAAU-3' (SEQ ID NO: 2795)
MYC- 741 19 nt Target #3: 5'-UCUGGAAAGAAU-3' (SEQ ID NO: 3122)
MYC- 742 19 nt Target #1: 5'-UGGAAAGAAU-3' (SEQ ID NO: 2469)
MYC- 742 19 nt Target #2: 5'-UGGAAAGAAU-3' (SEQ ID NO: 2796)
MYC- 742 19 nt Target #3: 5'-UGGAAAGAAU-3' (SEQ ID NO: 3123)
MYC- 743 19 nt Target #1: 5'-UUGGAAAGAAU-3' (SEQ ID NO: 2470)
MYC- 743 19 nt Target #2: 5'-UUGGAAAGAAU-3' (SEQ ID NO: 2797)
MYC- 743 19 nt Target #3: 5'-UUGGAAAGAAU-3' (SEQ ID NO: 3124)
MYC- 784 19 nt Target #1: 5'-AGCAGCCGAGCCGCAGACG-3' (SEQ ID NO: 2471)
MYC- 784 19 nt Target #2: 5'-AGCAGCCGAGCCGCAGACG-3' (SEQ ID NO: 2798)
MYC- 784 19 nt Target #3: 5'-AGCAGCCGAGCCGCAGACG-3' (SEQ ID NO: 3125)
MYC- 785 19 nt Target #1: 5'-GCGCCGCGCCGCAGACG-3' (SEQ ID NO: 2472)
MYC- 785 19 nt Target #2: 5'-GCGCCGCGCCGCAGACG-3' (SEQ ID NO: 2799)
MYC- 785 19 nt Target #3: 5'-GCGCCGCGCCGCAGACG-3' (SEQ ID NO: 3126)
MYC- 786 19 nt Target #1: 5'-CGCCGCGCCGCAGACG-3' (SEQ ID NO: 2473)
MYC- 786 19 nt Target #2: 5'-CGCCGCGCCGCAGACG-3' (SEQ ID NO: 2800)
MYC- 786 19 nt Target #3: 5'-CGCCGCGCCGCAGACG-3' (SEQ ID NO: 3127)
MYC- 787 19 nt Target #1: 5' -CGCCGCUCCGGGCUCUGCU-3' (SEQ ID NO 2474)
MYC- 787 19 nt Target #2: 5' -CCGCAGCUCGCAGCGCUCCG-3' (SEQ ID NO 2801)
MYC- 787 19 nt Target #3: 5' -GCCGCAGCUCGCAGCGCUCCG-3' (SEQ ID NO 3128)
MYC- 788 19 nt Target #1: 5' -GCCGCUCGCAGCGCUCCG-3' (SEQ ID NO 2475)
MYC- 788 19 nt Target #2: 5' -GCCGCUGCGCGCUCCG-3' (SEQ ID NO 2802)
MYC- 788 19 nt Target #3: 5' -GCCGCUGCGCGCUCCG-3' (SEQ ID NO 3129)
MYC- 913 19 nt Target #1: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2476)
MYC- 913 19 nt Target #2: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2803)
MYC- 913 19 nt Target #3: 5' -UGGGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 3130)
MYC- 914 19 nt Target #1: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2477)
MYC- 914 19 nt Target #2: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2804)
MYC- 914 19 nt Target #3: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 3131)
MYC- 915 19 nt Target #1: 5' -AGGGAGCAUGUGGAAAC-3' (SEQ ID NO 2478)
MYC- 915 19 nt Target #2: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2805)
MYC- 915 19 nt Target #3: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 3132)
MYC- 916 19 nt Target #1: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2479)
MYC- 916 19 nt Target #2: 5' -AGGGAGCAUGUGGAAAC-3' (SEQ ID NO 2806)
MYC- 916 19 nt Target #3: 5' -GGAGGAGCAUGUGGAAAC-3' (SEQ ID NO 3133)
MYC- 917 19 nt Target #1: 5' -GGGAGCAAUGUGGAAAC-3' (SEQ ID NO 2480)
MYC- 917 19 nt Target #2: 5' -GGGAGCAAUGUGGAAAC-3' (SEQ ID NO 2807)
MYC- 917 19 nt Target #3: 5' -GGGAGCAAUGUGGAAAC-3' (SEQ ID NO 3134)
MYC- 952 19 nt Target #1: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2481)
MYC- 952 19 nt Target #2: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2808)
MYC- 952 19 nt Target #3: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 3135)
MYC- 953 19 nt Target #1: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2482)
MYC- 953 19 nt Target #2: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 2809)
MYC- 953 19 nt Target #3: 5' -GAGGAGCAUGUGGAAAC-3' (SEQ ID NO 3136)
MYC- 973 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2483)
MYC- 973 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2810)
MYC- 973 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3137)
MYC- 974 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2484)
MYC- 974 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2811)
MYC- 974 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3138)
MYC- 975 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2485)
MYC- 975 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2812)
MYC- 975 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3139)
MYC- 976 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2486)
MYC- 976 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2813)
MYC- 976 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3140)
MYC- 977 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2487)
MYC- 977 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2814)
MYC- 977 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3141)
MYC- 978 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2488)
MYC- 978 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2815)
MYC- 978 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3142)
MYC- 979 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2489)
MYC- 979 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2816)
MYC- 979 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3143)
MYC- 980 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2490)
MYC- 980 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2817)
MYC- 980 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3144)
MYC- 981 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2491)
MYC- 981 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2818)
MYC- 981 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3145)
MYC- 982 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2492)
MYC- 982 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2819)
MYC- 982 19 nt Target #3: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 3146)
MYC- 983 19 nt Target #1: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2493)
MYC- 983 19 nt Target #2: 5' -AACAUCAUCAGCAUGUCA-3' (SEQ ID NO 2820)
| MYC-983 | 19 nt Target #3: 5'-CAUCCAGGACUGUAUGUGG-3' | (SEQ ID NO: 3147) |
| MYC-984 | 19 nt Target #1: 5'-CCAGGACUGUAUGUGGACG-3' | (SEQ ID NO: 2494) |
| MYC-984 | 19 nt Target #2: 5'-CCUACCAGGACUGUAUGUGGAG-3' | (SEQ ID NO: 2821) |
| MYC-984 | 19 nt Target #3: 5'-AUCCAGGACUGUAUGUGGAG-3' | (SEQ ID NO: 3148) |
| MYC-985 | 19 nt Target #1: 5'-GAGGACUGUAUGUGGACG-3' | (SEQ ID NO: 2495) |
| MYC-985 | 19 nt Target #2: 5'-GCAGGACUGUAUGUGGACG-3' | (SEQ ID NO: 2822) |
| MYC-985 | 19 nt Target #3: 5'-UCAGGACUGUAUGUGGACG-3' | (SEQ ID NO: 3149) |
| MYC-986 | 19 nt Target #1: 5'-AGGACUGUAUGUGGACGCG-3' | (SEQ ID NO: 2496) |
| MYC-986 | 19 nt Target #2: 5'-GAGGACUGUAUGUGGACGCG-3' | (SEQ ID NO: 2823) |
| MYC-986 | 19 nt Target #3: 5'-CCUACCAGGACUGUAUGUGGACG-3' | (SEQ ID NO: 3150) |
| MYC-1033 | 19 nt Target #1: 5'-GAGAAGCCUGCCUCUACCAG-3' | (SEQ ID NO: 2497) |
| MYC-1033 | 19 nt Target #2: 5'-AGAAGCGGGCCUCUACCAG-3' | (SEQ ID NO: 2824) |
| MYC-1033 | 19 nt Target #3: 5'-AGAAGCGGACCGCUCCUACCAG-3' | (SEQ ID NO: 3151) |
| MYC-1034 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2825) |
| MYC-1034 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3152) |
| MYC-1035 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2499) |
| MYC-1035 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2826) |
| MYC-1035 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3153) |
| MYC-1036 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2827) |
| MYC-1036 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3154) |
| MYC-1036 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2828) |
| MYC-1037 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2829) |
| MYC-1037 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3155) |
| MYC-1038 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2830) |
| MYC-1038 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3156) |
| MYC-1039 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2831) |
| MYC-1039 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3157) |
| MYC-1040 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2832) |
| MYC-1040 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3158) |
| MYC-1040 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2833) |
| MYC-1041 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2834) |
| MYC-1041 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3159) |
| MYC-1041 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2835) |
| MYC-1042 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2836) |
| MYC-1042 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3160) |
| MYC-1043 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2837) |
| MYC-1043 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2838) |
| MYC-1043 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 3161) |
| MYC-1044 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2839) |
| MYC-1044 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2840) |
| MYC-1044 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2841) |
| MYC-1045 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2842) |
| MYC-1045 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2843) |
| MYC-1045 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2844) |
| MYC-1046 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2845) |
| MYC-1046 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2846) |
| MYC-1046 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2847) |
| MYC-1047 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2848) |
| MYC-1047 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2849) |
| MYC-1047 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2850) |
| MYC-1048 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2851) |
| MYC-1048 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2852) |
| MYC-1048 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2853) |
| MYC-1049 | 19 nt Target #1: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2854) |
| MYC-1049 | 19 nt Target #2: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2855) |
| MYC-1049 | 19 nt Target #3: 5'-AGGACUGGCUCUACCAGCGG-3' | (SEQ ID NO: 2856) |
MYC-1049 19 nt Target #2: 5'-UACCAGGCUGCGCGCAAGAC-3' (SEQ ID NO: 2840)
MYC-1049 19 nt Target #3: 5'-CUACAGGCUGCGCGGCAAGAC-3' (SEQ ID NO: 3167)
MYC-1050 19 nt Target #1: 5'-ACCAGGCUGCGCGCAAAGAC-3' (SEQ ID NO: 2514)
MYC-1050 19 nt Target #2: 5'-ACCAGGCUGCGCGCAAAGAC-3' (SEQ ID NO: 2841)
MYC-1050 19 nt Target #3: 5'-UACCAGGCUGCGCGCAAGAC-3' (SEQ ID NO: 3168)
MYC-1051 19 nt Target #1: 5'-ACCAGGCUGCGCGCAAAGAC-3' (SEQ ID NO: 2515)
MYC-1051 19 nt Target #2: 5'-ACCAGGCUGCGCGCAAAGAC-3' (SEQ ID NO: 2842)
MYC-1051 19 nt Target #3: 5'-ACCAGGCUGCGCGCAAAGAC-3' (SEQ ID NO: 3169)
MYC-1052 19 nt Target #1: 5'-AGGCCUGCGCCGAAGAC-3' (SEQ ID NO: 2516)
MYC-1052 19 nt Target #2: 5'-AGGCCUGCGCCGAAGAC-3' (SEQ ID NO: 2843)
MYC-1052 19 nt Target #3: 5'-ACCAGGCUGCGCGCAAAGAC-3' (SEQ ID NO: 3170)
MYC-1053 19 nt Target #1: 5'-GCCUCGCGCCGAAGAC-3' (SEQ ID NO: 2517)
MYC-1053 19 nt Target #2: 5'-GCCUCGCGCCGAAGAC-3' (SEQ ID NO: 2844)
MYC-1053 19 nt Target #3: 5'-GCCUCGCGCCGAAGAC-3' (SEQ ID NO: 3171)
MYC-1096 19 nt Target #1: 5'-CACAGGCUGCUCCUCCACCU-3' (SEQ ID NO: 2518)
MYC-1096 19 nt Target #2: 5'-CCCAGGCUGCUCCUCCACC-3' (SEQ ID NO: 2845)
MYC-1096 19 nt Target #3: 5'-GCCAGGCUGCUCCUCCACC-3' (SEQ ID NO: 3172)
MYC-1097 19 nt Target #1: 5'-ACAGGCUGCUCCUCCACC-3' (SEQ ID NO: 2519)
MYC-1097 19 nt Target #2: 5'-ACAGGCUGCUCCUCCACC-3' (SEQ ID NO: 2846)
MYC-1097 19 nt Target #3: 5'-ACCAGGCUGCUCCUCCACC-3' (SEQ ID NO: 3173)
MYC-1098 19 nt Target #1: 5'-ACAGGCUGCUCCUCCACC-3' (SEQ ID NO: 2520)
MYC-1098 19 nt Target #2: 5'-ACAGGCUGCUCCUCCACC-3' (SEQ ID NO: 2847)
MYC-1098 19 nt Target #3: 5'-ACAGGCUGCUCCUCCACC-3' (SEQ ID NO: 3174)
MYC-1099 19 nt Target #1: 5'-AGGGCUCCUCCUCCUCCAC-3' (SEQ ID NO: 2521)
MYC-1099 19 nt Target #2: 5'-AGGGCUCCUCCUCCUCCAC-3' (SEQ ID NO: 2848)
MYC-1099 19 nt Target #3: 5'-ACAGGCUGCUCCUCCACCU-3' (SEQ ID NO: 3175)
MYC-1100 19 nt Target #1: 5'-GCCUCGUCCUCCUCCACCU-3' (SEQ ID NO: 2522)
MYC-1100 19 nt Target #2: 5'-GCCUCGUCCUCCUCCACCU-3' (SEQ ID NO: 2849)
MYC-1100 19 nt Target #3: 5'-GCCUCGUCCUCCUCCACCU-3' (SEQ ID NO: 3176)
MYC-1101 19 nt Target #1: 5'-CGUCCUCUCCUCCUCCAC-3' (SEQ ID NO: 2523)
MYC-1101 19 nt Target #2: 5'-GCCUCGUCCUCCUCCACCU-3' (SEQ ID NO: 2850)
MYC-1101 19 nt Target #3: 5'-GCCUCGUCCUCCUCCACCU-3' (SEQ ID NO: 3177)
MYC-1189 19 nt Target #1: 5'-CUCACGACACGAGCCGC-3' (SEQ ID NO: 2524)
MYC-1189 19 nt Target #2: 5'-CUCAACGACACGAGCCGC-3' (SEQ ID NO: 2851)
MYC-1189 19 nt Target #3: 5'-CUCACGACACGAGCCGC-3' (SEQ ID NO: 3178)
MYC-1190 19 nt Target #1: 5'-UCAACGACACGAGCCGC-3' (SEQ ID NO: 2525)
MYC-1190 19 nt Target #2: 5'-UCAACGACACGAGCCGC-3' (SEQ ID NO: 2852)
MYC-1190 19 nt Target #3: 5'-UCAACGACACGAGCCGC-3' (SEQ ID NO: 3179)
MYC-1191 19 nt Target #1: 5'-CAACGACACGAGCCGC-3' (SEQ ID NO: 2526)
MYC-1191 19 nt Target #2: 5'-UCAACGACACGAGCCGC-3' (SEQ ID NO: 2853)
MYC-1191 19 nt Target #3: 5'-UCAACGACACGAGCCGC-3' (SEQ ID NO: 3180)
MYC-1192 19 nt Target #1: 5'-AACGAACGACACGAGCCGC-3' (SEQ ID NO: 2527)
MYC-1192 19 nt Target #2: 5'-AACGAACGACACGAGCCGC-3' (SEQ ID NO: 2854)
MYC-1192 19 nt Target #3: 5'-UCAACGAGACGAGCCGCC-3' (SEQ ID NO: 3181)
MYC-1193 19 nt Target #1: 5'-AGCAACGACGACGAGCCGCC-3' (SEQ ID NO: 2528)
MYC-1193 19 nt Target #2: 5'-AACGAACGACGAGCCGCC-3' (SEQ ID NO: 2855)
MYC-1193 19 nt Target #3: 5'-AACGAACGACGAGCCGCC-3' (SEQ ID NO: 3180)
MYC-1315 19 nt Target #1: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2529)
MYC-1315 19 nt Target #2: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2856)
MYC-1315 19 nt Target #3: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 3183)
MYC-1316 19 nt Target #1: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2530)
MYC-1316 19 nt Target #2: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2857)
MYC-1316 19 nt Target #3: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 3184)
MYC-1317 19 nt Target #1: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2531)
MYC-1317 19 nt Target #2: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2858)
MYC-1317 19 nt Target #3: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 3185)
MYC-1318 19 nt Target #1: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2532)
MYC-1318 19 nt Target #2: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 2859)
MYC-1318 19 nt Target #3: 5'-CAUGAGGACACGAACGCC-3' (SEQ ID NO: 3186)
MYC-1715 19 nt Target #2: 5'-UUUUUGCCCUGCGUGACC- 3' (SEQ ID NO: 2899)
MYC-1715 19 nt Target #3: 5'-CUUUUGCCCUGCGUGACC- 3' (SEQ ID NO: 3226)
MYC-1716 19 nt Target #1: 5'-UUUUUGCCCUGCGUGACC- 3' (SEQ ID NO: 2573)
MYC-1716 19 nt Target #2: 5'-UUUUUGCUGCGUGACCA- 3' (SEQ ID NO: 2900)
MYC-1716 19 nt Target #3: 5'-UUUUUGCUGCGUGACCA- 3' (SEQ ID NO: 2327)
MYC-1717 19 nt Target #1: 5'-UUUUUGCCCUGCGUGACCA- 3' (SEQ ID NO: 2574)
MYC-1717 19 nt Target #2: 5'-UUUUUGCUGCGUGACCA- 3' (SEQ ID NO: 2901)
MYC-1717 19 nt Target #3: 5'-UUUUUGCUGCGUGACCA- 3' (SEQ ID NO: 3228)
MYC-1718 19 nt Target #1: 5'-UGGCCCUGCGUGACCA- 3' (SEQ ID NO: 2575)
MYC-1718 19 nt Target #2: 5'-UGGCCCUGCGUGACCA- 3' (SEQ ID NO: 2902)
MYC-1718 19 nt Target #3: 5'-UUUGCCUGCGUGACCA- 3' (SEQ ID NO: 3229)
MYC-1719 19 nt Target #1: 5'-UGGCCCUGCGUGACCA- 3' (SEQ ID NO: 2576)
MYC-1719 19 nt Target #2: 5'-UGGCCCUGCGUGACCA- 3' (SEQ ID NO: 2903)
MYC-1719 19 nt Target #3: 5'-UGGCCCUGCGUGACCA- 3' (SEQ ID NO: 3230)
MYC-1720 19 nt Target #1: 5'-GCCUCUGCGAGCACCA- 3' (SEQ ID NO: 2577)
MYC-1720 19 nt Target #2: 5'-GCCUCUGCGAGCACCA- 3' (SEQ ID NO: 2904)
MYC-1720 19 nt Target #3: 5'-GCCUCUGCGAGCACCA- 3' (SEQ ID NO: 3231)
MYC-1721 19 nt Target #1: 5'-CCUCUGCGAGCACCA- 3' (SEQ ID NO: 2578)
MYC-1721 19 nt Target #2: 5'-CCUCUGCGAGCACCA- 3' (SEQ ID NO: 2905)
MYC-1721 19 nt Target #3: 5'-CCUCUGCGAGCACCA- 3' (SEQ ID NO: 3232)
MYC-1856 19 nt Target #1: 5'-CGGAAACGACGAGAACAGUU- 3' (SEQ ID NO: 2579)
MYC-1856 19 nt Target #2: 5'-CGGAAACGACGAGAACAGUU- 3' (SEQ ID NO: 2906)
MYC-1856 19 nt Target #3: 5'-CGGAAACGACGAGAACAGUU- 3' (SEQ ID NO: 3233)
MYC-1857 19 nt Target #1: 5'-GAAACGACGAGAACAGUU- 3' (SEQ ID NO: 2580)
MYC-1857 19 nt Target #2: 5'-GAAACGACGAGAACAGUU- 3' (SEQ ID NO: 2907)
MYC-1857 19 nt Target #3: 5'-GAAACGACGAGAACAGUU- 3' (SEQ ID NO: 3234)
MYC-2115 19 nt Target #1: 5'-UUUACGAAUUGAUUGAAU- 3' (SEQ ID NO: 2581)
MYC-2115 19 nt Target #2: 5'-UUUACGAAUUGAUUGAAU- 3' (SEQ ID NO: 2908)
MYC-2115 19 nt Target #3: 5'-UUUACGAAUUGAUUGAAU- 3' (SEQ ID NO: 3235)
MYC-2116 19 nt Target #1: 5'-UAACGAAUUGAUUGAAU- 3' (SEQ ID NO: 2582)
MYC-2116 19 nt Target #2: 5'-UAACGAAUUGAUUGAAU- 3' (SEQ ID NO: 2909)
MYC-2116 19 nt Target #3: 5'-CUUUAACAGAAUUGAUUGAU- 3' (SEQ ID NO: 3236)
MYC-2193 19 nt Target #1: 5'-AAAUGUAUAACUUAUAUA- 3' (SEQ ID NO: 2583)
MYC-2193 19 nt Target #2: 5'-AAAUGUAUAACUUAUAUA- 3' (SEQ ID NO: 2910)
MYC-2193 19 nt Target #3: 5'-AAAUGUAUAACUUAUAUA- 3' (SEQ ID NO: 3237)
MYC-2194 19 nt Target #1: 5'-AAAUGUAUAACUUAUAUA- 3' (SEQ ID NO: 2584)
MYC-2194 19 nt Target #2: 5'-AAAUGUAUAACUUAUAUA- 3' (SEQ ID NO: 2911)
MYC-2194 19 nt Target #3: 5'-AAAUGUAUAACUUAUAUA- 3' (SEQ ID NO: 3238)
MYC-2195 19 nt Target #1: 5'-AUGUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2585)
MYC-2195 19 nt Target #2: 5'-AUGUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2912)
MYC-2195 19 nt Target #3: 5'-AAAUGUAUAACUUAUAUAUA- 3' (SEQ ID NO: 3239)
MYC-2196 19 nt Target #1: 5'-UGUAUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2586)
MYC-2196 19 nt Target #2: 5'-UGUAUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2913)
MYC-2196 19 nt Target #3: 5'-UGUAUAUAACUUAUAUAUA- 3' (SEQ ID NO: 3240)
MYC-2197 19 nt Target #1: 5'-GAUAUAACUUAUAUAUAUA- 3' (SEQ ID NO: 2587)
MYC-2197 19 nt Target #2: 5'-GAUAUAACUUAUAUAUAUA- 3' (SEQ ID NO: 2914)
MYC-2197 19 nt Target #3: 5'-GAUAUAACUUAUAUAUAUA- 3' (SEQ ID NO: 3241)
MYC-2198 19 nt Target #1: 5'-GAUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2588)
MYC-2198 19 nt Target #2: 5'-GAUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2915)
MYC-2198 19 nt Target #3: 5'-GAUAUAACUUAUAUAUA- 3' (SEQ ID NO: 3242)
MYC-2199 19 nt Target #1: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2589)
MYC-2199 19 nt Target #2: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2916)
MYC-2199 19 nt Target #3: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 3243)
MYC-2200 19 nt Target #1: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2590)
MYC-2200 19 nt Target #2: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2917)
MYC-2200 19 nt Target #3: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 3244)
MYC-2201 19 nt Target #1: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2591)
MYC-2201 19 nt Target #2: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 2918)
MYC-2201 19 nt Target #3: 5'-AUAACUAUAACUUAUAUAUA- 3' (SEQ ID NO: 3245)
| MYC-2202 | 19 nt | Target #1 | 5' -UAACUUUAUAACGCUUU- 3' (SEQ ID NO: 2592) |
| MYC-2202 | 19 nt | Target #2 | 5' -ACUCUUUAUAACGCUUU- 3' (SEQ ID NO: 2593) |
| MYC-2202 | 19 nt | Target #3 | 5' -AUACUUUAUAACGCUUU- 3' (SEQ ID NO: 2920) |
| MYC-2203 | 19 nt | Target #1 | 5' -ACUUUAUAACGCUUU- 3' (SEQ ID NO: 3247) |
| MYC-2204 | 19 nt | Target #1 | 5' -ACUUUAUAACGCUUU- 3' (SEQ ID NO: 2954) |
| MYC-2204 | 19 nt | Target #2 | 5' -ACUUUAUAACGCUUU- 3' (SEQ ID NO: 2921) |
| MYC-2204 | 19 nt | Target #3 | 5' -ACUUUAUAACGCUUU- 3' (SEQ ID NO: 3248) |
| MYC-2205 | 19 nt | Target #1 | 5' -CUUUAUAACGCUUU- 3' (SEQ ID NO: 2595) |
| MYC-2205 | 19 nt | Target #2 | 5' -ACUUUAUAACGCUUU- 3' (SEQ ID NO: 2922) |
| MYC-2205 | 19 nt | Target #3 | 5' -ACUUUAUAACGCUUU- 3' (SEQ ID NO: 3249) |
| MYC-2313 | 19 nt | Target #1 | 5' -UUUUAAGCUUUUU- 3' (SEQ ID NO: 2596) |
| MYC-2313 | 19 nt | Target #2 | 5' -CUUUAAGCUUUUU- 3' (SEQ ID NO: 2923) |
| MYC-2313 | 19 nt | Target #3 | 5' -GCUUUAAGCUUUU- 3' (SEQ ID NO: 3250) |
| MYC-2314 | 19 nt | Target #1 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2597) |
| MYC-2314 | 19 nt | Target #2 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2924) |
| MYC-2314 | 19 nt | Target #3 | 5' -CUUUAAGCUUUU- 3' (SEQ ID NO: 3251) |
| MYC-2315 | 19 nt | Target #1 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2598) |
| MYC-2315 | 19 nt | Target #2 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2925) |
| MYC-2315 | 19 nt | Target #3 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 3252) |
| MYC-2316 | 19 nt | Target #1 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2599) |
| MYC-2316 | 19 nt | Target #2 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2926) |
| MYC-2316 | 19 nt | Target #3 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 3253) |
| MYC-2317 | 19 nt | Target #1 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2600) |
| MYC-2317 | 19 nt | Target #2 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 2927) |
| MYC-2317 | 19 nt | Target #3 | 5' -UUUAAGCUUUU- 3' (SEQ ID NO: 3254) |
| MYC-2318 | 19 nt | Target #1 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2601) |
| MYC-2318 | 19 nt | Target #2 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2928) |
| MYC-2318 | 19 nt | Target #3 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 3255) |
| MYC-2319 | 19 nt | Target #1 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2602) |
| MYC-2319 | 19 nt | Target #2 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2929) |
| MYC-2319 | 19 nt | Target #3 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 3256) |
| MYC-2320 | 19 nt | Target #1 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2603) |
| MYC-2320 | 19 nt | Target #2 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2930) |
| MYC-2320 | 19 nt | Target #3 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 3257) |
| MYC-2321 | 19 nt | Target #1 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2604) |
| MYC-2321 | 19 nt | Target #2 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 2931) |
| MYC-2321 | 19 nt | Target #3 | 5' -AAAGCUUUU- 3' (SEQ ID NO: 3258) |
| MYC-2322 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2605) |
| MYC-2322 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2932) |
| MYC-2322 | 19 nt | Target #3 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 3259) |
| MYC-2323 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2606) |
| MYC-2323 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2933) |
| MYC-2323 | 19 nt | Target #3 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 3260) |
| MYC-2324 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2607) |
| MYC-2324 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2934) |
| MYC-2324 | 19 nt | Target #3 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 3261) |
| MYC-2325 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2608) |
| MYC-2325 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2935) |
| MYC-2325 | 19 nt | Target #3 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 3262) |
| MYC-2326 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2609) |
| MYC-2326 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2936) |
| MYC-2326 | 19 nt | Target #3 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 3263) |
| MYC-2327 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2610) |
| MYC-2327 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2937) |
| MYC-2327 | 19 nt | Target #3 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 3264) |
| MYC-2328 | 19 nt | Target #1 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2611) |
| MYC-2328 | 19 nt | Target #2 | 5' -UAAGCUUUU- 3' (SEQ ID NO: 2938) |
Within Tables 2-4 and 6-7 above, underlined residues indicate 2'-0-methyl residues, UPPER CASE indicates ribonucleotides, and lower case denotes deoxyribonucleotides. The DsiRNA agents of Tables 2-4 above are 25/27mer agents possessing a blunt end. The structures and/or modification patterning of the agents of Tables 2-4 above can be readily adapted to the above generic sequence structures, e.g., the 3' overhang of the second strand can be extended or contracted, 2'-0-methylation of the second strand can be expanded towards the 5' end of the second strand, optionally at alternating sites, etc. Such further modifications are optional, as 25/27mer DsiRNAs with such modifications can also be readily designed from the above DsiRNA agents and are also expected to be functional inhibitors of MYC expression. Similarly, the 27mer "blunt/fray" and "blunt/blunt" DsiRNA structures and/or modification patterns of the agents of of Tables 6-7 above can also be readily adapted to the above generic sequence structures, e.g., for application of modification patterning of the antisense strand to such structures and/or adaptation of such sequences to the above generic structures.

In certain embodiments, 27mer DsiRNAs possessing independent strand lengths each of 27 nucleotides are designed and synthesized for targeting of the same sites within the MYC transcript as the asymmetric "25/27" structures shown in Tables 2-4 herein. Exemplary "27/27" DsiRNAs are optionally designed with a "blunt/fray" structure as shown for the DsiRNAs of Table 6 above, or with a "blunt/blunt" structure as shown for the DsiRNAs of Table 7 above.

In certain embodiments, the dsRNA agents of the invention require, e.g., at least 19, at least 20, at least 21, at least 22, at least 23, at least 24, at least 25 or at least 26 residues of the
first strand to be complementary to corresponding residues of the second strand. In certain related embodiments, these first strand residues complementary to corresponding residues of the second strand are optionally consecutive residues.

By definition, "sufficiently complementary" (contrasted with, e.g., "100% complementary") allows for one or more mismatches to exist between a dsRNA of the invention and the target RNA or cDNA sequence (e.g., MYC mRNA), provided that the dsRNA possesses complementarity sufficient to trigger the destruction of the target RNA by the RNAi machinery (e.g., the RISC complex) or process. In certain embodiments, a "sufficiently complementary" dsRNA of the invention can harbor one, two, three or even four or more mismatches between the dsRNA sequence and the target RNA or cDNA sequence (e.g., in certain such embodiments, the antisense strand of the dsRNA harbors one, two, three, four, five or even six or more mismatches when aligned with the target RNA or cDNA sequence). Additional consideration of the preferred location of such mismatches within certain dsRNAs of the instant invention is considered in greater detail below.

As used herein "DsiRNAmm" refers to a DisRNA having a "mismatch tolerant region" containing one, two, three or four mismatched base pairs of the duplex formed by the sense and antisense strands of the DsiRNA, where such mismatches are positioned within the DsiRNA at a location(s) lying between (and thus not including) the two terminal base pairs of either end of the DsiRNA. The mismatched base pairs are located within a "mismatch-tolerant region" which is defined herein with respect to the location of the projected Ago2 cut site of the corresponding target nucleic acid. The mismatch tolerant region is located "upstream of the projected Ago2 cut site of the target strand. "Upstream" in this context will be understood as the 5'-most portion of the DsiRNAmm duplex, where 5' refers to the orientation of the sense strand of the DsiRNA duplex. Therefore, the mismatch tolerant region is upstream of the base on the sense (passenger) strand that corresponds to the projected Ago2 cut site of the target nucleic acid (see Figure 1); alternatively, when referring to the antisense (guide) strand of the DsiRNAmm, the mismatch tolerant region can also be described as positioned downstream of the base that is complementary to the projected Ago2 cut site of the target nucleic acid, that is, the 3'-most portion of the antisense strand of the DsiRNAmm (where position 1 of the antisense strand is the 5' terminal nucleotide of the antisense strand, see Figure 1).

In one embodiment, for example with numbering as depicted in Figure 1, the mismatch tolerant region is positioned between and including base pairs 3-9 when numbered
from the nucleotide starting at the 5' end of the sense strand of the duplex. Therefore, a
DsiRNAm of the invention possesses a single mismatched base pair at any one of positions
3, 4, 5, 6, 7, 8 or 9 of the sense strand of a right-hand extended DsiRNA (where position 1 is
the 5' terminal nucleotide of the sense strand and position 9 is the nucleotide residue of the
sense strand that is immediately 5' of the projected Ago2 cut site of the target MYC RNA
sequence corresponding to the sense strand sequence). In certain embodiments, for a
DsiRNAm that possesses a mismatched base pair nucleotide at any of positions 3, 4, 5, 6, 7,
8 or 9 of the sense strand, the corresponding mismatched base pair nucleotide of the antisense
strand not only forms a mismatched base pair with the DsiRNAm sense strand sequence,
but also forms a mismatched base pair with a DsiRNAm target MYC RNA sequence (thus,
complementarity between the antisense strand sequence and the sense strand sequence is
disrupted at the mismatched base pair within the DsiRNAm, and complementarity is
similarly disrupted between the antisense strand sequence of the DsiRNAm and the target
MYC RNA sequence). In alternative embodiments, the mismatch base pair nucleotide of the
antisense strand of a DsiRNAm only form a mismatched base pair with a corresponding
nucleotide of the sense strand sequence of the DsiRNAm, yet base pairs with its
corresponding target MYC RNA sequence nucleotide (thus, complementarity between the
antisense strand sequence and the sense strand sequence is disrupted at the mismatched base
pair within the DsiRNAm, yet complementarity is maintained between the antisense strand
sequence of the DsiRNAm and the target MYC RNA sequence).

A DsiRNAm of the invention that possesses a single mismatched base pair within
the mismatch-tolerant region (mismatch region) as described above (e.g., a DsiRNAm
harboring a mismatched nucleotide residue at any one of positions 3, 4, 5, 6, 7, 8 or 9 of the
sense strand) can further include one, two or even three additional mismatched base pairs. In
preferred embodiments, these one, two or three additional mismatched base pairs of the
DsiRNAm occur at position(s) 3, 4, 5, 6, 7, 8 and/or 9 of the sense strand (and at
the corresponding residues of the antisense strand). In one embodiment where one additional
mismatched base pair is present within a DsiRNAm, the two mismatched base pairs of the
sense strand can occur, e.g., at nucleotides of both position 4 and position 6 of the sense
strand (with mismatch also occurring at corresponding nucleotide residues of the antisense
strand).

In DsiRNAm agents possessing two mismatched base pairs, mismatches can occur
consecutively (e.g., at consecutive positions along the sense strand nucleotide sequence).
Alternatively, nucleotides of the sense strand that form mismatched base pairs with the
antisense strand sequence can be interspersed by nucleotides that base pair with the antisense
strand sequence (e.g., for a DsiRNAmm possessing mismatched nucleotides at positions 3
and 6, but not at positions 4 and 5, the mismatched residues of sense strand positions 3 and 6
are interspersed by two nucleotides that form matched base pairs with corresponding residues
of the antisense strand). For example, two residues of the sense strand (located within the
mismatch-tolerant region of the sense strand) that form mismatched base pairs with the
corresponding antisense strand sequence can occur with zero, one, two, three, four or five
matched base pairs located between these mismatched base pairs.

For certain DsiRNAmm agents possessing three mismatched base pairs, mismatches
can occur consecutively (e.g., in a triplet along the sense strand nucleotide sequence).
Alternatively, nucleotides of the sense strand that form mismatched base pairs with the
antisense strand sequence can be interspersed by nucleotides that form matched base pairs
with the antisense strand sequence (e.g., for a DsiRNAmm possessing mismatched
nucleotides at positions 3, 4 and 8, but not at positions 5, 6 and 7, the mismatched residues of
sense strand positions 3 and 4 are adjacent to one another, while the mismatched residues of
sense strand positions 4 and 8 are interspersed by three nucleotides that form matched base
pairs with corresponding residues of the antisense strand). For example, three residues of the
sense strand (located within the mismatch-tolerant region of the sense strand) that form
mismatched base pairs with the corresponding antisense strand sequence can occur with zero,
one, two, three or four matched base pairs located between any two of these mismatched base
pairs.

For certain DsiRNAmm agents possessing four mismatched base pairs, mismatches
can occur consecutively (e.g., in a quadruplet along the sense strand nucleotide sequence).
Alternatively, nucleotides of the sense strand that form mismatched base pairs with the
antisense strand sequence can be interspersed by nucleotides that form matched base pairs
with the antisense strand sequence (e.g., for a DsiRNAmm possessing mismatched
nucleotides at positions 3, 5, 7 and 8, but not at positions 4 and 6, the mismatched residues of
sense strand positions 7 and 8 are adjacent to one another, while the mismatched residues of
sense strand positions 3 and 5 are interspersed by one nucleotide that forms a matched base
pair with the corresponding residue of the antisense strand - similarly, the the mismatched
residues of sense strand positions 5 and 7 are also interspersed by one nucleotide that forms a
matched base pair with the corresponding residue of the antisense strand). For example, four
residues of the sense strand (located within the mismatch-tolerant region of the sense strand) that form mismatched base pairs with the corresponding antisense strand sequence can occur with zero, one, two or three matched base pairs located between any two of these mismatched base pairs.

In another embodiment, for example with numbering also as depicted in Figure 1, a DsiRNAmm of the invention comprises a mismatch tolerant region which possesses a single mismatched base pair nucleotide at any one of positions 17, 18, 19, 20, 21, 22 or 23 of the antisense strand of the DsiRNA (where position 1 is the 5’ terminal nucleotide of the antisense strand and position 17 is the nucleotide residue of the antisense strand that is immediately 3’ (downstream) in the antisense strand of the projected Ago2 cut site of the target MYC RNA sequence sufficiently complementary to the antisense strand sequence). In certain embodiments, for a DsiRNAmm that possesses a mismatched base pair nucleotide at any of positions 17, 18, 19, 20, 21, 22 or 23 of the antisense strand with respect to the sense strand of the DsiRNAmm, the mismatched base pair nucleotide of the antisense strand not only forms a mismatched base pair with the DsiRNAmm sense strand sequence, but also forms a mismatched base pair with a DsiRNAmm target MYC RNA sequence (thus, complementarity between the antisense strand sequence and the sense strand sequence is disrupted at the mismatched base pair within the DsiRNAmm, and complementarity is similarly disrupted between the antisense strand sequence of the DsiRNAmm and the target MYC RNA sequence). In alternative embodiments, the mismatch base pair nucleotide of the antisense strand of a DsiRNAmm only forms a mismatched base pair with a corresponding nucleotide of the sense strand sequence of the DsiRNAmm, yet base pairs with its corresponding target MYC RNA sequence nucleotide (thus, complementarity between the antisense strand sequence and the sense strand sequence is disrupted at the mismatched base pair within the DsiRNAmm, yet complementarity is maintained between the antisense strand sequence of the DsiRNAmm and the target MYC RNA sequence).

A DsiRNAmm of the invention that possesses a single mismatched base pair within the mismatch-tolerant region as described above (e.g. a DsiRNAmm harboring a mismatched nucleotide residue at positions 17, 18, 19, 20, 21, 22 or 23 of the antisense strand) can further include one, two or even three additional mismatched base pairs. In preferred embodiments, these one, two or three additional mismatched base pairs of the DsiRNAmm occur at position(s) 17, 18, 19, 20, 21, 22 and/or 23 of the antisense strand (and at corresponding residues of the sense strand). In one embodiment where one additional mismatched base pair
is present within a DsiRNAmm, the two mismatched base pairs of the antisense strand can occur, e.g., at nucleotides of both position 18 and position 20 of the antisense strand (with mismatch also occurring at corresponding nucleotide residues of the sense strand).

In DsiRNAmm agents possessing two mismatched base pairs, mismatches can occur consecutively (e.g. at consecutive positions along the antisense strand nucleotide sequence). Alternatively, nucleotides of the antisense strand that form mismatched base pairs with the sense strand sequence can be interspersed by nucleotides that base pair with the sense strand sequence (e.g. for a DsiRNAmm possessing mismatched nucleotides at positions 17 and 20, but not at positions 18 and 19, the mismatched residues of antisense strand positions 17 and 20 are interspersed by two nucleotides that form matched base pairs with corresponding residues of the sense strand). For example, two residues of the antisense strand (located within the mismatch-tolerant region of the sense strand) that form mismatched base pairs with the corresponding sense strand sequence can occur with zero, one, two, three, four, five, six or seven matched base pairs located between these mismatched base pairs.

For certain DsiRNAmm agents possessing three mismatched base pairs, mismatches can occur consecutively (e.g. in a triplet along the antisense strand nucleotide sequence). Alternatively, nucleotides of the antisense strand that form mismatched base pairs with the sense strand sequence can be interspersed by nucleotides that form matched base pairs with the sense strand sequence (e.g. for a DsiRNAmm possessing mismatched nucleotides at positions 17, 18 and 22, but not at positions 19, 20 and 21, the mismatched residues of antisense strand positions 17 and 18 are adjacent to one another, while the mismatched residues of antisense strand positions 18 and 122 are interspersed by three nucleotides that form matched base pairs with corresponding residues of the sense strand). For example, three residues of the antisense strand (located within the mismatch-tolerant region of the antisense strand) that form mismatched base pairs with the corresponding sense strand sequence can occur with zero, one, two, three, four, five or six matched base pairs located between any two of these mismatched base pairs.

For certain DsiRNAmm agents possessing four mismatched base pairs, mismatches can occur consecutively (e.g. in a quadruplet along the antisense strand nucleotide sequence). Alternatively, nucleotides of the antisense strand that form mismatched base pairs with the sense strand sequence can be interspersed by nucleotides that form matched base pairs with the sense strand sequence (e.g. for a DsiRNAmm possessing mismatched nucleotides at positions 18, 20, 22 and 23, but not at positions 19 and 21, the mismatched residues of
antisense strand positions 22 and 23 are adjacent to one another, while the mismatched residues of antisense strand positions 18 and 20 are interspersed by one nucleotide that forms a matched base pair with the corresponding residue of the sense strand - similarly, the the mismatched residues of antisense strand positions 20 and 22 are also interspersed by one nucleotide that forms a matched base pair with the corresponding residue of the sense strand). For example, four residues of the antisense strand (located within the mismatch-tolerant region of the antisense strand) that form mismatched base pairs with the corresponding sense strand sequence can occur with zero, one, two, three, four or five matched base pairs located between any two of these mismatched base pairs.

For reasons of clarity, the location(s) of mismatched nucleotide residues within the above DsiRNAmm agents are numbered in reference to the 5' terminal residue of either sense or antisense strands of the DsiRNAmm. The numbering of positions located within the mismatch-tolerant region (mismatch region) of the antisense strand can shift with variations in the proximity of the 5' terminus of the sense or antisense strand to the projected Ago2 cleavage site. Thus, the location(s) of preferred mismatch sites within either antisense strand or sense strand can also be identified as the permissible proximity of such mismatches to the projected Ago2 cut site. Accordingly, in one preferred embodiment, the position of a mismatch nucleotide of the sense strand of a DsiRNAmm is the nucleotide residue of the sense strand that is located immediately 5' (upstream) of the projected Ago2 cleavage site of the corresponding target MYC RNA sequence. In other preferred embodiments, a mismatch nucleotide of the sense strand of a DsiRNAmm is positioned at the nucleotide residue of the sense strand that is located two nucleotides 5' (upstream) of the projected Ago2 cleavage site, three nucleotides 5' (upstream) of the projected Ago2 cleavage site, four nucleotides 5' (upstream) of the projected Ago2 cleavage site, five nucleotides 5' (upstream) of the projected Ago2 cleavage site, six nucleotides 5' (upstream) of the projected Ago2 cleavage site, seven nucleotides 5' (upstream) of the projected Ago2 cleavage site, eight nucleotides 5' (upstream) of the projected Ago2 cleavage site, or nine nucleotides 5' (upstream) of the projected Ago2 cleavage site.

Exemplary single mismatch-containing 25/27mer DsiRNAs (DsiRNAmm) include the following structures (such mismatch-containing structures may also be incorporated into other exemplary DsiRNA structures shown herein).

\[ 5' -XX^M \underbrace{XXXXXXXXXXXXXXXXXXDD-3} \]
wherein "X"=RNA, "D"=DNA and "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'-0-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 above, can also be used in the above DsiRNAmm agents. For the above mismatch structures, the top strand is the sense strand, and the bottom strand is the antisense strand.
In certain embodiments, a DsiRNA of the invention can contain mismatches that exist in reference to the target MYC RNA sequence yet do not necessarily exist as mismatched base pairs within the two strands of the DsiRNA - thus, a DsiRNA can possess perfect complementarity between first and second strands of a DsiRNA, yet still possess mismatched residues in reference to a target MYC RNA (which, in certain embodiments, may be advantageous in promoting efficacy and/or potency and/or duration of effect). In certain embodiments, where mismatches occur between antisense strand and target MYC RNA sequence, the position of a mismatch is located within the antisense strand at a position(s) that corresponds to a sequence of the sense strand located 5' of the projected Ago2 cut site of the target region - e.g., antisense strand residue(s) positioned within the antisense strand to the 3' of the antisense residue which is complementary to the projected Ago2 cut site of the target sequence.

Exemplary 25/27mer DsiRNAs that harbor a single mismatched residue in reference to target sequences include the following structures.

Target RNA Sequence: 5'- . . AXXXXXXXXXXXXXXXXXXXX . . -3'
DsiRNAmm Sense Strand: 5'-XXXXXXXXXXXXXXXXXXXXXXDD- 3'
DsiRNAmm Antisense Strand: 3'-EXXXXXXXXXXXXXXXXXXXXXXXXXX- 5'

Target RNA Sequence: 5'- . . XAXXXXXXXXXXXXXXXXXXX . . -3'
DsiRNAmm Sense Strand: 5'-XXXXXXXXXXXXXXXXXXXXXXDD-3'
DsiRNAmm Antisense Strand: 3'-XEXXXXXXXXXXXXXXXXXXXXXXXXX-5'

Target RNA Sequence: 5’- . . AXXXXXXXXXXXXXXXXXXXX . . -3’
DsiRNAmm Sense Strand: 5’-BXXXXXXXXXXXXXXXXXXXXXXDD-3’
DsiRNAmm Antisense Strand: 3’-XXEXXXXXXXXXXXXXXXXXXXXXX-5’

Target RNA Sequence: 5’- . . XAXXXXXXXXXXXXXXXXXXX . . -3’
DsiRNAmm Sense Strand: 5’-XBXXXXXXXXXXXXXXXXXXXXXXDD-3’
DsiRNAmm Antisense Strand: 3’-XXXEXXXXXXXXXXXXXXXXXXXXXX-5’

Target RNA Sequence: 5’- . . XXAXXXXXXXXXXXXXXXXX . . -3’
DsiRNAmm Sense Strand: 5’-XXBXXXXXXXXXXXXXXXXXXXXXXXDD-3’
DsiRNAmm Antisense Strand: 3’-XXXXEXXXXXXXXXXXXXXXXXXXXXXX-5’
Target RNA Sequence: 5'-. . . XXXAXXXXXXXXXXXXXXX . . -3'
DsiRNAmm Sense Strand: 5'-XXXBXXXXXXXXXXXXXXXXXXXDD-3'
DsiRNAmm Antisense Strand: 3'-XXXXXXEXXXXXXXXXXXXXXXXXX-5'

wherein "X"=RNA, "D"=DNA and "E"=Nucleic acid residues (RNA, DNA or non-natural or modified nucleic acids) that do not base pair (hydrogen bond) with corresponding "A" RNA residues of otherwise complementary (target) strand when strands are annealed, yet optionally do base pair with corresponding "B" residues ("B" residues are also RNA, DNA or non-natural or modified nucleic acids). Any of the residues of such agents can optionally be 2'-0-methyl RNA monomers - alternating positioning of 2'-0-methyl RNA monomers that commences from the 3'-terminal residue of the bottom (second) strand, as shown above, can also be used in the above DsiRNA agents.

In certain embodiments, the guide strand of a dsRNA of the invention that is sufficiently complementary to a target RNA (e.g., mRNA) along at least 19 nucleotides of the target gene sequence to reduce target gene expression is not perfectly complementary to the
at least 19 nucleotide long target gene sequence. Rather, it is appreciated that the guide
strand of a dsRNA of the invention that is sufficiently complementary to a target mRNA
along at least 19 nucleotides of a target RNA sequence to reduce target gene expression can
have one, two, three, or even four or more nucleotides that are mismatched with the 19
nucleotide or longer target strand sequence. Thus, for a 19 nucleotide target RNA sequence,
the guide strand of a dsRNA of the invention can be sufficiently complementary to the target
RNA sequence to reduce target gene levels while possessing, e.g., only 15/19, 16/19, 17/19 or
18/19 matched nucleotide residues between guide strand and target RNA sequence.

In addition to the above-exemplified structures, dsRNAs of the invention can also
possess one, two or three additional residues that form further mismatches with the target
MYC RNA sequence. Such mismatches can be consecutive, or can be interspersed by
nucleotides that form matched base pairs with the target MYC RNA sequence. Where
interspersed by nucleotides that form matched base pairs, mismatched residues can be spaced
apart from each other within a single strand at an interval of one, two, three, four, five, six,
seven or even eight base paired nucleotides between such mismatch-forming residues.

As for the above-described DsiRNAmm agents, a preferred location within dsRNAs
(e.g., DsiRNAs) for antisense strand nucleotides that form mismatched base pairs with target
MYC RNA sequence (yet may or may not form mismatches with corresponding sense strand
nucleotides) is within the antisense strand region that is located 3' (downstream) of the
antisense strand sequence which is complementary to the projected Ago2 cut site of the
DsiRNA (e.g., in Figure 1, the region of the antisense strand which is 3' of the projected
Ago2 cut site is preferred for mismatch-forming residues and happens to be located at
positions 17-23 of the antisense strand for the 25/27mer agent shown in Figure 1). Thus, in
one embodiment, the position of a mismatch nucleotide (in relation to the target MYC RNA
sequence) of the antisense strand of a DsiRNAmm is the nucleotide residue of the antisense
strand that is located immediately 3' (downstream) within the antisense strand sequence of
the projected Ago2 cleavage site of the corresponding target MYC RNA sequence. In other
preferred embodiments, a mismatch nucleotide of the antisense strand of a DsiRNAmm (in
relation to the target MYC RNA sequence) is positioned at the nucleotide residue of the
antisense strand that is located two nucleotides 3' (downstream) of the corresponding
projected Ago2 cleavage site, three nucleotides 3' (downstream) of the corresponding
projected Ago2 cleavage site, four nucleotides 3' (downstream) of the corresponding
projected Ago2 cleavage site, five nucleotides 3' (downstream) of the corresponding
projected Ago2 cleavage site, six nucleotides 3' (downstream) of the projected Ago2 cleavage site, seven nucleotides 3' (downstream) of the projected Ago2 cleavage site, eight nucleotides 3' (downstream) of the projected Ago2 cleavage site, or nine nucleotides 3' (downstream) of the projected Ago2 cleavage site.

In dsRNA agents possessing two mismatch-forming nucleotides of the antisense strand (where mismatch-forming nucleotides are mismatch forming in relation to target MYC RNA sequence), mismatches can occur consecutively (e.g., at consecutive positions along the antisense strand nucleotide sequence). Alternatively, nucleotides of the antisense strand that form mismatched base pairs with the target MYC RNA sequence can be interspersed by nucleotides that base pair with the target MYC RNA sequence (e.g., for a DsiRNA possessing mismatch-forming nucleotides at positions 17 and 20 (starting from the 5' terminus (position 1) of the antisense strand of the 25/27mer agent shown in Figure 1), but not at positions 18 and 19, the mismatched residues of sense strand positions 17 and 20 are interspersed by two nucleotides that form matched base pairs with corresponding residues of the target MYC RNA sequence). For example, two residues of the antisense strand (located within the mismatch-tolerant region of the antisense strand) that form mismatched base pairs with the corresponding target MYC RNA sequence can occur with zero, one, two, three, four or five matched base pairs (with respect to target MYC RNA sequence) located between these mismatch-forming base pairs.

For certain dsRNAs possessing three mismatch-forming base pairs (mismatch-forming with respect to target MYC RNA sequence), mismatch-forming nucleotides can occur consecutively (e.g., in a triplet along the antisense strand nucleotide sequence). Alternatively, nucleotides of the antisense strand that form mismatched base pairs with the target MYC RNA sequence can be interspersed by nucleotides that form matched base pairs with the target MYC RNA sequence (e.g., for a DsiRNA possessing mismatched nucleotides at positions 17, 18 and 22, but not at positions 19, 20 and 21, the mismatch-forming residues of antisense strand positions 17 and 18 are adjacent to one another, while the mismatch-forming residues of antisense strand positions 18 and 22 are interspersed by three nucleotides that form matched base pairs with corresponding residues of the target MYC RNA). For example, three residues of the antisense strand (located within the mismatch-tolerant region of the antisense strand) that form mismatched base pairs with the corresponding target MYC RNA sequence can occur with zero, one, two, three or four matched base pairs located between any two of these mismatch-forming base pairs.
For certain dsRNAs possessing four mismatch-forming base pairs (mismatch-forming with respect to target MYC RNA sequence), mismatch-forming nucleotides can occur consecutively (e.g., in a quadruplet along the sense strand nucleotide sequence). Alternatively, nucleotides of the antisense strand that form mismatched base pairs with the target MYC RNA sequence can be interspersed by nucleotides that form matched base pairs with the target MYC RNA sequence (e.g., for a DsiRNA possessing mismatch-forming nucleotides at positions 17, 19, 21 and 22, but not at positions 18 and 20, the mismatch-forming residues of antisense strand positions 21 and 22 are adjacent to one another, while the mismatch-forming residues of antisense strand positions 17 and 19 are interspersed by one nucleotide that forms a matched base pair with the corresponding residue of the target MYC RNA sequence - similarly, the mismatch-forming residues of antisense strand positions 19 and 21 are also interspersed by one nucleotide that forms a matched base pair with the corresponding residue of the target MYC RNA sequence). For example, four residues of the antisense strand (located within the mismatch-tolerant region of the antisense strand) that form mismatched base pairs with the corresponding target MYC RNA sequence can occur with zero, one, two or three matched base pairs located between any two of these mismatch-forming base pairs.

The above DsiRNAmmm and other dsRNA structures are described in order to exemplify certain structures of DsiRNAmmm and dsRNA agents. Design of the above DsiRNAmmm and dsRNA structures can be adapted to generate, e.g., DsiRNAmmm forms of other DsiRNA structures shown infra. As exemplified above, dsRNAs can also be designed that possess single mismatches (or two, three or four mismatches) between the antisense strand of the dsRNA and a target sequence, yet optionally can retain perfect complementarity between sense and antisense strand sequences of a dsRNA.

It is further noted that the dsRNA agents exemplified infra can also possess insertion/deletion (in/del) structures within their double-stranded and/or target MYC RNA-aligned structures. Accordingly, the dsRNAs of the invention can be designed to possess in/del variations in, e.g., antisense strand sequence as compared to target MYC RNA sequence and/or antisense strand sequence as compared to sense strand sequence, with preferred location(s) for placement of such in/del nucleotides corresponding to those locations described above for positioning of mismatched and/or mismatch-forming base pairs.

It is also noted that the DsiRNAs of the instant invention can tolerate mismatches
within the 3'-terminal region of the sense strand/5'-terminal region of the antisense strand, as this region is modeled to be processed by Dicer and liberated from the guide strand sequence that loads into RISC. Exemplary DsiRNA structures of the invention that harbor such mismatches include the following:

**Target RNA Sequence:** 5'-...XXXXXXXXXXXXXXXXXXXXXXXXHX...-3'

**DsiRNA Sense Strand:** 5'-XXXXXXXXXXXXXXXXXXXXXXXXXXIXDD-3'

**DsiRNA Antisense Strand:** 3'-XXXXXXXXXXXXXXXXXXXXXXXXJXX-5'

**Target RNA Sequence:** 5'-...XXXXXXXXXXXXXXXXXXXXXXXXHX...-3'

**DsiRNA Sense Strand:** 5'-XXXXXXXXXXXXXXXXXXXXXXXXXIDD-3'

**DsiRNA Antisense Strand:** 3'-XXXXXXXXXXXXXXXXXXXXXXXXXXJX-5'

**Target RNA Sequence:** 5'-...XXXXXXXXXXXXXXXXXXXXXXXXHX...-3'

**DsiRNA Sense Strand:** 5'-XXXXXXXXXXXXXXXXXXXXXXXXXID-3'

**DsiRNA Antisense Strand:** 3'-XXXXXXXXXXXXXXXXXXXXXXXXXJX-5'

**Target RNA Sequence:** 5'-...XXXXXXXXXXXXXXXXXXXXXXXXHX...-3'

**DsiRNA Sense Strand:** 5'-XXXXXXXXXXXXXXXXXXXXXXXXXDI-3'

**DsiRNA Antisense Strand:** 3'-XXXXXXXXXXXXXXXXXXXXXXXXJ-5'

wherein "X"=RNA, "D"=DNA and "I" and "J"=Nucleic acid residues (RNA, DNA or non-natural or modified nucleic acids) that do not base pair (hydrogen bond) with one another, yet optionally "J" is complementary to target RNA sequence nucleotide "H". Any of the residues of such agents can optionally be 2'-0-methyl RNA monomers - alternating positioning of 2'-0-methyl RNA monomers that commences from the 3'-terminal residue of the bottom (second) strand, as shown above - or any of the above-described methylation patterns - can also be used in the above DsiRNA agents. The above mismatches can also be combined within the DsiRNAs of the instant invention.
In the below structures, such mismatches are introduced within the asymmetric MYC-622 DsiRNA (newly-introduced mismatch residues are italicized):

**MYC-622 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)**

5 'AGGAACUAUGACGCUGAC^AcgA-3' (SEQ ID NO: 3707)
3 'UGUCCUUGAUACUGGACGUGA^cUGA-5' (SEQ ID NO: 490)

Optionally, the mismatched 'A' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

**MYC-622 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)**

5 'AGGAACUAUGACGCUGAC^AcgA-S' (SEQ ID NO: 3708)
3 'UGUCCUUGAUACUGGACGUGA^cUGA-5' (SEQ ID NO: 490)

Optionally, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

**MYC-622 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)**

5 'AGGAACUAUGACGCUGAC^AcgAUA-3' (SEQ ID NO: 3709)
3 'UGUCCUUGAUACUGGACGUGA^cUGA-5' (SEQ ID NO: 490)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'G'.

**MYC-622 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)**

5 'AGGAACUAUGACGCUGAC^AcgAUA^cUGA-3' (SEQ ID NO: 3710)
3 'UGUCCUUGAUACUGGACGUGA^cUGA-5' (SEQ ID NO: 490)

Optionally, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'C'.

**MYC-622 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)**

5 'AGGAACUAUGACGCUGAC^AcgAUA^cUGA^t-3' (SEQ ID NO: 3711)
3 'UGUCCUUGAUACUGGACGUGA^cUGA^t-5' (SEQ ID NO: 490)

Optionally, the mismatched 'U' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-622 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)**

5 'AGGAACUAUGACGCUGAC^AcgAUA^t-3' (SEQ ID NO: 3712)
Optionally, the mismatched 't' residue of position 24 of the sense strand is alternatively 'a' or 'g'.

MYC-622 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)

5 'AGGAACUAUGACCUCGACUACGAc
\text{g}-3' (SEQ ID NO: 3713)

3 'UGUCCUUGAUACUGGAGCUGAUGCU
\text{A}-5' (SEQ ID NO: 490)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

MYC-622 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)

5 'AGGAACUAUGACCUCGACUACGAc
\text{c}-3' (SEQ ID NO: 163)

3 'UGUCCUUGAUACUGGAGCUGAUGCU
\text{A}-5' (SEQ ID NO: 3714)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

MYC-622 25/27mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)

5 'AGGAACUAUGACCUCGACUACGAc
\text{t}-3' (SEQ ID NO: 163)

3 'UGUCCUUGAUACUGGAGCUGAUGCU
\text{A}-5' (SEQ ID NO: 3715)

Optionally, the mismatched 'A' residue of position 2 of the antisense strand is alternatively 'U' or 'C'.

MYC-622 25/27mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)

5 'AGGAACUAUGACCUCGACUACGAct-3' (SEQ ID NO: 163)

3 'UGUCCUUGAUACUGGAGCUGAUGCU
\text{A}-5' (SEQ ID NO: 3716)

Optionally, the mismatched 'A' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-622 25/27mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)

5 'AGGAACUAUGACCUCGACUACGAct-3' (SEQ ID NO: 163)

3 'UGUCCUUGAUACUGGAGCUGAUGCU
\text{A}-5' (SEQ ID NO: 3717)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'G'.

MYC-622 25/27mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)
Optional, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'C'.

**MYC-622 25/27mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)**

5' -AGGAACUAUGACCUCGACUA c GAct - 3' (SEQ ID NO: 163 )
3' -UGUCCUUGAUACUGGAGCUGAU uCUGA-5' (SEQ ID NO: 3718 )

Optional, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

**MYC-622 25/27mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)**

5' -AGGAACUAUGACCUCGACUAcGAct - 3' (SEQ ID NO: 163 )
3' -UGUCCUUGAUACUGGAGCUGA ³GCUGA-5' (SEQ ID NO: 3719 )

Optional, the mismatched 'U' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

As another example, in the below structures, such mismatches are introduced within the asymmetric MYC-953 DsiRNA (newly-introduced mismatch residues are italicized):

**MYC-953 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)**

5' -ACGACGAGACCUCUCAUCAA³AACat - 3' (SEQ ID NO: 3721 )
3' -CCUGCUGCUCUCUGGAGAUGAUuUUGUA-5' (SEQ ID NO: 520 )

Optional, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

**MYC-953 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)**

5' -ACGACGAGACCUCUCAUCAAA³ACat - 3' (SEQ ID NO: 3722 )
3' -CCUGCUGCUCUGGAAGAUGAUuUGUA-5' (SEQ ID NO: 520 )

Optional, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

**MYC-953 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)**

5' -ACGACGAGACCUCUCAUCAAA³ACat - 3' (SEQ ID NO: 3723 )
Optionally, the mismatched 'U' residue of position 21 of the sense strand is alternatively 'G' or 'C'.

MYC-953 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)
5 ' -ACGACGAGACCUUCAUCAAAC Gat-3 ' (SEQ ID NO: 3724)
3 ' -CCUGCUGCUCCUGGAUAGUUUUUuGUA-5 ' (SEQ ID NO: 520)

Optionally, the mismatched 'G' residue of position 22 of the sense strand is alternatively 'U' or 'C'.

MYC-953 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)
5 ' -ACGACGAGACCUUCAUCAAAAA Aat-3 ' (SEQ ID NO: 3725)
3 ' -CCUGCUGCUCCUGGAUAGUUUUUGU-5 ' (SEQ ID NO: 520)

Optionally, the mismatched 'A' residue of position 23 of the sense strand is alternatively 'U' or 'G'.

MYC-953 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)
5 ' -ACGACGAGACCUUCAUCAAAAA ^t-S ' (SEQ ID NO: 3726)
3 ' -CCUGCUGCUCCUGGAUAGUUUUUGuA-5 ' (SEQ ID NO: 520)

Optionally, the mismatched 'g' residue of position 24 of the sense strand is alternatively 't' or 'c'.

MYC-953 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)
5 ' -ACGACGAGACCUUCAUCAAAAAACa d-3 ' (SEQ ID NO: 3727)
3 ' -CCUGCUGCUCCUGGAUAGGUUUUUGU -5 ' (SEQ ID NO: 520)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

MYC-953 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)
5 ' -ACGACGAGACCUUCAUCAAAACaCat-3 ' (SEQ ID NO: 193)
3 ' -CCUGCUGCUCCUGGAUAGUUUUUGUU -5 ' (SEQ ID NO: 3728)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

MYC-953 25/27mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)
Optionally, the mismatched 'C' residue of position 2 of the antisense strand is alternatively 'A' or 'G'.

MYC-953 25/27mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)

5' -ACGACGAGACCUUCAUCAAAAACat - 3' (SEQ ID NO: 193)
3' -CCUGCUGCUUGGAUUUUUGA-5' (SEQ ID NO: 3729)

Optionally, the mismatched 'U' residue of position 3 of the antisense strand is alternatively 'A' or 'G'.

MYC-953 25/27mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)

5' -ACGACGAGACCUUCAUCAAAAACat - 3' (SEQ ID NO: 193)
3' -CCUGCUGCUUGGAUUUUUGA-5' (SEQ ID NO: 3730)

Optionally, the mismatched 'C' residue of position 4 of the antisense strand is alternatively 'A' or 'G'.

MYC-953 25/27mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5' -ACGACGAGACCUUCAUCAAAAACat - 3' (SEQ ID NO: 193)
3' -CCUGCUGCUUGGAUUUUUGA-5' (SEQ ID NO: 3731)

Optionally, the mismatched 'A' residue of position 5 of the antisense strand is alternatively 'C' or 'G'.

MYC-953 25/27mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5' -ACGACGAGACCUUCAUCAAAAACat - 3' (SEQ ID NO: 193)
3' -CCUGCUGCUUGGAUUUUUGA-5' (SEQ ID NO: 3732)

Optionally, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-953 25/27mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5' -ACGACGAGACCUUCAUCAAAAACat - 3' (SEQ ID NO: 193)
3' -CCUGCUGCUUGGAUUUUUGA-5' (SEQ ID NO: 3733)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

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As an additional example, in the below structures, such mismatches are introduced within the asymmetric MYC-1364 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-1364 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)
5 ' -AAGAUGAGGAGAAAGAAUCGA^GUUt -3 ' (SEQ ID NO: 3735)
3 ' -UCUUCUACUCUCCUUCUUAGCUACAACA -5 ' (SEQ ID NO: 361)

Optionally, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

MYC-1364 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)
5 ' -AAGAUGAGGAGAAAGAAUCGA^GUUt -3 ' (SEQ ID NO: 3736)
3 ' -UCUUCUACUCUCCUUCUUAGCUACAACA -5 ' (SEQ ID NO: 361)

Optionally, the mismatched 'A' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

MYC-1364 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)
5 ' -AAGAUGAGGAGAAAGAAUCGA^GUUt -3 ' (SEQ ID NO: 3737)
3 ' -UCUUCUACUCUCCUUCUUAGCUACAACA -5 ' (SEQ ID NO: 361)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'C'.

MYC-1364 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)
5 ' -AAGAUGAGGAGAAAGAAUCGA^GUUt -3 ' (SEQ ID NO: 3738)
3 ' -UCUUCUACUCUCCUUCUUAGCUACAACAACA -5 ' (SEQ ID NO: 361)

Optionally, the mismatched 'G' residue of position 22 of the sense strand is alternatively 'A' or 'C'.

MYC-1364 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)
5 ' -AAGAUGAGGAGAAAGAAUCGA^GUUt -3 ' (SEQ ID NO: 3739)
3 ' -UCUUCUACUCUCCUUCUUAGCUACAACAACAACA -5 ' (SEQ ID NO: 361)

Optionally, the mismatched 'A' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

MYC-1364 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)
Optionally, the mismatched 't' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

MYC-1364 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)

5 'AAGAUGAGGAAGAAAUCGAUGUUt-3' (SEQ ID NO: 3741)
3 'UCUUCUACUCUUCUUGAGCUACAAu-5' (SEQ ID NO: 361)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

MYC-1364 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)

5 'AAGAUGAGGAAGAAAUCGAUGUUgt-3' (SEQ ID NO: 34)
3 'UCUUCUACUCUCUUCUUAGCUACAu-5' (SEQ ID NO: 3742)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

MYC-1364 25/27mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)

5 'AAGAUGAGGAAGAAAUCGAUGUU^t-3' (SEQ ID NO: 34)
3 'UCUUCUACUCUCUCUUAGCUACCA-5' (SEQ ID NO: 3743)

Optionally, the mismatched 'A' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-1364 25/27mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)

5 'AAGAUGAGGAAGAAAUCGAUGUugt-3' (SEQ ID NO: 34)
3 'UCUUCUACUCUCUUCUUGCUACCAyCA-5' (SEQ ID NO: 3744)

Optionally, the mismatched 'U' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-1364 25/27mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)

5 'AAGAUGAGGAAGAAAUCGAUGUugt-3' (SEQ ID NO: 34)
3 'UCUUCUACUCUUCUUCUUGCUACCAACA-5' (SEQ ID NO: 3745)

Optionally, the mismatched 'C' residue of position 4 of the antisense strand is alternatively 'U' or 'G'.

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MYC-1364 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5' - AAGAUGAGGAAGAAAUCGAGUgt - 3' (SEQ ID NO: 34)
3' - UCUUCUACUCCUUCUUAGCU UACAAC-5' (SEQ ID NO: 3746)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'G'.

MYC-1364 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5' - AAGAUGAGGAAGAAAUCGAGUgt - 3' (SEQ ID NO: 34)
3' - UCUUCUACUCCUUCUUAGCU UACAAC-5' (SEQ ID NO: 3747)

Optionally, the mismatched 'U' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-1364 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5' - AAGAUGAGGAAGAAAUCGAGUgt - 3' (SEQ ID NO: 34)
3' - UCUUCUACUCCUUCUUAGCU UACAAC-5' (SEQ ID NO: 3748)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

As a further example, in the below structures, such mismatches are introduced within the asymmetric MYC-1370 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-1370 25/27 mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)

5' - AGGAAGAAUUCGAGUUG UUCUgt - 3' (SEQ ID NO: 3749)
3' - UCCUUCUUCUUAGCUACAAC AAGACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'A' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)

5' - AGGAAGAAUUCGAGUUG UUCUgt - 3' (SEQ ID NO: 3750)
3' - UCCUUCUUCUUAGCUACAAC AAGACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'A' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)
5 'AGGAAGAAAUCGAUGUUGUUU^Ugt-3' (SEQ ID NO: 3751)  
3 'ACUCCUUCUUAGGUAAACAAGAAA^ACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'C' or 'G'.

**MYC-1370 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)**

5 'AGGAAGAAAUCGAUGUUGUUU^Ugt-3' (SEQ ID NO: 3752)  
3 'ACUCCUUCUUAGGUAAACAAGAAA^ACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'G'.

**MYC-1370 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)**

5 'AGGAAGAAAUCGAUGUUGUUU^Ugt-3' (SEQ ID NO: 3753)  
3 'ACUCCUUCUUAGGUAAACAAGAAA^ACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'A' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-1370 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)**

5 'AGGAAGAAAUCGAUGUUGUUU^Ugt-3' (SEQ ID NO: 3754)  
3 'ACUCCUUCUUAGGUAAACAAGAAA^ACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'U' residue of position 24 of the sense strand is alternatively 'A' or 'C'.

**MYC-1370 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)**

5 'AGGAAGAAAUCGAUGUUGUUU^Ugt-3' (SEQ ID NO: 3755)  
3 'ACUCCUUCUUAGGUAAACAAGAAA^ACA-5' (SEQ ID NO: 362)

Optionally, the mismatched 'A' residue of position 25 of the sense strand is alternatively 'C' or 'G'.

**MYC-1370 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)**

5 'AGGAAGAAAUCGAUGUUGUUU^Ugt-3' (SEQ ID NO: 35)  
3 'ACUCCUUCUUAGGUAAACAAGAACACACAGACu-5' (SEQ ID NO: 3756)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

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MYC-1370 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)

5 ' -AGGAAGAAAUCGAUGUUGUUUCUt-3' (SEQ ID NO: 35)
3 ' -ACUCCUUCCUUAGCUACAACAAAGA ₂A-5' (SEQ ID NO: 3757)

Optionally, the mismatched 'A' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)

5 ' -AGGAAGAAAUCGAUGUUGUUUCUgt-3' (SEQ ID NO: 35)
3 ' -ACUCCUUCCUUAGCUACAACAAAGuCA-5' (SEQ ID NO: 3758)

Optionally, the mismatched 'U' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)

5 ' -AGGAAGAAAUCGAUGUUGUUUCuCT-3' (SEQ ID NO: 35)
3 ' -ACUCCUUCCUUAGCUACAACAAAGACA-5' (SEQ ID NO: 3759)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'C'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5 ' -AGGAAGAAAUCGAUGUUGUUUCuAt-3' (SEQ ID NO: 35)
3 ' -ACUCCUUCCUUAGCUACAACAAAGyACA-5' (SEQ ID NO: 3760)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'C' or 'G'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5 ' -AGGAAGAAAUCGAUGUUGUUUCuAAt-3' (SEQ ID NO: 35)
3 ' -ACUCCUUCCUUAGCUACAACAAyAGACA-5' (SEQ ID NO: 3761)

Optionally, the mismatched 'U' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-1370 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5 ' -AGGAAGAAAUCGAUGUUGUUUCuAGt-3' (SEQ ID NO: 35)
3 ' -ACUCCUUCCUUAGCUACAACAgAGACA-5' (SEQ ID NO: 3762)

Optionally, the mismatched 'U' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

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As another example, in the below structures, such mismatches are introduced within the asymmetric MYC-1711 DsiRNA (newly-introduced mismatch residues are italicized):

**MYC-1711 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)**

```
5' -AGCUUUUUGCCCUUGCU 2^ACCAGa-3'  (SEQ ID NO: 3763)
3' -CCUCGAAAAACGGGACGCA 3^UGGUCU-5'  (SEQ ID NO: 606)
```

Optionally, the mismatched 'A' residue of position 19 of the sense strand is alternatively 'U' or 'C'.

**MYC-1711 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)**

```
5' -AGCUUUUUGCCCUUGCU 2^CCAGa-S'  (SEQ ID NO: 3764)
3' -CCUCGAAAAACGGGACGCACuGGUCU -5'  (SEQ ID NO: 606)
```

Optionally, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

**MYC-1711 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)**

```
5' -AGCUUUUUGCCCUUGCU 2^CAGa-3'  (SEQ ID NO: 3765)
3' -CCUCGAAAAACGGGACGCACuGGUCU -5'  (SEQ ID NO: 606)
```

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'G'.

**MYC-1711 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)**

```
5' -AGCUUUUUGCCCUUGCU 2^AGa-S'  (SEQ ID NO: 3766)
3' -CCUCGAAAAACGGGACGCACuGGUCU -5'  (SEQ ID NO: 606)
```

Optionally, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'G'.

**MYC-1711 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)**

```
5' -AGCUUUUUGCCCUUGCU 2^4a-3'  (SEQ ID NO: 3767)
3' -CCUCGAAAAACGGGACGCACUGGuCU -5'  (SEQ ID NO: 606)
```

Optionally, the mismatched 'U' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-1711 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)**
5 '−AGCUUUUUGCCUCUGGACCAU−3' (SEQ ID NO: 3768)
3 '−CCUCGAAAAACGGGACGCACUGGU−5' (SEQ ID NO: 606)

Optionally, the mismatched 't' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

MYC-1711 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)
5 '−AGCUUUUUGCCUCUGGACCAU−3' (SEQ ID NO: 3769)
3 '−CCUCGAAAAACGGGACGCACUGGU−5' (SEQ ID NO: 606)

Optionally, the mismatched 't' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

MYC-1711 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)
5 '−AGCUUUUUGCCUCUGGACCAU−3' (SEQ ID NO: 279)
3 '−CCUCGAAAAACGGGACGCACUGGU−5' (SEQ ID NO: 3770)

Optionally, the mismatched 'A' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

MYC-1711 25/27mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)
5 '−AGCUUUUUGCCUCUGGACCAU−3' (SEQ ID NO: 279)
3 '−CCUCGAAAAACGGGACGCACUGGU−5' (SEQ ID NO: 3771)

Optionally, the mismatched 'A' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-1711 25/27mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)
5 '−AGCUUUUUGCCUCUGGACCAU−3' (SEQ ID NO: 279)
3 '−CCUCGAAAAACGGGACGCACUGGU−5' (SEQ ID NO: 3772)

Optionally, the mismatched 'A' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-1711 25/27mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)
5 '−AGCUUUUUGCCUCUGGACCAU−3' (SEQ ID NO: 279)
3 '−CCUCGAAAAACGGGACGCACUGU−5' (SEQ ID NO: 3773)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'C'.


MYC-1711 25/27mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5 'AGCUUUUUGCCCUGCGUGA cCAga-3' (SEQ ID NO: 279)
3 '-CCUCGAAAAACGGAAGCACUyGUCU-5' (SEQ ID NO: 3774)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'C'.

MYC-1711 25/27mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5 'AGCUUUUUGCCCUGCGUGA cCAga-3' (SEQ ID NO: 279)
3 '-CCUCGAAAAACGGAAGCACACaGUCU-5' (SEQ ID NO: 3775)

Optionally, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-1711 25/27mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5 'AGCUUUUUGCCCUGCGUGA cCAga-3' (SEQ ID NO: 279)
3 '-CCUCGAAAAACGGAAGCACACaGUCU-5' (SEQ ID NO: 3776)

Optionally, the mismatched 'U' residue of position 7 of the antisense strand is alternatively 'A' or 'G'.

As an additional example, in the below structures, such mismatches are introduced within the asymmetric MYC-1769 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-1769 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAGCCac-S' (SEQ ID NO: 3777)
3 '-GUUCCAUAUAAGGAAUUUuUCGGUG-5' (SEQ ID NO: 393)

Optionally, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

MYC-1769 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAGCCac-S' (SEQ ID NO: 3778)
3 '-GUUCCAUAUAAGGAAUUUuUCGGUG-5' (SEQ ID NO: 393)

Optionally, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

MYC-1769 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)
5 'AGGUAGUUAUCCUUAAAAAA A CCac-3' (SEQ ID NO: 3779)
3 'GUUCAUCAAAGGAUUUUUU c GGUG-5' (SEQ ID NO: 393)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'C'.

MYC-1769 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAG^Cac-3' (SEQ ID NO: 3780)
3 'GUUCAUCAAAGGAAUUUUUCG GUG-5' (SEQ ID NO: 393)

Optionally, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'G'.

MYC-1769 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAGC Aac-3' (SEQ ID NO: 3781)
3 'GUUCAUCAUGGAAUUUUUCG GUG-5' (SEQ ID NO: 393)

Optionally, the mismatched 'A' residue of position 23 of the sense strand is alternatively 'U' or 'G'.

MYC-1769 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAGCC Gc-3' (SEQ ID NO: 3782)
3 'GUUCAUCAUGGAAUUUUUGCGGuG-5' (SEQ ID NO: 393)

Optionally, the mismatched 'g' residue of position 24 of the sense strand is alternatively 't' or 'c'.

MYC-1769 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAGCCa a-3' (SEQ ID NO: 3783)
3 'GUUCAUCAUGGAAUUUUUCGGU u-5' (SEQ ID NO: 393)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 't' or 'g'.

MYC-1769 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)

5 'AGGUAGUUAUCCUUAAAAAGCa c-3' (SEQ ID NO: 66)
3 'GUUCAUCAUGGAAUUUUUGCGGu-5' (SEQ ID NO: 3784)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'A' or 'C.'
MYC-1769 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)
5 'AGGUAGUUAAUCCUAAAAAGCCaC-3' (SEQ ID NO: 66)
3 'GUUCCAUCAAAGGAAUUUUUCGG-G5' (SEQ ID NO: 3785)

Optionally, the mismatched 'C' residue of position 2 of the antisense strand is alternatively 'A' or 'G'.

MYC-1769 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)
5 'AGGUAGUUAAUCCUAAAAAGCCaC-3' (SEQ ID NO: 66)
3 'GUUCCAUCAAAGGAAUUUUUCGG-G5' (SEQ ID NO: 3786)

Optionally, the mismatched 'U' residue of position 3 of the antisense strand is alternatively 'A' or 'C'.

MYC-1769 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)
5 'AGGUAGUUAAUCCUAAAAAGCCaC-3' (SEQ ID NO: 66)
3 'GUUCCAUCAAAGGAAUUUUUCGUG-G5' (SEQ ID NO: 3787)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'C'.

MYC-1769 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)
5 'AGGUAGUUAAUCCUAAAAAGCCaC-3' (SEQ ID NO: 66)
3 'GUUCCAUCAAAGGAAUUUUUCGUG-G5' (SEQ ID NO: 3788)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'G'.

MYC-1769 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)
5 'AGGUAGUUAAUCCUAAAAAGCCaC-3' (SEQ ID NO: 66)
3 'GUUCCAUCAAAGGAAUUUUUCGUG-G5' (SEQ ID NO: 3789)

Optionally, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-1769 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)
5 'AGGUAGUUAAUCCUAAAAAGCCac-3' (SEQ ID NO: 66)
3 'GUUCCAUCAAAGGAAUUUUUCGUG-G5' (SEQ ID NO: 3790)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

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As a further example, in the below structures, such mismatches are introduced within the asymmetric MYC-1965 DsiRNA (newly-introduced mismatch residues are italicized):

**MYC-1965 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5’-terminus)**

5’ -CCUAUGAACUUGUUUCAA^UGCA t g - 3’  (SEQ ID NO: 3791)
3’ -GU GGAUACUUGAACAAAGUUuACGUAC−5’  (SEQ ID NO: 422)

Optionally, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

**MYC-1965 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5’-terminus)**

5’ -CCUAUGAACUUGUUUCAAA AGCA t g - 3’  (SEQ ID NO: 3792)
3’ -GU GGAUACUUGAACAAAGUUUACGUAC−5’  (SEQ ID NO: 422)

Optionally, the mismatched 'A' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

**MYC-1965 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5’-terminus)**

5’ -CCUAUGAACUUGUUUCAAA A t g - 3’  (SEQ ID NO: 3793)
3’ -GU GGAUACUUGAACAAAGUUUA GUAC−5’  (SEQ ID NO: 422)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'C'.

**MYC-1965 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5’-terminus)**

5’ -CCUAUGAACUUGUUUCAAAAG UAt g - 3’  (SEQ ID NO: 3794)
3’ -GU GGAUACUUGAACAAAGUUUACGUAC −5’  (SEQ ID NO: 422)

Optionally, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'G'.

**MYC-1965 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5’-terminus)**

5’ -CCUAUGAACUUGUUUCAAAUG ^U t g - 3’  (SEQ ID NO: 3795)
3’ -GU GGAUACUUGAACAAAGUUUACGUAC−5’  (SEQ ID NO: 422)

Optionally, the mismatched 'U' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-1965 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5’-terminus)**

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Optionally, the mismatched 'g' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

**MYC-1965 25/27 mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)**

5' -CCUAUGAACUUGUUUCAAUGCA^g-S' (SEQ ID NO: 3796)
3' -GUGGAUACUUGAACAAAGUUUACGU A C- 5' (SEQ ID NO: 422)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 't' or 'c'.

**MYC-1965 25/27 mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)**

5' -CCUAUGAACUUGUUUCAAUGCAa- 3' (SEQ ID NO: 95)
3' -GUGGAUACUUGAACAAAGUUUACGUa- 5' (SEQ ID NO: 3798)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'A' or 'G'.

**MYC-1965 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)**

5' -CCUAUGAACUUGUUUCAAUGCAg- 3' (SEQ ID NO: 95)
3' -GUGGAUACUUGAACAAAGUUUACGu- 5' (SEQ ID NO: 3799)

Optionally, the mismatched 'C' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

**MYC-1965 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)**

5' -CCUAUGAACUUGUUUCAAUGC A t- 3' (SEQ ID NO: 95)
3' -GUGGAUACUUGAACAAAGUUUACGu A C- 5' (SEQ ID NO: 3800)

Optionally, the mismatched 'A' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

**MYC-1965 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)**

5' -CCUAUGAACUUGUUUCAAUGC A t g- 3' (SEQ ID NO: 95)
3' -GUGGAUACUUGAACAAAGUUUACU A C- 5' (SEQ ID NO: 3801)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'C.'
MYC-1965 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5' -CCUAUGAACUUGUUUCAAAU ^GCA^t-3' (SEQ ID NO: 95)
3' -GUGGUAUCUUGAACAAAGUUUyGUAC-5' (SEQ ID NO: 3802)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'G'.

MYC-1965 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5' -CCUAUGAACUUGUUUCAAA GCA^t-3' (SEQ ID NO: 95)
3' -GUGGUAUCUUGAACAAAGUUUyCGUAC-5' (SEQ ID NO: 3803)

Optionally, the mismatched 'U' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-1965 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5' -CCUAUGAACUUGUUUCAAA ^UGCA^t-3' (SEQ ID NO: 95)
3' -GUGGUAUCUUGAACAAAGUUUyCGUAC-5' (SEQ ID NO: 3804)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

As another example, in the below structures, such mismatches are introduced within the asymmetric MYC-2099 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-2099 25/27 mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)

5' -CCAUCUUUUUUUUUUCUU ^AACA^ga-3' (SEQ ID NO: 3805)
3' -AUGGUAGAAAAAAAGAA ^UUGUCU-5' (SEQ ID NO: 444)

Optionally, the mismatched 'A' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)

5' -CCAUCUUUUUUUUUUCUU^AACA^ga-S' (SEQ ID NO: 3806)
3' -AUGGUAGAAAAAAAGAA^yUGUCU-5' (SEQ ID NO: 444)

Optionally, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)
5 '−CCAUCUUUUUUUUUCUUUA^CAga−S ' (SEQ ID NO: 380 7)
3 '−AUGGUAGAAAAAAAAGAAAUuGUCU−5 ' (SEQ ID NO: 444)

Optional, the mismatched 'U' residue of position 21 of the sense strand is alternatively 'G' or 'C'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 22 of sense strand (from 5'−terminus)
5 '−CCAUCUUUUUUUUUCUUUA^Aga−S ' (SEQ ID NO: 380 8)
3 '−AUGGUAGAAAAAAAAGAAAUUUCU−5 ' (SEQ ID NO: 444)

Optional, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 23 of sense strand (from 5'−terminus)
5 '−CCAUCUUUUUUUUUCUUUA^C%a−3 ' (SEQ ID NO: 380 9)
3 '−AUGGUAGAAAAAAAAGAAAUUGyCU−5 ' (SEQ ID NO: 444)

Optional, the mismatched 'U' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 24 of sense strand (from 5'−terminus)
5 '−CCAUCUUUUUUUUUCUUUA^CAta−3 ' (SEQ ID NO: 381 0)
3 '−AUGGUAGAAAAAAAAGAAAUUGyCU−5 ' (SEQ ID NO: 444)

Optional, the mismatched 't' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 25 of sense strand (from 5'−terminus)
5 '−CCAUCUUUUUUUUUCUUUA^Cgt−3 ' (SEQ ID NO: 381 1)
3 '−AUGGUAGAAAAAAAAGAAAUUGCy−5 ' (SEQ ID NO: 444)

Optional, the mismatched 't' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 1 of antisense strand (from 5'−terminus)
5 '−CCAUCUUUUUUUUUCUUUA^CAag−3 ' (SEQ ID NO: 117)
3 '−AUGGUAGAAAAAAAAGAAAUUGUC^A−5 ' (SEQ ID NO: 381 2)

Optional, the mismatched 'A' residue of position 1 of the antisense strand is alternatively 'G' or 'C.'
MYC-2099 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5’-terminus)

5 ' -CCAUCUUUUUUUUUUUCUUUAACAg-3 ' (SEQ ID NO: 117)
3 ' -AUGGUAGAAAAAAAAAGAAAAUGU AaU-5 ' (SEQ ID NO: 3813)

Optionally, the mismatched 'A' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5’-terminus)

5 ' -CCAUCUUUUUUUUUUUCUUUAAC ^ga-3 ' (SEQ ID NO: 117)
3 ' -AUGGUAGAAAAAAAAAGAAAAUUG ^ACU-5 ' (SEQ ID NO: 3814)

Optionally, the mismatched 'A' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5’-terminus)

5 ' -CCAUCUUUUUUUUUUUCUUUAAC Aga-3 ' (SEQ ID NO: 117)
3 ' -AUGGUAGAAAAAAAAAGAAAAUUG ACU-5 ' (SEQ ID NO: 3815)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'C'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5’-terminus)

5 ' -CCAUCUUUUUUUUUUUCUUUAAC ^CAga-3 ' (SEQ ID NO: 117)
3 ' -AUGGUAGAAAAAAAAAGAAAAUUG ^ACUCU-5 ' (SEQ ID NO: 3816)

Optionally, the mismatched 'A' residue of position 5 of the antisense strand is alternatively 'C' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5’-terminus)

5 ' -CCAUCUUUUUUUUUUUCUUUAAC ACAga-3 ' (SEQ ID NO: 117)
3 ' -AUGGUAGAAAAAAAAAGAAAAUUG ACUCU-5 ' (SEQ ID NO: 3817)

Optionally, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-2099 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5’-terminus)

5 ' -CCAUCUUUUUUUUUUUCUUUAAC AACAga-3 ' (SEQ ID NO: 117)
3 ' -AUGGUAGAAAAAAAAAGAAAAUUGACUCU-5 ' (SEQ ID NO: 3818)

Optionally, the mismatched 'U' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.
As an additional example, in the below structures, such mismatches are introduced within the asymmetric MYC-2115 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-2115 25/27 mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)

5 '−UUUAACAGAUUGUAAAG\(\text{GAAtt}−3\' (SEQ ID NO: 3819)  
3 '−AGAAAUUGUCUAACGUAAuUCUAA-5' (SEQ ID NO: 619)

Optionally, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)

5 '−UUUAACAGAUUGUAAAG^\text{GAAtt}−S' (SEQ ID NO: 3820)  
3 '−AGAAAUUGUCUAACGUAAuUCUAA-5' (SEQ ID NO: 619)

Optionally, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)

5 '−UUUAACAGAUUGUAAAG^\text{GAAtt}−3' (SEQ ID NO: 3821)  
3 '−AGAAAUUGUCUAACGUAAuUCUAA-5' (SEQ ID NO: 619)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'C.

MYC-2115 25/27 mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)

5 '−UUUAACAGAUUGUAAAGG\text{Att}−3' (SEQ ID NO: 3822)  
3 '−AGAAAUUGUCUAACGUAAuUCUAA-5' (SEQ ID NO: 619)

Optionally, the mismatched 'G' residue of position 22 of the sense strand is alternatively 'U' or 'C.

MYC-2115 25/27 mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)

5 '−UUUAACAGAUUGUAAAGA\text{tt}−S' (SEQ ID NO: 3823)  
3 '−AGAAAUUGUCUAACGUAAuUCUAA-5' (SEQ ID NO: 619)

Optionally, the mismatched 'U' residue of position 23 of the sense strand is alternatively 'C or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)
Optionally, the mismatched 'g' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)

5' -UUUAACAGAUUUUGUAUUUAAGAA9 3' (SEQ ID NO: 3824)
3' -AGAAAUUGUCUAAACAUAAAUCUUU 5' (SEQ ID NO: 619)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)

5' -UUUAACAGAUUUUGUAUUUAAGAAt 3' (SEQ ID NO: 292)
3' -AGAAAUUGUCUAAACAUAAAUCUUaa 5' (SEQ ID NO: 3826)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)

5' -UUUAACAGAUUUUGUAUUUAAGAAAt 3' (SEQ ID NO: 292)
3' -AGAAAUUGUCUAAACAUAAAUCUUa 5' (SEQ ID NO: 3827)

Optionally, the mismatched 'C' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)

5' -UUUAACAGAUUUUGUAUUUAAGAAAt 3' (SEQ ID NO: 292)
3' -AGAAAUUGUCUAAACAUAAAUCUUa 5' (SEQ ID NO: 3828)

Optionally, the mismatched 'A' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)

5' -UUUAACAGAUUUUGUAUUUAAGAAAt 3' (SEQ ID NO: 292)
3' -AGAAAUUGUCUAAACAUAAAUCU 5' (SEQ ID NO: 3829)

Optionally, the mismatched 'C' residue of position 4 of the antisense strand is alternatively 'A' or 'G'.

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MYC-2115 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5 'UUUAACAGAUUUGUAUUUAA GAAatt-3' (SEQ ID NO: 292)
3 'AGAAAUUGUCUAAACAUAAAU uUUAAA-5' (SEQ ID NO: 3830)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5 'UUUAACAGAUUUGUAUUUAA GAAatt-3' (SEQ ID NO: 292)
3 'AGAAAUUGUCUAAACAUAAAU uUUAAA-5' (SEQ ID NO: 3831)

Optionally, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C or 'G'.

MYC-2115 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5 'UUUAACAGAUUUGUAUUUAA GAAatt-3' (SEQ ID NO: 292)
3 'AGAAAUUGUCUAAACAUAAAU uUUAAA-5' (SEQ ID NO: 3832)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C or 'G'.

As a further example, in the below structures, such mismatches are introduced within the asymmetric MYC-2120 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-2120 25/27 mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)

5 'CAAGAUUGUAUUGAAGAA AUGUuTT-3' (SEQ ID NO: 3833)
3 'UGUCUAAAACAUAAAWU CAAAA-5' (SEQ ID NO: 447)

Optionally, the mismatched 'A' residue of position 19 of the sense strand is alternatively 'C or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)

5 'CAAGAUUGUAUUGAAGAA AUGUuTT-3' (SEQ ID NO: 3834)
3 'UGUCUAAAACAUAAAWUCU CAAA-5' (SEQ ID NO: 447)

Optionally, the mismatched 'A' residue of position 20 of the sense strand is alternatively 'C or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)
Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'C'.

**MYC-2120 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)**

5'--CAGAUUUGUAUUUAAGAAUUGUUt-3' (SEQ ID NO: 3836)
3'--UUGUCUAACAAUAUUUCUUAAAC A AAA-5' (SEQ ID NO: 447)

Optionally, the mismatched 'G' residue of position 22 of the sense strand is alternatively 'A' or 'C'.

**MYC-2120 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)**

5'--CAGAUUUGUAUUUAAGAAUUGUUt-3' (SEQ ID NO: 3837)
3'--UUGUCUAACAAUAUUUCUUAAACA A AA-5' (SEQ ID NO: 447)

Optionally, the mismatched 'A' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-2120 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)**

5'--CAGAUUUGUAUUUAAGAAUUGUUt-t-5' (SEQ ID NO: 3838)
3'--UUGUCUAACAAUAUUUCUUAAACA AA-5' (SEQ ID NO: 447)

Optionally, the mismatched 'g' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

**MYC-2120 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)**

5'--CAGAUUUGUAUUUAAGAAUUGUUt-3' (SEQ ID NO: 3839)
3'--UUGUCUAACAAUAUUUCUUAAAC AA-5' (SEQ ID NO: 447)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

**MYC-2120 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)**

5'--CAGAUUUGUAUUUAAGAAUUGUUt-3' (SEQ ID NO: 120)
3'--UUGUCUAACAAUAUUUCUUAAAC AAu-5' (SEQ ID NO: 3840)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C.'
MYC-2120 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)

5 ' -CAGAUUGUAUUGGAAUUGUUtt-3 ' (SEQ ID NO: 120)
3 ' -UUGUCUAAACAUAAUUCUAAACA - 5 ' (SEQ ID NO: 3841)

 Optionally, the mismatched 'C' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)

5 ' -CAGAUUGUAUAGAAUUG 'ttt-3 ' (SEQ ID NO: 120)
3 ' -UUGUCUAAACAUAAUUCUAAACA(yAA-5 ' (SEQ ID NO: 3842)

 Optionally, the mismatched 'U' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)

5 ' -CAGAUUGUAUUGAAUUGUU 'Ut-3 ' (SEQ ID NO: 120)
3 ' -UUGUCUAAACAUAAUUCUAAAC - 5 ' (SEQ ID NO: 3843)

 Optionally, the mismatched 'C' residue of position 4 of the antisense strand is alternatively 'U' or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5 ' -CAGAUUGUAUUGAAUUGUUt-3 ' (SEQ ID NO: 120)
3 ' -UUGUCUAAACAUAAUUCUUAAuAAAA - 5 ' (SEQ ID NO: 3844)

 Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5 ' -CAGAUUGUAUUGAAUUGUUt-3 ' (SEQ ID NO: 120)
3 ' -UUGUCUAAACAUAAUUCUUAyAAAA - 5 ' (SEQ ID NO: 3845)

 Optionally, the mismatched 'U' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-2120 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5 ' -CAGAUUGUAUUGAAUUGUUt-3 ' (SEQ ID NO: 120)
3 ' -UUGUCUAAACAUAAUUCUUAyAAAA - 5 ' (SEQ ID NO: 3846)

 Optionally, the mismatched 'U' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

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As another example, in the below structures, such mismatches are introduced within the asymmetric MYC-2196 DsiRNA (newly-introduced mismatch residues are italicized):

**MYC-2196 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5’-terminus)**

5 '¬UGUAAAAACUUUAUAAΛ4\CGUt-3'  ' (SEQ ID NO: 3847)
3 '¬UUACAUUUUAUGAAAUUUUuUGCAA-5'  ' (SEQ ID NO: 624)

Optionally, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5’-terminus)**

5 '¬UGUAAAAACUUUAUAAΛ4\GUt-3'  ' (SEQ ID NO: 3848)
3 '¬UUACAUUUUAUGAAAUUUUuGCAA-5'  ' (SEQ ID NO: 624)

Optionally, the mismatched 'U' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5’-terminus)**

5 '¬UGUAAAAACUUUAUAAAΑgUt-3'  ' (SEQ ID NO: 3849)
3 '¬UUACAUUUUAUGAAAUUUUuGAAA-5'  ' (SEQ ID NO: 624)

Optionally, the mismatched 'A' residue of position 21 of the sense strand is alternatively 'U' or 'G'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 22 of sense strand (from 5’-terminus)**

5 '¬UGUAAAAACUUUAUAAAΑC^Utt-3'  ' (SEQ ID NO: 3850)
3 '¬UUACAUUUUAUGAAAUUUUGCΛAAA-5'  ' (SEQ ID NO: 624)

Optionally, the mismatched 'U' residue of position 22 of the sense strand is alternatively 'A' or 'C'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 23 of sense strand (from 5’-terminus)**

5 '¬UGUAAAAACUUUAUAAAΑCt-3'  ' (SEQ ID NO: 3851)
3 '¬UUACAUUUUAUGAAAUUUUUGCΛAA-5'  ' (SEQ ID NO: 624)

Optionally, the mismatched 'A' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 24 of sense strand (from 5’-terminus)**
Optionally, the mismatched 'g' residue of position 24 of the sense strand is alternatively 'a' or 'c'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)**

$$5' - \text{UGUAAAUAACUUUAUAAAACG} \text{U} - 3'$$ (SEQ ID NO: 3852)

$$3' - \text{UUACAUUUUAUGAAAUAUUUG} \text{CA} - 5'$$ (SEQ ID NO: 624)

Optionally, the mismatched 'a' residue of position 25 of the sense strand is alternatively 'c' or 'g'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)**

$$5' - \text{UGUAAAUAACUUUAUAAAACG} \text{U} - 3'$$ (SEQ ID NO: 3853)

$$3' - \text{UUACAUUUUAUGAAAUAUUUG} \text{CAu} - 5'$$ (SEQ ID NO: 624)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 2 of antisense strand (from 5'-terminus)**

$$5' - \text{UGUAAAUAACUUUAUAAAACG} \text{U} - 3'$$ (SEQ ID NO: 297)

$$3' - \text{UUACAUUUUAUGAAAUAUUUG} \text{CA} - 5'$$ (SEQ ID NO: 3854)

Optionally, the mismatched 'C' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 3 of antisense strand (from 5'-terminus)**

$$5' - \text{UGUAAAUAACUUUAUAAAACG} \text{U} - 3'$$ (SEQ ID NO: 297)

$$3' - \text{UUACAUUUUAUGAAAUAUUUG} \text{Gaa} - 5'$$ (SEQ ID NO: 3855)

Optionally, the mismatched 'U' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

**MYC-2196 25/27mer DsiRNA, mismatch position = 4 of antisense strand (from 5'-terminus)**

$$5' - \text{UGUAAAUAACUUUAUAAAACG} \text{U} - 3'$$ (SEQ ID NO: 297)

$$3' - \text{UUACAUUUUAUGAAAUAUUUG} \text{AA} - 5'$$ (SEQ ID NO: 3856)

Optionally, the mismatched 'A' residue of position 4 of the antisense strand is alternatively 'U' or 'G'.

5' -UGUAAAUAACUUUAUAAAACGU9 t - 3' (SEQ ID NO: 3852)

3' -UUACAUUUUAUGAAAUAUUUGCA A- 5' (SEQ ID NO: 624)
MYC-2196 25/27mer DsiRNA, mismatch position = 5 of antisense strand (from 5'-terminus)

5' -UGUAAAUAACUUAUUAAUAAAA < GUt t - 3'  (SEQ ID NO: 297)
3' -UUACAUUUUAUGAAUUUUU yCAAA - 5'  (SEQ ID NO: 3858)

Optionally, the mismatched 'U' residue of position 5 of the antisense strand is alternatively 'A' or 'C'.

MYC-2196 25/27mer DsiRNA, mismatch position = 6 of antisense strand (from 5'-terminus)

5' -UGUAAAUAACUUAUUAAuAuGUt t - 3'  (SEQ ID NO: 297)
3' -UUACAUUUUAUGAAUUUUU A GCAAA - 5'  (SEQ ID NO: 3859)

Optionally, the mismatched 'A' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-2196 25/27mer DsiRNA, mismatch position = 7 of antisense strand (from 5'-terminus)

5' -UGUAAAUAACUUAUUAAuAUGGu t - 3'  (SEQ ID NO: 297)
3' -UUACAUUUUAUGAAUUUUU A GCAAA - 5'  (SEQ ID NO: 3860)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

As an additional example, in the below structures, such mismatches are introduced within the asymmetric MYC-2233 DsiRNA (newly-introduced mismatch residues are italicized):

MYC-2233 25/27mer DsiRNA, mismatch position = 19 of sense strand (from 5'-terminus)

5' -CAGAAUUUCAAUCCUAGU A UAUAg t - 3'  (SEQ ID NO: 3861)
3' -GUGCUUAAAGUUAGGCAuAUCAUCA - 5'  (SEQ ID NO: 455)

Optionally, the mismatched 'U' residue of position 19 of the sense strand is alternatively 'C' or 'G'.

MYC-2233 25/27mer DsiRNA, mismatch position = 20 of sense strand (from 5'-terminus)

5' -CAGAAUUUCAAUCCUAGU A UAUAg t - 3'  (SEQ ID NO: 3862)
3' -GUGCUUAAAGUUAGGCAuAUCAUCA - 5'  (SEQ ID NO: 455)

Optionally, the mismatched 'A' residue of position 20 of the sense strand is alternatively 'C' or 'G'.

MYC-2233 25/27mer DsiRNA, mismatch position = 21 of sense strand (from 5'-terminus)
5 ' -CAGAAUUCAAUCCUAGUAUA^UAgt-3 ' (SEQ ID NO: 386 3)
3 ' -GUGUCUUAAGUAGGAUAUUAUCA-5 ' (SEQ ID NO: 455)

Optionally, the mismatched 'U' residue of position 21 of the sense strand is alternatively 'G' or 'C'.

**MYC-2233 25/27 mer DsiRNA, mismatch position = 22 of sense strand (from 5'-terminus)**

5 ' -CAGAAUUUCAUCCUAGUAUA^gt-3 ' (SEQ ID NO: 386 4)
3 ' -GUGUCUUAAGUAGGAUAUUAUCA-5 ' (SEQ ID NO: 455)

Optionally, the mismatched 'G' residue of position 22 of the sense strand is alternatively 'A' or 'C'.

**MYC-2233 25/27 mer DsiRNA, mismatch position = 23 of sense strand (from 5'-terminus)**

5 ' -CAGAAUUUCAUCCUAGUAUAu^t-3 ' (SEQ ID NO: 386 5)
3 ' -GUGUCUUAAGUAGGAUAUUAUCA-5 ' (SEQ ID NO: 455)

Optionally, the mismatched 'U' residue of position 23 of the sense strand is alternatively 'C' or 'G'.

**MYC-2233 25/27 mer DsiRNA, mismatch position = 24 of sense strand (from 5'-terminus)**

5 ' -CAGAAUUUCAUCCUAGUAUAu^t-3 ' (SEQ ID NO: 386 6)
3 ' -GUGUCUUAAGUAGGAUAUUAUCA-5 ' (SEQ ID NO: 455)

Optionally, the mismatched 'U' residue of position 24 of the sense strand is alternatively 'A' or 'C'.

**MYC-2233 25/27 mer DsiRNA, mismatch position = 25 of sense strand (from 5'-terminus)**

5 ' -CAGAAUUUCAUCCUAGUAUAu^t-3 ' (SEQ ID NO: 386 7)
3 ' -GUGUCUUAAGUAGGAUAUUAUCA-5 ' (SEQ ID NO: 455)

Optionally, the mismatched 'A' residue of position 25 of the sense strand is alternatively 'C' or 'G'.

**MYC-2233 25/27 mer DsiRNA, mismatch position = 1 of antisense strand (from 5'-terminus)**

5 ' -CAGAAUUUCAUCCUAGUAUA^gt-3 ' (SEQ ID NO: 128)
3 ' -GUGUCUUAAGUAGGAUAUUAUCA-5 ' (SEQ ID NO: 386 8)

Optionally, the mismatched 'U' residue of position 1 of the antisense strand is alternatively 'G' or 'C'.

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MYC-2233 25/27 mer DsiRNA, mismatch position = 2 of antisense strand (from 5’-terminus)

5 '−CAGAAUUUCAAUCCUAGUAAUAUAgt−3 ' (SEQ ID NO: 128)
3 '−GUGUCUUAAAGUAGGAUCAAUAU A−5 ' (SEQ ID NO: 3869)

Optionally, the mismatched 'A' residue of position 2 of the antisense strand is alternatively 'U' or 'G'.

MYC-2233 25/27 mer DsiRNA, mismatch position = 3 of antisense strand (from 5’-terminus)

5 '−CAGAAUUUCAUCUCCUAGUAAU AAgt−3 ' (SEQ ID NO: 128)
3 '−GUGUCUAAAGUAGGAUCAAUAU A−5 ' (SEQ ID NO: 3870)

Optionally, the mismatched 'A' residue of position 3 of the antisense strand is alternatively 'C' or 'G'.

MYC-2233 25/27 mer DsiRNA, mismatch position = 4 of antisense strand (from 5’-terminus)

5 '−CAGAAUUUCAUCUCCUAGUAU AAgt−3 ' (SEQ ID NO: 128)
3 '−GUGUCUAAAGUAGGAUCAAUAU A−5 ' (SEQ ID NO: 3871)

Optionally, the mismatched 'C' residue of position 4 of the antisense strand is alternatively 'U' or 'G'.

MYC-2233 25/27 mer DsiRNA, mismatch position = 5 of antisense strand (from 5’-terminus)

5 '−CAGAAUUUCAUCUCCUAGUAU AAgt−3 ' (SEQ ID NO: 128)
3 '−GUGUCUUAAAGUAGGAUCAAUAU A−5 ' (SEQ ID NO: 3872)

Optionally, the mismatched 'A' residue of position 5 of the antisense strand is alternatively 'C' or 'G'.

MYC-2233 25/27 mer DsiRNA, mismatch position = 6 of antisense strand (from 5’-terminus)

5 '−CAGAAUUUCAUCUCCUAGUAU AAgt−3 ' (SEQ ID NO: 128)
3 '−GUGUCUUAAAGUAGGAUCAAUAU A−5 ' (SEQ ID NO: 3873)

Optionally, the mismatched 'U' residue of position 6 of the antisense strand is alternatively 'C' or 'G'.

MYC-2233 25/27 mer DsiRNA, mismatch position = 7 of antisense strand (from 5’-terminus)

5 '−CAGAAUUUCAUCUCCUAGUAU AAgt−3 ' (SEQ ID NO: 128)
3 '−GUGUCUUAAAGUAGGAUCAAUAU A−5 ' (SEQ ID NO: 3874)

Optionally, the mismatched 'A' residue of position 7 of the antisense strand is alternatively 'C' or 'G'.

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For the above oligonucleotide strand sequences, it is contemplated that the sense strand sequence of one depicted duplex can be combined with an antisense strand of another depicted duplex, thereby forming a distinct duplex - in certain instances, such duplexes contain a mismatched residue with respect to the MYC target transcript sequence, while such sense and antisense strand sequences do not present a mismatch at this residue with respect to one another (e.g., duplexes comprising SEQ ID Nos: 3707 and 3720; SEQ ID Nos: 3708 and 3719; SEQ ID Nos: 3709 and 3718, etc., are contemplated as exemplary of such duplexes).

As noted above, introduction of mismatches can be performed upon any of the DsiRNAs described herein.

The mismatches of such DsiRNA structures can be combined to produce a DsiRNA possessing, e.g., two, three or even four mismatches within the 3'-terminal four to seven nucleotides of the sense strand/5'-terminal four to seven nucleotides of the antisense strand.

Indeed, in view of the flexibility of sequences which can be incorporated into DsiRNAs at the 3'-terminal residues of the sense strand/5'-terminal residues of the antisense strand, in certain embodiments, the sequence requirements of an asymmetric DsiRNA of the instant invention can be represented as the following (minimalist) structure (shown for an exemplary MYC-953 DsiRNA sequence):

5' -ACGACGAGACCUCUCAUCAXXXXX [X], 3' (SEQ ID NO: 3875)
3' -CCUGCUCUCUGGAAUGUXXXXX [X], 5' (SEQ ID NO: 3876)

where n= 1 to 5, 1 to 10, 1 to 20, 1 to 30, 1 to 50, or 1 to 80 or more.

MYC-953 mRNA Target: 5' -GGACGACGAGACCUCUCAUCAXXXXXX-3' (SEQ ID NO: 3877).

The MYC target site may also be a site which is targeted by one or more of several oligonucleotides whose complementary target sites overlap with a stated target site. For example, for an exemplary MYC-953 DsiRNA, it is noted that certain DsiRNAs targeting overlapping and only slightly offset MYC sequences can exhibit activity levels similar to that of MYC-953 (specifically, see MYC-952 of Table 9 below. Thus, in certain embodiments, a designated target sequence region can be effectively targeted by a series of DsiRNAs possessing largely overlapping sequences. (E.g., if considering DsiRNAs of the MYC-952
and MYC-953 target site(s), a more encompassing MYC transcript target sequence might be recited as, e.g., 5'- CGGACGACGAGACCUCUCAAAACAU-3' (SEQ ID NO: 3878), wherein any given DsiRNA (e.g., a DsiRNA selected from MYC-952 and MYC-953) only targets a sub-sequence within such a sequence region, yet the entire sequence can be considered a viable target for such a series of DsiRNAs).

Additionally and/or alternatively, mismatches within the 3'-terminal seven nucleotides of the sense strand/5'-terminal seven nucleotides of the antisense strand can be combined with mismatches positioned at other mismatch-tolerant positions, as described above.

In view of the present identification of the above-described Dicer substrate agents (DsiRNAs) as inhibitors of MYC levels via targeting of specific MYC sequences, it is also recognized that dsRNAs having structures similar to those described herein can also be synthesized which target other sequences within the MYC sequence of NM_002467.4 or NM_010849.4, or within variants thereof (e.g., target sequences possessing 80% identity, 90% identity, 95% identity, 96% identity, 97% identity, 98% identity, 99% or more identity to a sequence of NM_002467.4 and/or NM_010849.4).

**Anti-MYC DsiRNA Design/Synthesis**

It has been found empirically that longer dsRNA species of from 25 to 35 nucleotides (DsiRNAs) and especially from 25 to 30 nucleotides give unexpectedly effective results in terms of potency and duration of action, as compared to 19-23mer siRNA agents. Without wishing to be bound by the underlying theory of the dsRNA processing mechanism, it is thought that the longer dsRNA species serve as a substrate for the Dicer enzyme in the cytoplasm of a cell. In addition to cleaving the dsRNA of the invention into shorter segments, Dicer is thought to facilitate the incorporation of a single-stranded cleavage product derived from the cleaved dsRNA into the RISC complex that is responsible for the destruction of the cytoplasmic RNA (e.g., MYC RNA) of or derived from the target gene, MYC (or other gene associated with a MYC-associated disease or disorder). Prior studies (Rossi et al, U.S. Patent Application No. 2007/0265220) have shown that the cleavability of a dsRNA species (specifically, a DsiRNA agent) by Dicer corresponds with increased potency and duration of action of the dsRNA species.
Certain preferred anti-MYC DsiRNA agents were selected from a pre-screened population. Design of DsiRNAs can optionally involve use of predictive scoring algorithms that perform \textit{in silico} assessments of the projected activity/efficacy of a number of possible DsiRNA agents spanning a region of sequence. Information regarding the design of such scoring algorithms can be found, \textit{e.g.}, in Gong \textit{et al.} (\textit{BMC Bioinformatics} 2006, 7:516), though a more recent "v3" algorithm represents a theoretically improved algorithm relative to siRNA scoring algorithms previously available in the art. (\textit{E.g.}, the "v3" and "v4" scoring algorithms are machine learning algorithms that are not reliant upon any biases in human sequence. In addition, the "v3" and "v4" algorithms derive from data sets that are many-fold larger than that from which an older "v2" algorithm such as that described in Gong \textit{et al.} derives.)

The first and second oligonucleotides of the DsiRNA agents of the instant invention are not required to be completely complementary. In fact, in one embodiment, the 3'-terminus of the sense strand contains one or more mismatches. In one aspect, two mismatches are incorporated at the 3' terminus of the sense strand. In another embodiment, the DsiRNA of the invention is a double stranded RNA molecule containing two RNA oligonucleotides each of which is 27 nucleotides in length and, when annealed to each other, have blunt ends and a two nucleotide mismatch on the 3'-terminus of the sense strand (the 5'-terminus of the antisense strand). The use of mismatches or decreased thermodynamic stability (specifically at the 3'-sense/5'-antisense position) has been proposed to facilitate or favor entry of the antisense strand into RISC (Schwarz \textit{et al.}, 2003, \textit{Cell} 115: 199-208; Khvorova \textit{et al.}, 2003, \textit{Cell} 115: 209-216), presumably by affecting some rate-limiting unwinding steps that occur with entry of the siRNA into RISC. Thus, terminal base composition has been included in design algorithms for selecting active 21mer siRNA duplexes (Ui-Tei \textit{et al.}, 2004, \textit{Nucleic Acids Res} 32: 936-948; Reynolds \textit{et al.}, 2004, \textit{Nat Biotechnol} 22: 326-330). With Dicer cleavage of the dsRNA of this embodiment, the small end-terminal sequence which contains the mismatches will either be left unpaired with the antisense strand (become part of a 3'-overhang) or be cleaved entirely off the final 21-mer siRNA. These "mismatches", therefore, do not persist as mismatches in the final RNA component of RISC. The finding that base mismatches or destabilization of segments at the 3'-end of the sense strand of Dicer substrate improved the potency of synthetic duplexes in RNAi, presumably by facilitating processing by Dicer, was a surprising finding of past works.

**Modification of Anti-MYC dsRNAs**

One major factor that inhibits the effect of double stranded RNAs ("dsRNAs") is the degradation of dsRNAs (*e.g.*, siRNAs and DsiRNAs) by nucleases. A 3'-exonuclease is the primary nuclease activity present in serum and modification of the 3'-ends of antisense DNA oligonucleotides is crucial to prevent degradation (Eder et al., 1991, Antisense Res Dev, 1: 141-151). An RNase-T family nuclease has been identified called ERI-1 which has 3' to 5' exonuclease activity that is involved in regulation and degradation of siRNAs (Kennedy et al., 2004, Nature All: 645-649; Hong et al., 2005, Biochem J, 390: 675-679). This gene is also known as Thexl (NM_02067) in mice or THEX1 (NM_153332) in humans and is involved in degradation of histone mRNA; it also mediates degradation of 3'-overhangs in siRNAs, but does not degrade duplex RNA (Yang et al., 2006, J Biol Chem, 281: 30447-30454). It is therefore reasonable to expect that 3'-end-stabilization of dsRNAs, including the DsiRNAs of the instant invention, will improve stability.

XRN1 (NM_019001) is a 5' to 3' exonuclease that resides in P-bodies and has been implicated in degradation of mRNA targeted by miRNA (Rehwinkel et al., 2005, RNA 11: 1640-1647) and may also be responsible for completing degradation initiated by internal cleavage as directed by a siRNA. XRN2 (NM_012255) is a distinct 5' to 3' exonuclease that is involved in nuclear RNA processing.

RNase A is a major endonuclease activity in mammals that degrades RNAs. It is specific for ssRNA and cleaves at the 3'-end of pyrimidine bases. SiRNA degradation products consistent with RNase A cleavage can be detected by mass spectrometry after incubation in serum (Turner et al., 2007, Mol Biosyst 3: 43-50). The 3'-overhangs enhance the susceptibility of siRNAs to RNase degradation. Depletion of RNase A from serum reduces degradation of siRNAs; this degradation does show some sequence preference and is worse for sequences having poly A/U sequence on the ends (Haupenthal et al., 2006 Biochem Pharmacol 71: 702-710). This suggests the possibility that lower stability regions of the duplex may "breathe" and offer transient single-stranded species available for degradation by RNase A. RNase A inhibitors can be added to serum and improve siRNA longevity and potency (Haupenthal et al., 2007, IntJ. Cancer 121: 206-210).
In 21mers, phosphorothioate or boranophosphate modifications directly stabilize the internucleoside phosphate linkage. Boranophosphate modified RNAs are highly nuclease resistant, potent as silencing agents, and are relatively non-toxic. Boranophosphate modified RNAs cannot be manufactured using standard chemical synthesis methods and instead are made by in vitro transcription (IVT) (Hall et al., 2004, Nucleic Acids Res 32: 5991-6000; Hall et al., 2006, Nucleic Acids Res 34: 2773-2781). Phosphorothioate (PS) modifications can be easily placed in the RNA duplex at any desired position and can be made using standard chemical synthesis methods. The PS modification shows dose-dependent toxicity, so most investigators have recommended limited incorporation in siRNAs, favoring the 3'-ends where protection from nucleases is most important (Harborth et al., 2003, Antisense Nucleic Acid Drug Dev 13: 83-105; Chiu and Rana, 2003, Mol Cell 10: 549-561; Braasch et al., 2003, Biochemistry 42: 7967-7975; Amarzguioui et al., 2003, Nucleic Acids Research 31: 589-595). More extensive PS modification can be compatible with potent RNAi activity; however, use of sugar modifications (such as 2'-0-methyl RNA) may be superior (Choung et al., 2006, Biochem Biophys Res Commun 342: 919-927).

A variety of substitutions can be placed at the 2'-position of the ribose which generally increases duplex stability (T_m) and can greatly improve nuclease resistance. 2'-0-methyl RNA is a naturally occurring modification found in mammalian ribosomal RNAs and transfer RNAs. 2'-0-methyl modification in siRNAs is known, but the precise position of modified bases within the duplex is important to retain potency and complete substitution of 2'-0-methyl RNA for RNA will inactivate the siRNA. For example, a pattern that employs alternating 2'-0-methyl bases can have potency equivalent to unmodified RNA and is quite stable in serum (Choung et al., 2006, Biochem Biophys Res Commun 342: 919-927; Czauderna et al., 2003, Nucleic Acids Research 31: 2705-2716).

The 2'-fluoro (2'-F) modification is also compatible with dsRNA (e.g., siRNA and DsiRNA) function; it is most commonly placed at pyrimidine sites (due to reagent cost and availability) and can be combined with 2'-0-methyl modification at purine positions; 2'-F purines are available and can also be used. Heavily modified duplexes of this kind can be potent triggers of RNAi in vitro (Allerson et al., 2005, J Med Chem 48: 901-904; Prakash et al., 2005, J Med Chem 48: 4247-4253; Kraynack and Baker, 2006, RNA 12: 163-176) and can improve performance and extend duration of action when used in vivo (Morrissey et al., 2005, Hepatology 41: 1349-1356; Morrissey et al., 2005, Nat Biotechnol 23: 1002-1007). A highly potent, nuclease stable, blunt 19mer duplex containing alternative 2'-F and 2'-0-Me
bases is taught by Allerson. In this design, alternating 2'-0-Me residues are positioned in an identical pattern to that employed by Czauderna, however the remaining RNA residues are converted to 2'-F modified bases. A highly potent, nuclease resistant siRNA employed by Morrissey employed a highly potent, nuclease resistant siRNA in vivo. In addition to 2'-0-Me RNA and 2'-F RNA, this duplex includes DNA, RNA, inverted abasic residues, and a 3'-terminal PS internucleoside linkage. While extensive modification has certain benefits, more limited modification of the duplex can also improve in vivo performance and is both simpler and less costly to manufacture. Soutschek et al. (2004, Nature 432: 173-178) employed a duplex in vivo and was mostly RNA with two 2'-0-Me RNA bases and limited 3'-terminal PS internucleoside linkages.

Locked nucleic acids (LNAs) are a different class of 2'-modification that can be used to stabilize dsRNA (e.g., siRNA and DsiRNA). Patterns of LNA incorporation that retain potency are more restricted than 2'-0-methyl or 2'-F bases, so limited modification is preferred (Braasch et al., 2003, Biochemistry 42: 7967-7975; Grunweller et al., 2003, Nucleic Acids Res 31: 3185-3193; Elmen et al., 2005, Nucleic Acids Res 33: 439-447). Even with limited incorporation, the use of LNA modifications can improve dsRNA performance in vivo and may also alter or improve off target effect profiles (Mook et al., 2007, Mol Cancer Ther 6: 833-843).

Synthetic nucleic acids introduced into cells or live animals can be recognized as "foreign" and trigger an immune response. Immune stimulation constitutes a major class of off-target effects which can dramatically change experimental results and even lead to cell death. The innate immune system includes a collection of receptor molecules that specifically interact with DNA and RNA that mediate these responses, some of which are located in the cytoplasm and some of which reside in endosomes (Marques and Williams, 2005, Nat Biotechnol 23: 1399-1405; Schlee et al., 2006, Mol Ther 14: 463-470). Delivery of siRNAs by cationic lipids or liposomes exposes the siRNA to both cytoplasmic and endosomal compartments, maximizing the risk for triggering a type 1 interferon (IFN) response both in vitro and in vivo (Morrissette et al., 2005, Nat Biotechnol 23: 1002-1007; Sioud and Sorensen, 2003, Biochem Biophys Res Commun 312: 1220-1225; Sioud, 2005, J Mol Biol 348: 1079-1090; Ma et al, 2005, Biochem Biophys Res Commun 330: 755-759). RNAs transcribed within the cell are less immunogenic (Robbins et al, 2006, Nat Biotechnol 24: 566-571) and synthetic RNAs that are immunogenic when delivered using lipid-based methods can evade immune stimulation when introduced unto cells by mechanical means,
even in vivo (Heidel et al., 2004, Nat Biotechnol 22: 1579-1582). However, lipid based delivery methods are convenient, effective, and widely used. Some general strategy to prevent immune responses is needed, especially for in vivo application where all cell types are present and the risk of generating an immune response is highest. Use of chemically modified RNAs may solve most or even all of these problems.

In certain embodiments, modifications can be included in the anti-MYC dsRNA agents of the present invention so long as the modification does not prevent the dsRNA agent from possessing MYC inhibitory activity. In one embodiment, one or more modifications are made that enhance Dicer processing of the DsiRNA agent (an assay for determining Dicer processing of a DsiRNA is described elsewhere herein). In a second embodiment, one or more modifications are made that result in more effective MYC inhibition (as described herein, MYC inhibition/MYC inhibitory activity of a dsRNA can be assayed via art-recognized methods for determining RNA levels, or for determining MYC polypeptide levels, should such levels be assessed in lieu of or in addition to assessment of, e.g., MYC mRNA levels). In a third embodiment, one or more modifications are made that support greater MYC inhibitory activity (means of determining MYC inhibitory activity are described supra). In a fourth embodiment, one or more modifications are made that result in greater potency of MYC inhibitory activity per each dsRNA agent molecule to be delivered to the cell (potency of MYC inhibitory activity is described supra). Modifications can be incorporated in the 3'-terminal region, the 5'-terminal region, in both the 3'-terminal and 5'-terminal region or in some instances in various positions within the sequence. With the restrictions noted above in mind, numbers and combinations of modifications can be incorporated into the dsRNA agent. Where multiple modifications are present, they may be the same or different. Modifications to bases, sugar moieties, the phosphate backbone, and their combinations are contemplated. Either 5'-terminus can be phosphorylated.

Examples of modifications contemplated for the phosphate backbone include phosphonates, including methylphosphonate, phosphorothioate, and phosphotriester modifications such as alkylphosphotriesters, and the like. Examples of modifications contemplated for the sugar moiety include 2'-alkyl pyrimidine, such as 2'-0-methyl, 2'-fluoro, amino, and deoxy modifications and the like (see, e.g., Amarzguioui et al., 2003, Nucleic Acids Research 31: 589-595). Examples of modifications contemplated for the base groups include abasic sugars, 2-O-alkyl modified pyrimidines, 4-thiouracil, 5-bromouracil, 5-iodouracil, and 5-(3-aminoallyl)-uracil and the like. Locked nucleic acids, or LNA's, could

One or more modifications contemplated can be incorporated into either strand. The placement of the modifications in the dsRNA agent can greatly affect the characteristics of the dsRNA agent, including conferring greater potency and stability, reducing toxicity, enhance Dicer processing, and minimizing an immune response. In one embodiment, the antisense strand or the sense strand or both strands have one or more 2'-0-methyl modified nucleotides. In another embodiment, the antisense strand contains 2'-0-methyl modified nucleotides. In another embodiment, the antisense strand contains a 3' overhang that is comprised of 2'-0-methyl modified nucleotides. The antisense strand could also include additional 2'-0-methyl modified nucleotides.

In certain embodiments, the anti-MYC DsiRNA agent of the invention has several properties which enhance its processing by Dicer. According to such embodiments, the DsiRNA agent has a length sufficient such that it is processed by Dicer to produce an siRNA and at least one of the following properties: (i) the DsiRNA agent is asymmetric, e.g., has a 3' overhang on the sense strand and (ii) the DsiRNA agent has a modified 3' end on the antisense strand to direct orientation of Dicer binding and processing of the dsRNA to an active siRNA. According to these embodiments, the longest strand in the DsiRNA agent comprises 25-30 nucleotides. In one embodiment, the sense strand comprises 25-30 nucleotides and the antisense strand comprises 25-28 nucleotides. Thus, the resulting dsRNA has an overhang on the 3' end of the sense strand. The overhang is 1-4 nucleotides, such as 2 nucleotides. The antisense strand may also have a 5' phosphate.

In certain embodiments, the sense strand of a DsiRNA agent is modified for Dicer processing by suitable modifiers located at the 3' end of the sense strand, i.e., the DsiRNA agent is designed to direct orientation of Dicer binding and processing. Suitable modifiers include nucleotides such as deoxyribonucleotides, dideoxyribonucleotides, acyclonucleotides and the like and sterically hindered molecules, such as fluorescent molecules and the like.
Acyclonucleotides substitute a 2-hydroxyethoxymethyl group for the 2'-deoxyribofuranosyl sugar normally present in dNMPs. Other nucleotide modifiers could include 3'-deoxyadenosine (cordycepin), 3'-azido-3'-deoxythymidine (AZT), 2',3'-dideoxyinosine (ddl), 2',3'-dideoxy-3'-thiacytidine (3TC), 2',3'-didehydro-2',3'-dideoxythymidine (d4T) and the monophosphate nucleotides of 3'-azido-3'-deoxythymidine (AZT), 2',3'-dideoxy-3'-thiacytidine (3TC) and 2',3'-didehydro-2',3'-dideoxythymidine (d4T). In one embodiment, deoxynucleotides are used as the modifiers. When nucleotide modifiers are utilized, 1-3 nucleotide modifiers, or 2 nucleotide modifiers are substituted for the ribonucleotides on the 3' end of the sense strand. When sterically hindered molecules are utilized, they are attached to the ribonucleotide at the 3' end of the antisense strand. Thus, the length of the strand does not change with the incorporation of the modifiers. In another embodiment, the invention contemplates substituting two DNA bases in the dsRNA to direct the orientation of Dicer processing. In a further invention, two terminal DNA bases are located on the 3' end of the sense strand in place of two ribonucleotides forming a blunt end of the duplex on the 5' end of the antisense strand and the 3' end of the sense strand, and a two-nucleotide RNA overhang is located on the 3'-end of the antisense strand. This is an asymmetric composition with DNA on the blunt end and RNA bases on the overhanging end.

In certain other embodiments, the antisense strand of a DsiRNA agent is modified for Dicer processing by suitable modifiers located at the 3' end of the antisense strand, i.e., the DsiRNA agent is designed to direct orientation of Dicer binding and processing. Suitable modifiers include nucleotides such as deoxyribonucleotides, dideoxyribonucleotides, acyclonucleotides and the like and sterically hindered molecules, such as fluorescent molecules and the like. Acyclonucleotides substitute a 2-hydroxyethoxymethyl group for the 2'-deoxyribofuranosyl sugar normally present in dNMPs. Other nucleotide modifiers could include 3'-deoxyadenosine (cordycepin), 3'-azido-3'-deoxythymidine (AZT), 2',3'-dideoxyinosine (ddl), 2',3'-dideoxy-3'-thiacytidine (3TC), 2',3'-didehydro-2',3'-dideoxythymidine (d4T) and the monophosphate nucleotides of 3'-azido-3'-deoxythymidine (AZT), 2',3'-dideoxy-3'-thiacytidine (3TC) and 2',3'-didehydro-2',3'-dideoxythymidine (d4T). In one embodiment, deoxynucleotides are used as the modifiers. When nucleotide modifiers are utilized, 1-3 nucleotide modifiers, or 2 nucleotide modifiers are substituted for the ribonucleotides on the 3' end of the antisense strand. When sterically hindered molecules are utilized, they are attached to the ribonucleotide at the 3' end of the antisense strand. Thus, the length of the strand does not change with the incorporation of the modifiers. In another
embodiment, the invention contemplates substituting two DNA bases in the dsRNA to direct the orientation of Dicer processing. In a further invention, two terminal DNA bases are located on the 3' end of the antisense strand in place of two ribonucleotides forming a blunt end of the duplex on the 5' end of the sense strand and the 3' end of the antisense strand, and a two-nucleotide RNA overhang is located on the 3'-end of the sense strand. This is also an asymmetric composition with DNA on the blunt end and RNA bases on the overhanging end.

The sense and antisense strands anneal under biological conditions, such as the conditions found in the cytoplasm of a cell. In addition, a region of one of the sequences, particularly of the antisense strand, of the dsRNA has a sequence length of at least 19 nucleotides, wherein these nucleotides are adjacent to the 3' end of antisense strand and are sufficiently complementary to a nucleotide sequence of the target MYC RNA.

Additionally, the DsiRNA agent structure can be optimized to ensure that the oligonucleotide segment generated from Dicer's cleavage will be the portion of the oligonucleotide that is most effective in inhibiting gene expression. For example, in one embodiment of the invention, a 27-bp oligonucleotide of the DsiRNA agent structure is synthesized wherein the anticipated 21 to 22-bp segment that will inhibit gene expression is located on the 3'-end of the antisense strand. The remaining bases located on the 5'-end of the antisense strand will be cleaved by Dicer and will be discarded. This cleaved portion can be homologous (i.e., based on the sequence of the target sequence) or non-homologous and added to extend the nucleic acid strand.

US 2007/0265220 discloses that 27mer DsiRNAs showed improved stability in serum over comparable 21mer siRNA compositions, even absent chemical modification. Modifications of DsiRNA agents, such as inclusion of 2'-0-methyl RNA in the antisense strand, in patterns such as detailed above, when coupled with addition of a 5' Phosphate, can improve stability of DsiRNA agents. Addition of 5'-phosphate to all strands in synthetic RNA duplexes may be an inexpensive and physiological method to confer some limited degree of nuclease stability.

The chemical modification patterns of the dsRNA agents of the instant invention are designed to enhance the efficacy of such agents. Accordingly, such modifications are designed to avoid reducing potency of dsRNA agents; to avoid interfering with Dicer processing of DsiRNA agents; to improve stability in biological fluids (reduce nuclease sensitivity) of dsRNA agents; or to block or evade detection by the innate immune system.
Such modifications are also designed to avoid being toxic and to avoid increasing the cost or impact the ease of manufacturing the instant dsRNA agents of the invention.

In certain embodiments of the present invention, an anti-MYC DsiRNA agent has one or more of the following properties: (i) the DsiRNA agent is asymmetric, e.g., has a 3' overhang on the antisense strand and (ii) the DsiRNA agent has a modified 3' end on the sense strand to direct orientation of Dicer binding and processing of the dsRNA to an active siRNA. According to this embodiment, the longest strand in the dsRNA comprises 25-35 nucleotides (e.g., 25, 26, 27, 28, 29, 30, 31, 32, 33, 34 or 35 nucleotides). In certain such embodiments, the DsiRNA agent is asymmetric such that the sense strand comprises 25-34 nucleotides and the 3' end of the sense strand forms a blunt end with the 5' end of the antisense strand while the antisense strand comprises 26-35 nucleotides and forms an overhang on the 3' end of the antisense strand. In one embodiment, the DsiRNA agent is asymmetric such that the sense strand comprises 25-28 nucleotides and the antisense strand comprises 25-30 nucleotides. Thus, the resulting dsRNA has an overhang on the 3' end of the antisense strand. The overhang is 1-4 nucleotides, for example 2 nucleotides. The sense strand may also have a 5' phosphate.

The DsiRNA agent can also have one or more of the following additional properties: (a) the antisense strand has a right shift from the typical 21mer (e.g., the DsiRNA comprises a length of antisense strand nucleotides that extends to the 5' of a projected Dicer cleavage site within the DsiRNA, with such antisense strand nucleotides base paired with corresponding nucleotides of the sense strand extending 3' of a projected Dicer cleavage site in the sense strand), (b) the strands may not be completely complementary, i.e., the strands may contain simple mismatched base pairs (in certain embodiments, the DsiRNAs of the invention possess 1, 2, 3, 4 or even 5 or more mismatched base pairs, provided that MYC inhibitory activity of the DsiRNA possessing mismatched base pairs is retained at sufficient levels (e.g., retains at least 50% MYC inhibitory activity or more, at least 60% MYC inhibitory activity or more, at least 70% MYC inhibitory activity or more, at least 80% MYC inhibitory activity or more, at least 90% MYC inhibitory activity or more or at least 95% MYC inhibitory activity or more as compared to a corresponding DsiRNA not possessing mismatched base pairs. In certain embodiments, mismatched base pairs exist between the antisense and sense strands of a DsiRNA. In some embodiments, mismatched base pairs exist (or are predicted to exist) between the antisense strand and the target RNA. In certain embodiments, the presence of a
mismatched base pair(s) between an antisense strand residue and a corresponding residue within the target RNA that is located 3' in the target RNA sequence of a projected Ago2 cleavage site retains and may even enhance MYC inhibitory activity of a DsiRNA of the invention) and (c) base modifications such as locked nucleic acid(s) may be included in the 5' end of the sense strand. A "typical" 21mer siRNA is designed using conventional techniques. In one technique, a variety of sites are commonly tested in parallel or pools containing several distinct siRNA duplexes specific to the same target with the hope that one of the reagents will be effective (Ji et al, 2003, FEBS Lett 552: 247-252). Other techniques use design rules and algorithms to increase the likelihood of obtaining active RNAi effector molecules (Schwarz et al, 2003, Cell 115: 199-208; Khvorova et al, 2003, Cell 115: 209-216; Ue-Tei et al, 2004, Nucleic Acids Res 32: 936-948; Reynolds et al, 2004, Nat Biotechnol 22: 326-330; Krol et al, 2004, J Biol Chem 279: 42230-42239; Yuan et al, 2004, Nucl Acids Res 32(Webserver issue): W130-134; Boese et al, 2005, Methods Enzymol 392: 73-96). High throughput selection of siRNA has also been developed (U.S. published patent application No. 2005/0042641 Al). Potential target sites can also be analyzed by secondary structure predictions (Heale et al, 2005, Nucleic Acids Res 33(3): e30). This 21mer is then used to design a right shift to include 3-9 additional nucleotides on the 5' end of the 21mer. The sequence of these additional nucleotides is not restricted. In one embodiment, the added ribonucleotides are based on the sequence of the target gene. Even in this embodiment, full complementarity between the target sequence and the antisense siRNA is not required.

The first and second oligonucleotides of a DsiRNA agent of the instant invention are not required to be completely complementary. They only need to be sufficiently complementary to anneal under biological conditions and to provide a substrate for Dicer that produces a siRNA sufficiently complementary to the target sequence. Locked nucleic acids, or LNAs, are well known to a skilled artisan (Elmen et al, 2005, Nucleic Acids Res 33: 439-447; Kurreck et al, 2002, Nucleic Acids Res 30: 1911-1918; Crinelli et al, 2002, Nucleic Acids Res 30: 2435-2443; Braasch and Corey, 2001, Chem Biol 8: 1-7; Bondensgaard et al, 2000, Chemistry 6: 2687-2695; Wahlested et al, 2000, Proc Natl Acad Sci USA 97: 5633-5638). In one embodiment, an LNA is incorporated at the 5' terminus of the sense strand. In another embodiment, an LNA is incorporated at the 5' terminus of the sense strand in duplexes designed to include a 3' overhang on the antisense strand.

In certain embodiments, the DsiRNA agent of the instant invention 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 2 base 3'-overhang. In other embodiments, this DsiRNA agent having an asymmetric structure further contains 2 deoxynucleotides at the 3’ end of the sense strand in place of two of the ribonucleotides.

Certain DsiRNA agent compositions containing two separate oligonucleotides can be linked by a third structure. The third structure will not block Dicer activity on the DsiRNA agent and will not interfere with the directed destruction of the RNA transcribed from the target gene. In one embodiment, the third structure may be a chemical linking group. Many suitable chemical linking groups are known in the art and can be used. Alternatively, the third structure may be an oligonucleotide that links the two oligonucleotides of the DsiRNA agent in a manner such that a hairpin structure is produced upon annealing of the two oligonucleotides making up the dsRNA composition. The hairpin structure will not block Dicer activity on the DsiRNA agent and will not interfere with the directed destruction of the MYC RNA.

**MYC cDNA and Polypeptide Sequences**

Known human and mouse MYC cDNA and polypeptide sequences include the following: human MYC NM_002467.4 and corresponding human MYC polypeptide sequence GenBank Accession No. NP_002458.2; and mouse wild-type MYC sequence GenBank Accession No. NM_010849.4 (Mus musculus C57BL/6 MYC transcript, variant 1) and corresponding mouse MYC polypeptide sequence GenBank Accession No. NP_034979.3.

**In Vitro Assay to Assess dsRNA MYC Inhibitory Activity**

An in vitro assay that recapitulates RNAi in a cell-free system can be used to evaluate dsRNA constructs targeting MYC RNA sequence(s), and thus to assess MYC-specific gene inhibitory activity (also referred to herein as MYC inhibitory activity) of a dsRNA. The assay comprises the system described by Tuschl et al., 1999, Genes and Development, 13, 3191-3197 and Zamore et al., 2000, Cell, 101, 25-33 adapted for use with dsRNA (e.g., DsiRNA) agents directed against MYC RNA. A *Drosophila* extract derived from syncytial blastoderm is used to reconstitute RNAi activity in vitro. Target RNA is generated via in vitro transcription from a selected MYC expressing plasmid using T7 RNA polymerase or via chemical synthesis. Sense and antisense dsRNA strands (for example, 20 uM each) are
annealed by incubation in buffer (such as 100 mM potassium acetate, 30 mM HEPES-KOH, pH 7.4, 2 mM magnesium acetate) for 1 minute at 90°C followed by 1 hour at 37°C, then diluted in lysis buffer (for example 100 mM potassium acetate, 30 mM HEPES-KOH at pH 7.4, 2 mM magnesium acetate). Annealing can be monitored by gel electrophoresis on an agarose gel in TBE buffer and stained with ethidium bromide. The *Drosophila* lysate is prepared using zero to two-hour-old embryos from Oregon R flies collected on yeasted molasses agar that are dechorionated and lysed. The lysate is centrifuged and the supernatant isolated. The assay comprises a reaction mixture containing 50% lysate [vol/vol], RNA (10-50 pM final concentration), and 10% [vol/vol] lysis buffer containing dsRNA (10 nM final concentration). The reaction mixture also contains 10 mM creatine phosphate, 10 ug/ml creatine phosphokinase, 100 um GTP, 100 uM UTP, 100 uM CTP, 500 uM ATP, 5 mM DTT, 0.1 U/uL RNasin (Promega), and 100 uM of each amino acid. The final concentration of potassium acetate is adjusted to 100 mM. The reactions are pre-assembled on ice and preincubated at 25°C for 10 minutes before adding RNA, then incubated at 25°C for an additional 60 minutes. Reactions are quenched with 4 volumes of 1.25xPassive Lysis Buffer (Promega). Target RNA cleavage is assayed by RT-PCR analysis or other methods known in the art and are compared to control reactions in which dsRNA is omitted from the reaction.

Alternately, internally-labeled target RNA for the assay is prepared by in vitro transcription in the presence of [α-32P] CTP, passed over a G50 Sephadex column by spin chromatography and used as target RNA without further purification. Optionally, target RNA is 5′-32P-end labeled using T4 polynucleotide kinase enzyme. Assays are performed as described above and target RNA and the specific RNA cleavage products generated by RNAi are visualized on an autoradiograph of a gel. The percentage of cleavage is determined by PHOSPHOR IMAGER® (autoradiography) quantitation of bands representing intact control RNA or RNA from control reactions without dsRNA and the cleavage products generated by the assay.

In one embodiment, this assay is used to determine target sites in the MYC RNA target for dsRNA mediated RNAi cleavage, wherein a plurality of dsRNA constructs are screened for RNAi mediated cleavage of the MYC RNA target, for example, by analyzing the assay reaction by electrophoresis of labeled target RNA, or by northern blotting, as well as by other methodology well known in the art.

In certain embodiments, a dsRNA of the invention is deemed to possess MYC inhibitory activity if, e.g., a 50% reduction in MYC RNA levels is observed in a system, cell,
tissue or organism, relative to a suitable control. Additional metes and bounds for determination of MYC inhibitory activity of a dsRNA of the invention are described supra.

**Conjugation and Delivery of Anti-MYC dsRNA Agents**

In certain embodiments the present invention relates to a method for treating a subject having a MYC-associated disease or disorder, or at risk of developing a MYC-associated disease or disorder. In such embodiments, the dsRNA can act as novel therapeutic agents for controlling the MYC-associated disease or disorder. The method comprises administering a pharmaceutical composition of the invention to the patient (e.g., human), such that the expression, level and/or activity of a MYC RNA is reduced. The expression, level and/or activity of a polypeptide encoded by a MYC RNA might also be reduced by a dsRNA of the instant invention, even where said dsRNA is directed against a non-coding region of the MYC transcript (e.g., a targeted 5' UTR or 3' UTR sequence). Because of their high specificity, the dsRNAs of the present invention can specifically target MYC sequences of cells and tissues, optionally in an allele-specific manner where polymorphic alleles exist within an individual and/or population.

In the treatment of a MYC-associated disease or disorder, the dsRNA can be brought into contact with the cells or tissue of a subject, e.g., the cells or tissue of a subject exhibiting deregulation of MYC and/or otherwise targeted for reduction of MYC levels. For example, dsRNA substantially identical to all or part of a MYC RNA sequence, may be brought into contact with or introduced into such a cell, either in vivo or in vitro. Similarly, dsRNA substantially identical to all or part of a MYC RNA sequence may administered directly to a subject having or at risk of developing a MYC-associated disease or disorder.

Therapeutic use of the dsRNA agents of the instant invention can involve use of formulations of dsRNA agents comprising multiple different dsRNA agent sequences. For example, two or more, three or more, four or more, five or more, etc. of the presently described agents can be combined to produce a formulation that, e.g., targets multiple different regions of the MYC RNA, or that not only target MYC RNA but also target, e.g., cellular target genes associated with a MYC-associated disease or disorder. A dsRNA agent of the instant invention may also be constructed such that either strand of the dsRNA agent independently targets two or more regions of MYC RNA, or such that one of the strands of the dsRNA agent targets a cellular target gene of MYC known in the art.
Use of multifunctional dsRNA molecules that target more than one region of a target nucleic acid molecule can also provide potent inhibition of MYC RNA levels and expression. For example, a single multifunctional dsRNA construct of the invention can target both the MYC-1916 and MYC-1572 sites simultaneously; additionally and/or alternatively, single or multifunctional agents of the invention can be designed to selectively target one splice variant of MYC over another.

Thus, the dsRNA agents of the instant invention, individually, or in combination or in conjunction with other drugs, can be used to treat, inhibit, reduce, or prevent a MYC-associated disease or disorder. For example, the dsRNA molecules can be administered to a subject or can be administered to other appropriate cells evident to those skilled in the art, individually or in combination with one or more drugs under conditions suitable for the treatment.

The dsRNA molecules also can be used in combination with other known treatments to treat, inhibit, reduce, or prevent a MYC-associated disease or disorder in a subject or organism. For example, the described molecules could be used in combination with one or more known compounds, treatments, or procedures to treat, inhibit, reduce, or prevent a MYC-associated disease or disorder in a subject or organism as are known in the art.

A dsRNA agent of the invention can be conjugated (e.g., at its 5′ or 3′ terminus of its sense or antisense strand) or unconjugated to another moiety (e.g., a non-nucleic acid moiety such as a peptide), an organic compound (e.g., a dye, cholesterol, or the like). Modifying dsRNA agents in this way may improve cellular uptake or enhance cellular targeting activities of the resulting dsRNA agent derivative as compared to the corresponding unconjugated dsRNA agent, are useful for tracing the dsRNA agent derivative in the cell, or improve the stability of the dsRNA agent derivative compared to the corresponding unconjugated dsRNA agent.

**Methods of Introducing Nucleic Acids, Vectors, and Host Cells**

dsRNA agents of the invention may be directly introduced into a cell (i.e., intracellularly); or introduced extracellularly into a cavity, interstitial space, into the circulation of an organism, introduced orally, or may be introduced by bathing a cell or organism in a solution containing the nucleic acid. Vascular or extravascular circulation, the blood or lymph system, and the cerebrospinal fluid are sites where the nucleic acid may be introduced.
The dsRNA agents of the invention can be introduced using nucleic acid delivery methods known in art including injection of a solution containing the nucleic acid, bombardment by particles covered by the nucleic acid, soaking the cell or organism in a solution of the nucleic acid, or electroporation of cell membranes in the presence of the nucleic acid. Other methods known in the art for introducing nucleic acids to cells may be used, such as lipid-mediated carrier transport, chemical-mediated transport, and cationic liposome transfection such as calcium phosphate, and the like. The nucleic acid may be introduced along with other components that perform one or more of the following activities: enhance nucleic acid uptake by the cell or other-wise increase inhibition of the target MYC RNA.

A cell having a target MYC RNA may be from the germ line or somatic, totipotent or pluripotent, dividing or non-dividing, parenchyma or epithelium, immortalized or transformed, or the like. The cell may be a stem cell or a differentiated cell. Cell types that are differentiated include adipocytes, fibroblasts, myocytes, cardiomyocytes, endothelium, neurons, glia, blood cells, megakaryocytes, lymphocytes, macrophages, neutrophils, eosinophils, basophils, mast cells, leukocytes, granulocytes, keratinocytes, chondrocytes, osteoblasts, osteoclasts, hepatocytes, and cells of the endocrine or exocrine glands.

Depending on the particular target MYC RNA sequence and the dose of dsRNA agent material delivered, this process may provide partial or complete loss of function for the MYC RNA. A reduction or loss of RNA levels or expression (either MYC RNA expression or encoded polypeptide expression) in at least 50%, 60%, 70%, 80%, 90%, 95% or 99% or more of targeted cells is exemplary. Inhibition of MYC RNA levels or expression refers to the absence (or observable decrease) in the level of MYC RNA or MYC RNA-encoded protein. Specificity refers to the ability to inhibit the MYC RNA without manifest effects on other genes of the cell. The consequences of inhibition can be confirmed by examination of the outward properties of the cell or organism or by biochemical techniques such as RNA solution hybridization, nuclease protection, Northern hybridization, reverse transcription, gene expression monitoring with a microarray, antibody binding, enzyme linked immunosorbent assay (ELISA), Western blotting, radioimmunoassay (RIA), other immunoassays, and fluorescence activated cell analysis (FACS). Inhibition of target MYC RNA sequence(s) by the dsRNA agents of the invention also can be measured based upon the effect of administration of such dsRNA agents upon development/progression of a MYC-associated disease or disorder, e.g., tumor formation, growth, metastasis, etc., either in vivo or
in vitro. Treatment and/or reductions in tumor or cancer cell levels can include halting or reduction of growth of tumor or cancer cell levels or reductions of, e.g., 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 95% or 99% or more, and can also be measured in logarithmic terms, e.g., 10-fold, 100-fold, 1000-fold, \(10^5\)-fold, \(10^6\)-fold, \(10^7\)-fold reduction in cancer cell levels could be achieved via administration of the dsRNA agents of the invention to cells, a tissue, or a subject.

For RNA-mediated inhibition in a cell line or whole organism, expression a reporter or drug resistance gene whose protein product is easily assayed can be measured. Such reporter genes include acetohydroxyacid synthase (AHAS), alkaline phosphatase (AP), beta galactosidase (LacZ), beta glucoronidase (GUS), chloramphenicol acetyltransferase (CAT), green fluorescent protein (GFP), horseradish peroxidase (HRP), luciferase (Luc), nopaline synthase (NOS), octopine synthase (OCS), and derivatives thereof. Multiple selectable markers are available that confer resistance to ampicillin, bleomycin, chloramphenicol, gentarnycin, hygromycin, kanamycin, lincomycin, methotrexate, phosphinothricin, puromycin, and tetracyclin. Depending on the assay, quantitation of the amount of gene expression allows one to determine a degree of inhibition which is greater than 10%, 33%, 50%, 90%, 95% or 99% as compared to a cell not treated according to the present invention.

Lower doses of injected material and longer times after administration of RNA silencing agent may result in inhibition in a smaller fraction of cells (e.g., at least 10%, 20%, 50%, 75%, 90%, or 95% of targeted cells). Quantitation of gene expression in a cell may show similar amounts of inhibition at the level of accumulation of target MYC RNA or translation of target protein. As an example, the efficiency of inhibition may be determined by assessing the amount of gene product in the cell; RNA may be detected with a hybridization probe having a nucleotide sequence outside the region used for the inhibitory dsRNA, or translated polypeptide may be detected with an antibody raised against the polypeptide sequence of that region.

The dsRNA agent may be introduced in an amount which allows delivery of at least one copy per cell. Higher doses (e.g., at least 5, 10, 100, 500 or 1000 copies per cell) of material may yield more effective inhibition; lower doses may also be useful for specific applications.
MYC Biology and MYC-Targeting Therapeutics

MYC (c-MYC) is a proto-oncogene, which is overexpressed in a wide range of human cancers. When it is specifically mutated, or overexpressed, it increases cell proliferation and functions as an oncogene. The MYC gene encodes for a transcription factor that regulates expression of 15% of all genes through binding on Enhancer Box sequences (E-boxes) and recruiting histone acetyltransferases (HATs). MYC belongs to the MYC family of transcription factors, which also includes N-MYC and L-MYC genes. MYC-family transcription factors contain a bHLH/LZ (basic Helix-Loop-Helix Leucine Zipper) domain. Myc protein, through its bHLH domain, can bind to DNA, while the leucine zipper domain of Myc allows for dimerization with a partner protein, Max, another bHLH transcription factor.

The MYC gene was initially identified and characterized in Burkitt's lymphoma patients. In Burkitt's lymphoma, cancer cells show chromosomal translocations, frequently involving Chromosome 8. Cloning of the fusion chromosome break point revealed a gene that was similar to myelocytomatosis viral oncogene (v-MYC). Thus, the newfound cellular gene was named c-MYC.

Myc protein is a transcription factor that activates expression of a great number of genes through binding on consensus sequences (Enhancer Box sequences (E-boxes)) and recruiting histone acetyltransferases (HATs). It can also act as a transcriptional repressor. By binding Miz-1 transcription factor and displacing the p300 co-activator, it inhibits expression of Miz-1 target genes.

Myc is activated through various mitogenic signaling pathways, such as Wnt, Shh and EGF (via the MAPK/ERK pathway). By modifying the expression of its target genes, Myc activation results in numerous biological effects, including enhancement of cell proliferation (upregulates cyclins, downregulates p21), regulation of cell growth (upregulates ribosomal RNA and proteins), apoptosis (upregulates Bcl-2), differentiation and stem cell self-renewal. MYC is a strong proto-oncogene and it has been found to be upregulated in many types of cancers.

During discovery of MYC, chromosomes that translocated to Chromosome 8 were identified to contain immunoglobulin (Ig) genes at the break point. Post-translocation, enhancers of immunoglobulin genes were instead causing overexpression of MYC in lymphoma cells. Transgenic mouse models that overexpress MYC were then developed to
study the mechanism of tumorigenesis in Burkitt's lymphoma - e.g., transgenic mice overexpressing MYC (MYC under control of the IgM heavy chain enhancer) developed lymphomas when MYC was placed under control of the IgM heavy chain enhancer, or various other types of tumor when MYC overexpression occurred in other tissues (e.g., liver, breast), illustrating the potency of MYC as an oncogene.

8q24.12-q24.13 by R-banding and distal to fra(8)(q24.11), FRA8E, by fluorescence in situ
Eisenman R N (1991), "Max: a helix-loop-helix zipper protein that forms a sequence-specific
DNA-binding complex with Myc," Science 251 (4998): 1211-7, PMID 2006410. Gazin C,
Rigolet M, Briand J P, et al. (1986), "Immunochromat detection of proteins related to the
human c-myc exon 1," EMBO J. 5 (9): 2241-50, PMID 2430795. Luscher B, Kuenzel E A,
Krebs E G, Eisenman R N (1989), "Myc oncoproteins are phosphorylated by casein kinase
(1988), "Sequence analysis of the MYC oncogene involved in the t(8; 14)(q24;q31) chromosome
translocation in a human leukemia T-cell line indicates that putative regulatory
L C, Moore R C, Erikson J, Croce C M (1987), "MYC oncogene involved in a t(8; 22) chromosome
F (1989), "Nucleotide sequence 3' to the human c-myc oncogene: presence of a long inverted
(1988), "A non-AUG translational initiation in c-myc exon 1 generates an N-terminally
distinct protein whose synthesis is disrupted in Burkitt's lymphomas," Cell 52 (2): 185-95;
PMID 3277717.

MYC-inhibiting small molecules have recently been identified (Moyer. Nature
Medicine 17: 1325). The MYC-inhibiting double stranded nucleic acids of the instant
invention can be used alone, or in combination with any art-recognized MYC-targeting
therapeutic, such as those recited therein.

Pharmaceutical Compositions

In certain embodiments, the present invention provides for a pharmaceutical
composition comprising the dsRNA agent of the present invention. The dsRNA agent sample
can be suitably formulated and introduced into the environment of the cell by any means that
allows for a sufficient portion of the sample to enter the cell to induce gene silencing, if it is
to occur. Many formulations for dsRNA are known in the art and can be used so long as the
dsRNA gains entry to the target cells so that it can act. See, e.g., U.S. published patent application Nos. 2004/0203145 A1 and 2005/0054598 A1. For example, the dsRNA agent of the instant invention can be formulated in buffer solutions such as phosphate buffered saline solutions, liposomes, micellar structures, and capsids. Formulations of dsRNA agent with cationic lipids can be used to facilitate transfection of the dsRNA agent into cells. For example, cationic lipids, such as lipofectin (U.S. Pat. No. 5,705,188), cationic glycerol derivatives, and polycationic molecules, such as polylysine (published PCT International Application WO 97/30731), can be used. Suitable lipids include Oligofectamine, Lipofectamine (Life Technologies), NC388 (Ribozyme Pharmaceuticals, Inc., Boulder, Colo.), or FuGene 6 (Roche) all of which can be used according to the manufacturer's instructions.

Such compositions typically include the nucleic acid molecule and a pharmaceutically acceptable carrier. As used herein the language "pharmaceutically acceptable carrier" includes saline, solvents, dispersion media, coatings, antibacterial and antifungal agents, isotonic and absorption delaying agents, and the like, compatible with pharmaceutical administration. Supplementary active compounds can also be incorporated into the compositions.

A pharmaceutical composition is formulated to be compatible with its intended route of administration. Examples of routes of administration include parenteral, e.g., intravenous, intradermal, subcutaneous, oral (e.g., inhalation), transdermal (topical), transmucosal, and rectal administration. Solutions or suspensions used for parenteral, intradermal, or subcutaneous application can include the following components: a sterile diluent such as water for injection, saline solution, fixed oils, polyethylene glycols, glycerine, propylene glycol or other synthetic solvents; antibacterial agents such as benzyl alcohol or methyl parabens; antioxidants such as ascorbic acid or sodium bisulfite; chelating agents such as ethylenediaminetetraacetic acid; buffers such as acetates, citrates or phosphates and agents for the adjustment of tonicity such as sodium chloride or dextrose. pH can be adjusted with acids or bases, such as hydrochloric acid or sodium hydroxide. The parenteral preparation can be enclosed in ampoules, disposable syringes or multiple dose vials made of glass or plastic.

Pharmaceutical compositions suitable for injectable use include sterile aqueous solutions (where water soluble) or dispersions and sterile powders for the extemporaneous preparation of sterile injectable solutions or dispersion. For intravenous administration,
suitable carriers include physiological saline, bacteriostatic water, Cremophor EL.TM. (BASF, Parsippany, N.J.) or phosphate buffered saline (PBS). In all cases, the composition must be sterile and should be fluid to the extent that easy syringability exists. It should be stable under the conditions of manufacture and storage and must be preserved against the contaminating action of microorganisms such as bacteria and fungi. The carrier can be a solvent or dispersion medium containing, for example, water, ethanol, polyol (for example, glycerol, propylene glycol, and liquid polyethylene glycol, and the like), and suitable mixtures thereof. The proper fluidity can be maintained, for example, by the use of a coating such as lecithin, by the maintenance of the required particle size in the case of dispersion and by the use of surfactants. Prevention of the action of microorganisms can be achieved by various antibacterial and antifungal agents, for example, parabens, chlorobutanol, phenol, ascorbic acid, thimerosal, and the like. In many cases, it will be preferable to include isotonic agents, for example, sugars, polyalcohols such as manitol, sorbitol, sodium chloride in the composition. Prolonged absorption of the injectable compositions can be brought about by including in the composition an agent which delays absorption, for example, aluminum monostearate and gelatin.

Sterile injectable solutions can be prepared by incorporating the active compound in the required amount in a selected solvent with one or a combination of ingredients enumerated above, as required, followed by filtered sterilization. Generally, dispersions are prepared by incorporating the active compound into a sterile vehicle, which contains a basic dispersion medium and the required other ingredients from those enumerated above. In the case of sterile powders for the preparation of sterile injectable solutions, the preferred methods of preparation are vacuum drying and freeze-drying which yields a powder of the active ingredient plus any additional desired ingredient from a previously sterile-filtered solution thereof.

Oral compositions generally include an inert diluent or an edible carrier. For the purpose of oral therapeutic administration, the active compound can be incorporated with excipients and used in the form of tablets, troches, or capsules, e.g., gelatin capsules. Oral compositions can also be prepared using a fluid carrier for use as a mouthwash. Pharmaceutically compatible binding agents, and/or adjuvant materials can be included as part of the composition. The tablets, pills, capsules, troches and the like can contain any of the following ingredients, or compounds of a similar nature: a binder such as microcrystalline cellulose, gum tragacanth or gelatin; an excipient such as starch or lactose, a disintegrating
agent such as alginic acid, Primogel, or corn starch; a lubricant such as magnesium stearate or Sterotes; a glidant such as colloidal silicon dioxide; a sweetening agent such as sucrose or saccharin; or a flavoring agent such as peppermint, methyl salicylate, or orange flavoring.

For administration by inhalation, the compounds are delivered in the form of an aerosol spray from pressurized container or dispenser which contains a suitable propellant, e.g., a gas such as carbon dioxide, or a nebulizer. Such methods include those described in U.S. Pat. No. 6,468,798.

Systemic administration can also be by transmucosal or transdermal means. For transmucosal or transdermal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art, and include, for example, for transmucosal administration, detergents, bile salts, and fusidic acid derivatives. Transmucosal administration can be accomplished through the use of nasal sprays or suppositories. For transdermal administration, the active compounds are formulated into ointments, salves, gels, or creams as generally known in the art.

The compounds can also be prepared in the form of suppositories (e.g., with conventional suppository bases such as cocoa butter and other glycerides) or retention enemas for rectal delivery.

The compounds can also be administered by transfection or infection using methods known in the art, including but not limited to the methods described in McCaffrey et al. (2002), Nature, 418(6893), 38-9 (hydrodynamic transfection); Xia et al. (2002), Nature Biotechnol., 20(10), 1006-10 (viral-mediated delivery); or Putnam (1996), Am. J. Health Syst. Pharm. 53(2), 151-160, erratum at Am. J. Health Syst. Pharm. 53(3), 325 (1996).

The compounds can also be administered by a method suitable for administration of nucleic acid agents, such as a DNA vaccine. These methods include gene guns, bio injectors, and skin patches as well as needle-free methods such as the micro-particle DNA vaccine technology disclosed in U.S. Pat. No. 6,194,389, and the mammalian transdermal needle-free vaccination with powder-form vaccine as disclosed in U.S. Pat. No. 6,168,587. Additionally, intranasal delivery is possible, as described in, inter alia, Hamajima et al. (1998), Clin. Immunol. Immunopathol., 88(2), 205-10. Liposomes (e.g., as described in U.S. Pat. No. 6,472,375) and microencapsulation can also be used. Biodegradable targetable microparticle delivery systems can also be used (e.g., as described in U.S. Pat. No. 6,471,996).

In one embodiment, the active compounds are prepared with carriers that will protect the compound against rapid elimination from the body, such as a controlled release.
formulation, including implants and microencapsulated delivery systems. Biodegradable, biocompatible polymers can be used, such as ethylene vinyl acetate, polyanhydrides, polyglycolic acid, collagen, polyorthoesters, and polylactic acid. Such formulations can be prepared using standard techniques. The materials can also be obtained commercially from Alza Corporation and Nova Pharmaceuticals, Inc. Liposomal suspensions (including liposomes targeted to infected cells with monoclonal antibodies to viral antigens) can also be used as pharmaceutically acceptable carriers. These can be prepared according to methods known to those skilled in the art, for example, as described in U.S. Patent No. 4,522,811.

Toxicity and therapeutic efficacy of such compounds can be determined by standard pharmaceutical procedures in cell cultures or experimental animals, e.g., for determining the LD50 (the dose lethal to 50% of the population) and the ED50 (the dose therapeutically effective in 50% of the population). The dose ratio between toxic and therapeutic effects is the therapeutic index and it can be expressed as the ratio LD50/ED50. Compounds which exhibit high therapeutic indices are preferred. While compounds that exhibit toxic side effects may be used, care should be taken to design a delivery system that targets such compounds to the site of affected tissue in order to minimize potential damage to uninfected cells and, thereby, reduce side effects.

The data obtained from the cell culture assays and animal studies can be used in formulating a range of dosage for use in humans. The dosage of such compounds lies preferably within a range of circulating concentrations that include the ED50 with little or no toxicity. The dosage may vary within this range depending upon the dosage form employed and the route of administration utilized. For a compound used in the method of the invention, the therapeutically effective dose can be estimated initially from cell culture assays. A dose may be formulated in animal models to achieve a circulating plasma concentration range that includes the IC50 (i.e., the concentration of the test compound which achieves a half-maximal inhibition of symptoms) as determined in cell culture. Such information can be used to more accurately determine useful doses in humans. Levels in plasma may be measured, for example, by high performance liquid chromatography.

As defined herein, a therapeutically effective amount of a nucleic acid molecule (i.e., an effective dosage) depends on the nucleic acid selected. For instance, single dose amounts of a dsRNA (or, e.g., a construct(s) encoding for such dsRNA) in the range of approximately 1 pg to 1000 mg may be administered; in some embodiments, 10, 30, 100, or 1000 pg, or 10, 30, 100, or 1000 ng, or 10, 30, 100, or 1000 μg, or 10, 30, 100, or 1000 mg may be
administered. In some embodiments, 1-5 g of the compositions can be administered. The compositions can be administered one from one or more times per day to one or more times per week; including once every other day. The skilled artisan will appreciate that certain factors may influence the dosage and timing required to effectively treat a subject, including but not limited to the severity of the disease or disorder, previous treatments, the general health and/or age of the subject, and other diseases present. Moreover, treatment of a subject with a therapeutically effective amount of a nucleic acid (e.g., dsRNA), protein, polypeptide, or antibody can include a single treatment or, preferably, can include a series of treatments.

The nucleic acid molecules of the invention can be inserted into expression constructs, e.g., viral vectors, retroviral vectors, expression cassettes, or plasmid viral vectors, e.g., using methods known in the art, including but not limited to those described in Xia et al., (2002), supra. Expression constructs can be delivered to a subject by, for example, inhalation, orally, intravenous injection, local administration (see U.S. Pat. No. 5,328,470) or by stereotactic injection (see e.g., Chen et al. (1994), Proc. Natl. Acad. Sci. USA, 91, 3054-3057). The pharmaceutical preparation of the delivery vector can include the vector in an acceptable diluent, or can comprise a slow release matrix in which the delivery vehicle is imbedded. Alternatively, where the complete delivery vector can be produced intact from recombinant cells, e.g., retroviral vectors, the pharmaceutical preparation can include one or more cells which produce the gene delivery system.

The expression constructs may be constructs suitable for use in the appropriate expression system and include, but are not limited to retroviral vectors, linear expression cassettes, plasmids and viral or virally-derived vectors, as known in the art. Such expression constructs may include one or more inducible promotors, RNA Pol III promoter systems such as U6 snRNA promotors or HI RNA polymerase III promotors, or other promotors known in the art. The constructs can include one or both strands of the siRNA. Expression constructs expressing both strands can also include loop structures linking both strands, or each strand can be separately transcribed from separate promotors within the same construct. Each strand can also be transcribed from a separate expression construct, e.g., Tuschi (2002, Nature Biotechnol 20: 500-505).

It can be appreciated that the method of introducing dsRNA agents into the environment of the cell will depend on the type of cell and the make up of its environment. For example, when the cells are found within a liquid, one preferable formulation is with a lipid formulation such as in lipofectamine and the dsRNA agents can be added directly to the
liquid environment of the cells. Lipid formulations can also be administered to animals such as by intravenous, intramuscular, or intraperitoneal injection, or orally or by inhalation or other methods as are known in the art. When the formulation is suitable for administration into animals such as mammals and more specifically humans, the formulation is also pharmaceutically acceptable. Pharmaceutically acceptable formulations for administering oligonucleotides are known and can be used. In some instances, it may be preferable to formulate dsRNA agents in a buffer or saline solution and directly inject the formulated dsRNA agents into cells, as in studies with oocytes. The direct injection of dsRNA agent duplexes may also be done. For suitable methods of introducing dsRNA (e.g., DsiRNA agents), see U.S. published patent application No. 2004/0203 145 A1.

Suitable amounts of a dsRNA agent must be introduced and these amounts can be empirically determined using standard methods. Typically, effective concentrations of individual dsRNA agent species in the environment of a cell will be 50 nanomolar or less, 10 nanomolar or less, or compositions in which concentrations of 1 nanomolar or less can be used. In another embodiment, methods utilizing a concentration of 200 picomolar or less, 100 picomolar or less, 50 picomolar or less, 20 picomolar or less, and even a concentration of 10 picomolar or less, 5 picomolar or less, 2 picomolar or less or 1 picomolar or less can be used in many circumstances.

The method can be carried out by addition of the dsRNA agent compositions to an extracellular matrix in which cells can live provided that the dsRNA agent composition is formulated so that a sufficient amount of the dsRNA agent can enter the cell to exert its effect. For example, the method is amenable for use with cells present in a liquid such as a liquid culture or cell growth media, in tissue explants, or in whole organisms, including animals, such as mammals and especially humans.

The level or activity of a MYC RNA can be determined by a suitable method now known in the art or that is later developed. It can be appreciated that the method used to measure a target RNA and/or the expression of a target RNA can depend upon the nature of the target RNA. For example, where the target MYC RNA sequence encodes a protein, the term "expression" can refer to a protein or the MYC RNA/transcript derived from the MYC gene (either genomic or of exogenous origin). In such instances the expression of the target MYC RNA can be determined by measuring the amount of MYC RNA/transcript directly or by measuring the amount of Myc protein. Protein can be measured in protein assays such as by staining or immunoblotting or, if the protein catalyzes a reaction that can be measured, by
measuring reaction rates. All such methods are known in the art and can be used. Where target MYC RNA levels are to be measured, art-recognized methods for detecting RNA levels can be used (e.g., RT-PCR, Northern Blotting, etc.). In targeting MYC RNAs with the dsRNA agents of the instant invention, it is also anticipated that measurement of the efficacy of a dsRNA agent in reducing levels of MYC RNA or protein in a subject, tissue, in cells, either in vitro or in vivo, or in cell extracts can also be used to determine the extent of reduction of MYC-associated phenotypes (e.g., disease or disorders, e.g., cancer or tumor formation, growth, metastasis, spread, etc.). The above measurements can be made on cells, cell extracts, tissues, tissue extracts or other suitable source material.

The determination of whether the expression of a MYC RNA has been reduced can be by a suitable method that can reliably detect changes in RNA levels. Typically, the determination is made by introducing into the environment of a cell undigested dsRNA such that at least a portion of that dsRNA agent enters the cytoplasm, and then measuring the level of the target RNA. The same measurement is made on identical untreated cells and the results obtained from each measurement are compared.

The dsRNA agent can be formulated as a pharmaceutical composition which comprises a pharmacologically effective amount of a dsRNA agent and pharmaceutically acceptable carrier. A pharmacologically or therapeutically effective amount refers to that amount of a dsRNA agent effective to produce the intended pharmacological, therapeutic or preventive result. The phrases "pharmacologically effective amount" and "therapeutically effective amount" or simply "effective amount" refer to that amount of an RNA effective to produce the intended pharmacological, therapeutic or preventive result. For example, if a given clinical treatment is considered effective when there is at least a 20% reduction in a measurable parameter associated with a disease or disorder, a therapeutically effective amount of a drug for the treatment of that disease or disorder is the amount necessary to effect at least a 20% reduction in that parameter.

Suitably formulated pharmaceutical compositions of this invention can be administered by means known in the art such as by parenteral routes, including intravenous, intramuscular, intraperitoneal, subcutaneous, transdermal, airway (aerosol), rectal, vaginal and topical (including buccal and sublingual) administration. In some embodiments, the pharmaceutical compositions are administered by intravenous or intraparentral infusion or injection.

In general, a suitable dosage unit of dsRNA will be in the range of 0.001 to 0.25
milligrams per kilogram body weight of the recipient per day, or in the range of 0.01 to 20 micrograms per kilogram body weight per day, or in the range of 0.001 to 5 micrograms per kilogram of body weight per day, or in the range of 1 to 500 nanograms per kilogram of body weight per day, or in the range of 0.01 to 10 micrograms per kilogram body weight per day, or in the range of 0.10 to 5 micrograms per kilogram body weight per day, or in the range of 0.1 to 2.5 micrograms per kilogram body weight per day. A pharmaceutical composition comprising the dsRNA can be administered once daily. However, the therapeutically agent may also be dosed in dosage units containing two, three, four, five, six or more sub-doses administered at appropriate intervals throughout the day. In that case, the dsRNA contained in each sub-dose must be correspondingly smaller in order to achieve the total daily dosage unit. The dosage unit can also be compounded for a single dose over several days, e.g., using a conventional sustained release formulation which provides sustained and consistent release of the dsRNA over a several day period. Sustained release formulations are well known in the art. In this embodiment, the dosage unit contains a corresponding multiple of the daily dose. Regardless of the formulation, the pharmaceutical composition must contain dsRNA in a quantity sufficient to inhibit expression of the target gene in the animal or human being treated. The composition can be compounded in such a way that the sum of the multiple units of dsRNA together contain a sufficient dose.

Data can be obtained from cell culture assays and animal studies to formulate a suitable dosage range for humans. The dosage of compositions of the invention lies within a range of circulating concentrations that include the ED50 (as determined by known methods) with little or no toxicity. The dosage may vary within this range depending upon the dosage form employed and the route of administration utilized. For a compound used in the method of the invention, the therapeutically effective dose can be estimated initially from cell culture assays. A dose may be formulated in animal models to achieve a circulating plasma concentration range of the compound that includes the IC50 (i.e., the concentration of the test compound which achieves a half-maximal inhibition of symptoms) as determined in cell culture. Such information can be used to more accurately determine useful doses in humans. Levels of dsRNA in plasma may be measured by standard methods, for example, by high performance liquid chromatography.

The pharmaceutical compositions can be included in a kit, container, pack, or dispenser together with instructions for administration.
Methods of Treatment

The present invention provides for both prophylactic and therapeutic methods of treating a subject at risk of (or susceptible to) a disease or disorder caused, in whole or in part, by MYC (e.g., misregulation and/or elevation of MYC transcript and/or Myc protein levels), or treatable via selective targeting of MYC.

"Treatment", or "treating" as used herein, is defined as the application or administration of a therapeutic agent (e.g., a dsRNA agent or 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 the disease or disorder, a symptom of disease or disorder or a predisposition toward a disease or disorder, with the purpose to cure, heal, alleviate, relieve, alter, remedy, ameliorate, improve or affect the disease or disorder, the symptoms of the disease or disorder, or the predisposition toward disease.

In one aspect, the invention provides a method for preventing in a subject, a disease or disorder as described above (including, e.g., prevention of the commencement of transforming events within a subject via inhibition of MYC expression), by administering to the subject a therapeutic agent (e.g., a dsRNA agent or vector or transgene encoding same). Subjects at risk for the disease can be identified by, for example, one or a combination of diagnostic or prognostic assays as described herein. Administration of a prophylactic agent can occur prior to the detection of, e.g., cancer in a subject, or the manifestation of symptoms characteristic of the disease or disorder, such that the disease or disorder is prevented or, alternatively, delayed in its progression.

Another aspect of the invention pertains to methods of treating subjects therapeutically, i.e., altering the onset of symptoms of the disease or disorder. These methods can be performed in vitro (e.g., by culturing the cell with the dsRNA agent) or, alternatively, in vivo (e.g., by administering the dsRNA agent to a subject).

With regards to both prophylactic and therapeutic methods of treatment, such treatments may be specifically tailored or modified, based on knowledge obtained from the field of pharmacogenomics. "Pharmacogenomics", as used herein, refers to the application of genomics technologies such as gene sequencing, statistical genetics, and gene expression analysis to drugs in clinical development and on the market. More specifically, the term refers the study of how a patient's genes determine his or her response to a drug (e.g., a
patient's "drug response phenotype", or "drug response genotype"). Thus, another aspect of the invention provides methods for tailoring an individual's prophylactic or therapeutic treatment with either the target MYC RNA molecules of the present invention or target MYC RNA modulators according to that individual's drug response genotype. Pharmacogenomics allows a clinician or physician to target prophylactic or therapeutic treatments to patients who will most benefit from the treatment and to avoid treatment of patients who will experience toxic drug-related side effects.

Therapeutic agents can be tested in a selected animal model. For example, a dsRNA agent (or expression vector or transgene encoding same) as described herein can be used in an animal model to determine the efficacy, toxicity, or side effects of treatment with said agent. Alternatively, an agent (e.g., a therapeutic agent) can be used in an animal model to determine the mechanism of action of such an agent.

**Models Useful to Evaluate the Down-Regulation of MYC mRNA Levels and Expression**

**Cell Culture**

The dsRNA agents of the invention can be tested for cleavage activity in vivo, for example, using the following procedure. The nucleotide sequences within the MYC cDNA targeted by the dsRNA agents of the invention are shown in the above MYC sequences.

The dsRNA reagents of the invention can be tested in cell culture using A549 or other mammalian cells to determine the extent of MYC RNA and Myc protein inhibition. In certain embodiments, DsiRNA reagents (e.g., see Figure 1, and above-recited structures) are selected against the MYC target as described herein. MYC RNA inhibition is measured after delivery of these reagents by a suitable transfection agent to, for example, cultured A549 cells or other transformed or non-transformed mammalian cells in culture. Relative amounts of target MYC RNA are measured versus actin or other appropriate control using real-time PCR monitoring of amplification (e.g., ABI 7700 TAQMAN®). A comparison is made to the activity of oligonucleotide sequences made to unrelated targets or to a randomized DsiRNA control with the same overall length and chemistry, or simply to appropriate vehicle-treated or untreated controls. Primary and secondary lead reagents are chosen for the target and optimization performed.

**TAQMAN® (Real-Time PCR Monitoring of Amplification) and Lightcycler Quantification of mRNA**
Total RNA is prepared from cells following DsiRNA delivery, for example, using Ambion Rnaqueous 4-PCR purification kit for large scale extractions, or Promega SV96 for 96-well assays. For Taqman analysis, dual-labeled probes are synthesized with, for example, the reporter dyes FAM or VIC covalently linked at the 5'-end and the quencher dye TAMMYCA conjugated to the 3'-end. PCR amplifications are performed on, for example, an ABI PRISM 7700 Sequence detector using 50 uL reactions consisting of 10 uL total RNA, 100 nM forward primer, 100 mM reverse primer, 100 nM probe, 1xTaqMan PCR reaction buffer (PE-Applied Biosystems), 5.5 mM MgC12, 100 uM each dATP, dCTP, dGTP and dTTP, 0.2U RNase Inhibitor (Promega), 0.025U AmpliTaq Gold (PE-Applied Biosystems) and 0.2U M-MLV Reverse Transcriptase (Promega). The thermal cycling conditions can consist of 30 minutes at 48°C, 10 minutes at 95°C, followed by 40 cycles of 15 seconds at 95°C and 1 minute at 60°C. Quantitation of target MYC mRNA level is determined relative to standards generated from serially diluted total cellular RNA (300, 100, 30, 10 ng/rxn) and normalizing to, for example, HPRT1 mRNA in either parallel or same tube TaqMan reactions.

Western Blotting

Cellular protein extracts can be prepared using a standard micro preparation technique (for example using RIPA buffer), or preferably, by extracting nuclear proteins by a method such as the NE-PER Nuclear and Cytoplasmic Extraction kit (Thermo-Fisher Scientific). Cellular protein extracts are run on Tris-Glycine polyacrylamide gel and transferred onto membranes. Non-specific binding can be blocked by incubation, for example, with 5% non-fat milk for 1 hour followed by primary antibody for 16 hours at 4°C. Following washes, the secondary antibody is applied, for example (1:10,000 dilution) for 1 hour at room temperature and the signal detected on a VersaDoc imaging system.

In several cell culture systems, cationic lipids have been shown to enhance the bioavailability of oligonucleotides to cells in culture (Bennet, et al., 1992, Mol. Pharmacology, 41, 1023-1033). In one embodiment, dsRNA molecules of the invention are complexed with cationic lipids for cell culture experiments. dsRNA and cationic lipid mixtures are prepared in serum-free OptimMEM (InVitrogen) immediately prior to addition to the cells. OptiMEM is warmed to room temperature (about 20-25 °C) and cationic lipid is added to the final desired concentration. dsRNA molecules are added to OptiMEM to the desired concentration and the solution is added to the diluted dsRNA and incubated for 15
minutes at room temperature. In dose response experiments, the RNA complex is serially
diluted into OptiMEM prior to addition of the cationic lipid.

Animal Models

The efficacy of anti-MYC dsRNA agents may be evaluated in an animal
model. Animal models of cancer and/or proliferative diseases, conditions, or disorders as are
known in the art can be used for evaluation of the efficacy, potency, toxicity, etc. of anti-
MYC dsRNAs. Suitable animal models of proliferative disease include, e.g., transgenic
rodents (e.g., mice, rats) bearing gain of function proto-oncogenes (e.g., Myc, Src) and/or
loss of function of tumour suppressor proteins (e.g., p53, Rb) or rodents that have been
exposed to radiation or chemical mutagens that induce DNA changes that facilitate neoplastic
transformation. Many such animal models are commercially available, for example, from
The Jackson Laboratory, Bar Harbor, ME, USA. These animal models may be used as a
source cells or tissue for assays of the compositions of the invention. Such models can also
be used or adapted for use for pre-clinical evaluation of the efficacy of dsRNA compositions
of the invention in modulating MYC gene expression toward therapeutic use.

As in cell culture models, the most MYC relevant mouse tumor xenografts are those
derived from cancer cells that express Myc proteins. Xenograft mouse models of cancer
relevant to study of the anti-tumor effect of modulating MYC have been described by various
groups (e.g., Leonetti et al., J. NCI 1996 April; 88: 419; Iversen et al., Clin Cancer Res 2003
July; 9: 2510; Devi et al., Clin Cancer Res 2005 May; 11: 3930; Chen et al., Mol Ther 2010
April; 18:828; Kessler et al., Science 2012 Jan; 335: 348). Use of these models has
demonstrated that inhibition of MYC expression by anti-MYC agents causes inhibition of
tumor growth in animals.

Such models can be used in evaluating the efficacy of dsRNA molecules of the
invention to inhibit MYC levels, expression, tumor/cancer formation, growth, spread,
development of other MYC-associated phenotypes, diseases or disorders, etc. These models
and others can similarly be used to evaluate the safety/toxicity and efficacy of dsRNA
molecules of the invention in a pre-clinical setting.

Specific examples of animal model systems useful for evaluation of the MYC-
targeting dsRNAs of the invention include wild-type mice, and orthotopic or subcutaneous
HT1080, HCT1 16, SW480, SW620, Hep3B, M14, JR8, PLF2, LLC1, LNCaP, PC3,
SUM159, MDAMB-23 1, 22Rv1, 518A2, MHCC97, A549, H1299, HepG2, SNU398, HuH7,
NCI-H196, NCI-H1975, HT29, MKN-45, MDA-MB-231, NCI-H441, Panc-1, MIA PaCa-2, BxPC3, DU-145, M2182, VCaP, OvCar-3, MCF-7, U937, K562, HeLa, T98G, or SHP-77 tumor model mice. In an exemplary in vivo experiment, dsRNAs of the invention are tail vein injected into such mouse models at doses ranging from 1 to 10 mg/kg or, alternatively, repeated doses are administered at single-dose IC\textsubscript{50} levels, and organs (e.g., prostate, liver, kidney, lung, pancreas, colon, skin, spleen, bone marrow, lymph nodes, mammary fat pad, etc.) are harvested 24 hours after administration of the final dose. Such organs are then evaluated for mouse and/or human MYC levels, depending upon the model used. Duration of action can also be examined at, e.g., 1, 4, 7, 14, 21 or more days after final dsRNA administration.


Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. Although methods and materials similar or equivalent to those described herein can be used in the practice or testing of the present invention, suitable methods and materials are described below. All publications, patent applications, patents, and other references mentioned herein are incorporated by reference in their entirety. In case of conflict, the present specification, including definitions, will control. In addition, the materials, methods, and examples are illustrative only and not intended to be limiting.

EXAMPLES

The present invention is described by reference to the following Examples, which are offered by way of illustration and are not intended to limit the invention in any manner. Standard techniques well known in the art or the techniques specifically described below were utilized.

Example 1: Preparation of Double-Stranded RNA Oligonucleotides

Oligonucleotide Synthesis and Purification

DsiRNA molecules can be designed to interact with various sites in the RNA message, for example, target sequences within the RNA sequences described herein. In presently exemplified agents, 327 human target MYC sequences and 144 mouse target MYC sequences were selected for evaluation (183 of the 327 human target MYC sites were predicted to be conserved with corresponding sites in the mouse MYC transcript sequence). The sequences of one strand of the DsiRNA molecules were complementary to the target MYC site sequences described above. The DsiRNA molecules were chemically synthesized using methods described herein. Generally, DsiRNA constructs were synthesized using solid phase oligonucleotide synthesis methods as described for 19-23mer siRNAs (see for example Usman et al, U.S. Pat. Nos. 5,804,683; 5,831,071; 5,998,203; 6,117,657; 6,353,098; 6,362,323; 6,437,117; 6,469,158; Scaringe et al, U.S. Pat. Nos. 6,111,086; 6,008,400; 6,111,086).
Individual RNA strands were synthesized and HPLC purified according to standard methods (Integrated DNA Technologies, Coralville, Iowa). For example, RNA oligonucleotides were synthesized using solid phase phosphoramidite chemistry, deprotected and desalted on NAP-5 columns (Amersham Pharmacia Biotech, Piscataway, N.J.) using standard techniques (Damha and Olvigie, 1993, Methods Mol Biol 20: 81-114; Wincott et al., 1995, Nucleic Acids Res 23: 2677-84). The oligomers were purified using ion-exchange high performance liquid chromatography (IE-HPLC) on an Amersham Source 15Q column (1.0 cm x 25 cm; Amersham Pharmacia Biotech, Piscataway, N.J.) using a 15 min step-linear gradient. The gradient varies from 90:10 Buffers A:B to 52:48 Buffers A:B, where Buffer A is 100 mM Tris pH 8.5 and Buffer B is 100 mM Tris pH 8.5, 1 M NaCl. Samples were monitored at 260 nm and peaks corresponding to the full-length oligonucleotide species are collected, pooled, desalted on NAP-5 columns, and lyophilized.

The purity of each oligomer was determined by capillary electrophoresis (CE) on a Beckman PACE 5000 (Beckman Coulter, Inc., Fullerton, Calif.). The CE capillaries had a 100 µm inner diameter and contains ssDNA 100R Gel (Beckman-Coulter). Typically, about 0.6 nmole of oligonucleotide was injected into a capillary, run in an electric field of 444 V/cm and detected by UV absorbance at 260 nm. Denaturing Tris-Borate-7 M-urea running buffer was purchased from Beckman-Coulter. Oligoribonucleotides were obtained that are at least 90% pure as assessed by CE for use in experiments described below. Compound identity was verified by matrix-assisted laser desorption ionization time-of-flight (MALDI-TOF) mass spectroscopy on a Voyager DE.TM. Biospectometry Work Station (Applied Biosystems, Foster City, Calif.) following the manufacturer's recommended protocol. Relative molecular masses of all oligomers were obtained, often within 0.2% of expected molecular mass.

Preparation of Duplexes

Single-stranded RNA (ssRNA) oligomers were resuspended, e.g., at 100 µM concentration in duplex buffer consisting of 100 mM potassium acetate, 30 mM HEPES, pH 7.5. Complementary sense and antisense strands were mixed in equal molar amounts to yield a final solution of, e.g., 50 µM duplex. Samples were heated to 100°C for 5' in RNA buffer (IDT) and allowed to cool to room temperature before use. Double-stranded RNA (dsRNA) oligomers were stored at -20°C. Single-stranded RNA oligomers were stored lyophilized or in nuclease-free water at -80°C.
Nomenclature

For consistency, the following nomenclature has been employed in the instant specification. Names given to duplexes indicate the length of the oligomers and the presence or absence of overhangs. A "25/27" is an asymmetric duplex having a 25 base sense strand and a 27 base antisense strand with a 2-base 3'-overhang. A "27/25" is an asymmetric duplex having a 27 base sense strand and a 25 base antisense strand.

Cell culture and RNA Transfection

A549 cells were obtained from ATCC and maintained in DMEM (HyClone) supplemented with 10% fetal bovine serum (HyClone) at 37°C under 5% CO₂. Hepa 1-6 cells were obtained from ATCC and maintained in DMEM (HyClone) supplemented with 10% fetal bovine serum (HyClone) at 37°C under 5% CO₂. For RNA transfections, cells were transfected with DsiRNAs as indicated at a final concentration of 1 nM, 0.3 nM or 0.1 nM using Lipofectamine™ RNAiMAX (Invitrogen) and following manufacturer's instructions. Briefly, for 0.1 nM transfections, e.g., of Example 3 below, an aliquot of stock solution of each DsiRNA was mixed with Opti-MEM I (Invitrogen) and Lipofectamine™ RNAiMAX to reach a volume of 150 µL (with 0.3 nM DsiRNA). The resulting 150 µL mix was incubated for 20 min at RT to allow DsiRNA:Lipofectamine™ RNAiMAX complexes to form. Meanwhile, target cells were trypsinized and resuspended in medium. At the end of the 20 min of complexation, 50 µL of the DsiRNA:RNAiMAX mixture was added per well into triplicate wells of 96 well plates. Finally, 100 µL of the cell suspension were added to each well (final volume 150 µL) and plates were placed into the incubator for 24 hours.

Assessment of MYC Inhibition

MYC target gene knockdown was determined by qRT-PCR, with values normalized to HPRT and SFRS9 housekeeping genes, and to transfections with control DsiRNAs and/or mock transfection controls.

RNA isolation and analysis

Media was aspirated, and total RNA was extracted using the SV96 kit (Promega). Total RNA was reverse-transcribed using SuperscriptII, Oligo dT, and random hexamers following manufacturer's instructions. Typically, the resulting cDNA was analyzed by qPCR using primers and probes specific for both the MYC gene and for the human genes HPRT-1 and...
SFRS9. An ABI 7700 was used for the amplification reactions. Each sample was tested in triplicate. Relative MYC RNA levels were normalized to HPRT1 and SFRS9 RNA levels and compared with RNA levels obtained in transfection control samples.

**Example 2: DsiRNA Inhibition of MYC**

DsiRNA molecules targeting MYC were designed and synthesized as described above and tested in human A549 cells or mouse Hepa 1-6 cells for inhibitory efficacy. For transfection, annealed DsiRNAs were mixed with the transfection reagent (Lipofectamine™ RNAiMAX, Invitrogen) and incubated for 20 minutes at room temperature. The A549 (human) or Hepa 1-6 (mouse) cells were trypsinized, resuspended in media, and added to wells (100uL per well) to give a final DsiRNA concentration of 1 nM in a volume of 150 μL. Each DsiRNA transfection mixture was added to 3 wells for triplicate DsiRNA treatments. Cells were incubated at 37°C for 24 hours in the continued presence of the DsiRNA transfection mixture. At 24 hours, RNA was prepared from each well of treated cells. The supernatants with the transfection mixtures were first removed and discarded, then the cells were lysed and RNA prepared from each well. Target MYC RNA levels following treatment were evaluated by qRT-PCR for the MYC target gene, with values normalized to those obtained for controls. Triplicate data was averaged and the % error determined for each treatment. Normalized data were graphed and the reduction of target mRNA by active DsiRNAs in comparison to controls was determined.

MYC targeting DsiRNAs examined for MYC inhibitory efficacy in an initial phase of testing are indicated in Table 8 below. In this example, 471 asymmetric DsiRNAs (tested DsiRNAs possessed a 25/27mer structure) were constructed and tested for MYC inhibitory efficacy in human A549 and mouse Hepa 1-6 cells incubated in the presence of such DsiRNAs at a concentration of 1 nM. The 471 asymmetric DsiRNAs tested in the initial screen included DsiRNAs possessing 2'-0-methyl modified residues as shown in Tables 2 and 4 above, where underlined nucleotide residues indicate 2'-0-methyl modified residues, ribonucleotide residues are shown as UPPER CASE, and deoxyribonucleotide residues are shown as lower case.

Assay of the 471 MYC targeting DsiRNAs in human A549 and mouse Hepa 1-6 cells at 1 nM revealed the following MYC inhibitory efficacies, presented in Tables 9 and 10. MYC levels were determined using qPCR assays positioned at indicated locations within the
MYC transcript (for human A549 cell experiments, three distinct qPCR assays were performed and are indicated as "Hs MYC 514-620" (FAM), "Hs MYC 1227-1347" (MAX) and "Hs MYC 1771-1882" (MAX); for mouse Hepa 1-6 cell experiments, three distinct qPCR assays were performed and are indicated as "Mm MYC 539-663" (FAM), "Mm MYC 1339-1428" (MAX) and "Mm MYC 1971-2062" (MAX).

Table 9: MYC Inhibitory Efficacy of DsiRNAs Assayed at 1 nM in Human A549 Cells and Mouse Hepa 1-6 Cells

<table>
<thead>
<tr>
<th>DsiRNA Name (Human MYC Target Location, NM_002467.4)</th>
<th>Mouse MYC Target Location (NM_010849.4)</th>
<th>Human A549 Cells % Remaining MYC mRNA ± % Error (Assay: Hs MYC 514-620 (FAM))</th>
<th>Human A549 Cells % Remaining MYC mRNA ± % Error (Assay: Hs MYC 1227-1347 (MAX))</th>
<th>Human A549 Cells % Remaining MYC mRNA ± % Error (Assay: Hs MYC 1771-1882 (MAX))</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYC-94</td>
<td>141.4 ± 4.5</td>
<td>155.9 ± 3</td>
<td>97.8 ± 2.6</td>
<td></td>
</tr>
<tr>
<td>MYC-178</td>
<td>78.9 ± 3.6</td>
<td>72 ± 5.2</td>
<td>72.3 ± 2.2</td>
<td></td>
</tr>
<tr>
<td>MYC-365</td>
<td>135.3 ± 8.1</td>
<td>81.2 ± 11.6</td>
<td>86.4 ± 6.3</td>
<td></td>
</tr>
<tr>
<td>MYC-370</td>
<td>64.5 ± 4.7</td>
<td>62.2 ± 12</td>
<td>74.4 ± 1.5</td>
<td></td>
</tr>
<tr>
<td>MYC-376</td>
<td>125.7 ± 6.7</td>
<td>86.6 ± 6</td>
<td>94.1 ± 5.3</td>
<td></td>
</tr>
<tr>
<td>MYC-403</td>
<td>98.2 ± 1.1</td>
<td>65.4 ± 6.5</td>
<td>76.2 ± 2.9</td>
<td></td>
</tr>
<tr>
<td>MYC-409</td>
<td>74.8 ± 5.3</td>
<td>71.1 ± 9.6</td>
<td>67.8 ± 4.2</td>
<td></td>
</tr>
<tr>
<td>MYC-417</td>
<td>120.2 ± 3.3</td>
<td>130.8 ± 2.2</td>
<td>97.2 ± 1.4</td>
<td></td>
</tr>
<tr>
<td>MYC-535</td>
<td>82 ± 7.1</td>
<td>102.9 ± 7.6</td>
<td>92.9 ± 6.1</td>
<td></td>
</tr>
<tr>
<td>MYC-541</td>
<td>55.4 ± 3.2</td>
<td>66 ± 7.5</td>
<td>77.6 ± 4.3</td>
<td></td>
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<tr>
<td>MYC-548</td>
<td>41.7 ± 5.5</td>
<td>70 ± 2.2</td>
<td>71.9 ± 1.2</td>
<td></td>
</tr>
<tr>
<td>MYC-553</td>
<td>58.1 ± 8.5</td>
<td>114.8 ± 11</td>
<td>84.8 ± 9.4</td>
<td></td>
</tr>
<tr>
<td>MYC-562</td>
<td>55.3 ± 6.5</td>
<td>83.6 ± 6.9</td>
<td>83.8 ± 0.9</td>
<td></td>
</tr>
<tr>
<td>MYC-601</td>
<td>33.3 ± 11.6</td>
<td>87.5 ± 12.1</td>
<td>81.6 ± 2.2</td>
<td></td>
</tr>
<tr>
<td>MYC-607</td>
<td>30 ± 6.2</td>
<td>55 ± 8.8</td>
<td>55.5 ± 1.4</td>
<td></td>
</tr>
<tr>
<td>MYC-643</td>
<td>69.1 ± 12.7</td>
<td>87.9 ± 17</td>
<td>79.4 ± 13.1</td>
<td></td>
</tr>
<tr>
<td>MYC-651</td>
<td>59.5 ± 8.9</td>
<td>71.4 ± 10</td>
<td>61.8 ± 4.6</td>
<td></td>
</tr>
<tr>
<td>MYC-676</td>
<td>57.2 ± 5.7</td>
<td>79.3 ± 6.4</td>
<td>89.3 ± 4.9</td>
<td></td>
</tr>
<tr>
<td>MYC-731</td>
<td>74.3 ± 10.9</td>
<td>101.4 ± 12.3</td>
<td>109.5 ± 5.7</td>
<td></td>
</tr>
<tr>
<td>MYC-816</td>
<td>85.9 ± 9.8</td>
<td>87.8 ± 19.8</td>
<td>83.6 ± 2.5</td>
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<tr>
<td>MYC-920</td>
<td>41.2 ± 4.1</td>
<td>61.7 ± 1.8</td>
<td>60.5 ± 2.3</td>
<td></td>
</tr>
<tr>
<td>MYC-949</td>
<td>39.2 ± 7.8</td>
<td>56.5 ± 10.1</td>
<td>70.7 ± 6.2</td>
<td></td>
</tr>
<tr>
<td>MYC-958</td>
<td>63.3 ± 11.8</td>
<td>93.9 ± 16.6</td>
<td>82.5 ± 6.5</td>
<td></td>
</tr>
<tr>
<td>MYC-970</td>
<td>44.8 ± 2.4</td>
<td>52.4 ± 4.6</td>
<td>55.8 ± 5.1</td>
<td></td>
</tr>
<tr>
<td>MYC-987</td>
<td>81.7 ± 7.5</td>
<td>85.4 ± 10.2</td>
<td>79.8 ± 3.1</td>
<td></td>
</tr>
<tr>
<td>MYC-1104</td>
<td>87.3 ± 4.3</td>
<td>119.9 ± 4.1</td>
<td>75.4 ± 11.9</td>
<td></td>
</tr>
<tr>
<td>MYC-1111</td>
<td>49.6 ± 7.5</td>
<td>95.9 ± 6.9</td>
<td>65.3 ± 4.8</td>
<td></td>
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<tr>
<td>MYC-1116</td>
<td>49.3 ± 0.8</td>
<td>65.6 ± 1.9</td>
<td>49.4 ± 4.9</td>
<td></td>
</tr>
<tr>
<td>MYC-1210</td>
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<td>138.6 ± 4.4</td>
<td>87.1 ± 2.6</td>
<td></td>
</tr>
<tr>
<td>MYC-1340</td>
<td>46.5 ± 5.2</td>
<td>52.6 ± 4.2</td>
<td>67 ± 14.7</td>
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<tr>
<td>MYC-1346</td>
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<td>38.1 ± 5.2</td>
<td>73 ± 14.9</td>
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<tr>
<td>MYC-1351</td>
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<td>42.9 ± 9.2</td>
<td>63.1 ± 3.2</td>
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<tr>
<td>MYC-1358</td>
<td>54.2 ± 6.1</td>
<td>61.9 ± 10.6</td>
<td>88.7 ± 2.1</td>
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</tr>
<tr>
<td>MYC-1364</td>
<td>42.3 ± 4.8</td>
<td>39.1 ± 2.5</td>
<td>48.6 ± 5.4</td>
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</tr>
<tr>
<td>MYC-1370</td>
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<td>31.3 ± 5.4</td>
<td>41.4 ± 5.4</td>
<td></td>
</tr>
<tr>
<td>MYC-1376</td>
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<td>57.8 ± 5.2</td>
<td>68.1 ± 0.8</td>
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</tr>
<tr>
<td>MYC-1382</td>
<td>41.7 ± 1.5</td>
<td>33.2 ± 4.3</td>
<td>38.1 ± 1.2</td>
<td></td>
</tr>
<tr>
<td>MYC-1401</td>
<td>72 ± 5.8</td>
<td>71.2 ± 8.7</td>
<td>63.3 ± 5.6</td>
<td></td>
</tr>
<tr>
<td>MYC-1406</td>
<td>118.6 ± 5</td>
<td>138.1 ± 9.3</td>
<td>96.3 ± 5.8</td>
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<tr>
<td>MYC-1411</td>
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<td>78.5 ± 6.8</td>
<td>85.8 ± 2.8</td>
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<tr>
<td>MYC-1416</td>
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<td>77.4 ± 9.6</td>
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<tr>
<td>MYC-1421</td>
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<td>74.4 ± 3.9</td>
<td>74 ± 4.7</td>
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Table 10: MYC Inhibitory Efficacy of DsiRNAs Assayed at 1 nM in Mouse Hepa 1-6 Cells

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<th>Mouse Hepa 1-6 Cells % Remaining MYC mRNA ± % Error (Assays: Mm MYC 539-663 (FAM))</th>
<th>Mouse Hepa 1-6 Cells % Remaining MYC mRNA ± % Error (Assays: Mm MYC 1339-1428 (MAX))</th>
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| MYC-1856 | 1912  | 66.5 ± 4.3 | 86.9 ± 2.9 | 75.2 ± 4.8 |
| MYC-1857 | 1913  | 60.9 ± 5.7 | 68 ± 7.2  | 74.6 ± 2  |
| MYC-2115 | 2195  | 79.7 ± 3.2 | 84.2 ± 1.8 | 54.3 ± 2.7 |
| MYC-2116 | 2196  | 96.7 ± 3.5 | 100.2 ± 3.9 | 77 ± 3  |
| MYC-2193 | 2273  | 101.9 ± 2.4| 112.2 ± 2.8| 92.3 ± 1  |
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| MYC-2195 | 2275  | 140.5 ± 20.6| 175.2 ± 23.4| 74.1 ± 5.9 |
| MYC-2196 | 2276  | 89 ± 2.5   | 133.5 ± 4  | 50.5 ± 3.7 |
| MYC-2197 | 2277  | 79.2 ± 1.7 | 98.3 ± 5   | 56.3 ± 1.7 |
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<td>59.8 ± 2.0</td>
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<td>108.3 ± 6.6</td>
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<td>MYC-m2397</td>
<td>82.9</td>
<td>82.9</td>
<td>86 ± 2.6</td>
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</table>

As shown in above Table 9, 24 of the 327 assayed asymmetric DsIRNA examined in human A549 cells reproducibly showed, on average, greater than 50% reduction of human MYC levels in A549 cells at 1 nM (MYC-607, MYC-1364, MYC-1370, MYC-1382, MYC-1457, MYC-1465, MYC-1698, MYC-1734, MYC-1769, MYC-1779, MYC-1795, MYC-1808, MYC-1823, MYC-1828, MYC-1845, MYC-1855, MYC-1882, MYC-1911, MYC-1931, MYC-2099, MYC-2120, MYC-2306, MYC-1360 and MYC-1468). Significant variability between assays performed in human cells was observed, with 28 different duplexes showing greater than 50% reduction in Myc levels by at least two of three assays performed (MYC-1116, MYC-1346, MYC-1351, MYC-1364, MYC-1370, MYC-1382, MYC-1457, MYC-1465, MYC-1584, MYC-1698, MYC-1734, MYC-1769, MYC-1779, MYC-1795, MYC-1808, MYC-1823, MYC-1828, MYC-1845, MYC-1855, MYC-1882,

Significant variability between assays performed in mouse cells was also observed, with only three different duplexes showing greater than 50% reduction in Myc levels by at least two of three assays performed (MYC-953, MYC-1360 and MYC-2187). Meanwhile, 23 different duplexes exhibited at least 50% reduction in mouse Myc levels by only one assay: MYC-952, MYC-1468, MYC-ml391, MYC-ml396, MYC-m2016, MYC-m2034, MYC-m2039, MYC-m2064, MYC-m2069, MYC-m2110, MYC-m2117, MYC-m2125, MYC-m2131, MYC-m2136, MYC-m2159, MYC-m2166, MYC-m2171, MYC-m2194, MYC-m2200, MYC-m2208, MYC-m2255 and MYC-m2296.

Assay results of Tables 9 and 10 above were also plotted and are shown in Figures 2A to 2H.

Example 3: DsiRNA Inhibition of MYC - Secondary Screen

96 asymmetric DsiRNAs (92 targeting Hs MYC and 4 uniquely targeting Mm MYC) of the above experiment were then examined in a secondary assay ("Phase 2"), with results of such assays presented in histogram form in Figures 3A to 3H. Specifically, the 96 asymmetric DsiRNAs selected from the 327 tested above were assessed for inhibition of human MYC at 1 nM and 0.1 nM in duplicate in the environment of human A549 cells (Figures 3A to 3D). These 96 asymmetric DsiRNAs were also assessed for inhibition of mouse MYC at 1 nM and 0.1 nM in the environment of mouse Hepa 1-6 cells (Figures 3E to 3H). As shown in Figures 3A to 3D, a number of asymmetric DsiRNAs reproducibly exhibited significant human MYC inhibitory efficacies at sub-nanomolar concentrations when assayed in the environment of A549 cells. In addition, as shown in Figures 3E to 3H, a
number of asymmetric DsiRNAs were identified to possess significant mouse MYC inhibitory efficacies at sub-nanomolar concentrations when assayed in the environment of mouse Hepa 1-6 cells. (Notably, DsiRNAs capable of significant MYC inhibition in both species, as well as DsiRNAs capable of either human MYC-specific or mouse MYC-specific inhibition were all identified.)

Example 4: Modified Forms of MYC-Targeting DsiRNAs Reduce MYC Levels In Vitro

24 MYC-targeting DsiRNAs (MYC-607, MYC-622, MYC-953, MYC-1360, MYC-1364, MYC-1370, MYC-1698, MYC-1711, MYC-1712, MYC-1769, MYC-1926, MYC-1931, MYC-1944, MYC-1965, MYC-1981, MYC-2040, MYC-2066, MYC-2099, MYC-2114, MYC-2115, MYC-2120, MYC-2176, MYC-2196 and MYC-2233) were prepared with 2’-0-methyl guide strand modification patterns "M17", "M35", "M48" and "M8" as shown above. For each of the 24 DsiRNA sequences, DsiRNAs possessing each of the four guide strand modification patterns M17, M35, M48 and M8 were assayed for MYC inhibition in human A549 cells at 1.0 nM and 0.1 nM (in duplicate) concentrations in the environment of the A549 cells. Results of these experiments are presented as histograms in Figures 4A-4D. These same duplexes were also assayed in mouse Hepa 1-6 cells, with corresponding results shown in Figures 4E-4H. In general, the 24 DsiRNA sequences exhibited a trend towards reduced efficacy of MYC inhibition as the extent of 2’-0-methyl modification of the guide strand increased. However, for many of the DsiRNA sequences examined, a modification pattern could be identified that allowed the DsiRNA to retain significant MYC inhibitory efficacy in vitro. It was also notable that a number of these DsiRNAs (e.g., MYC-1712, MYC-1931, MYC-1944, MYC-1965, MYC-2066, MYC-2114, MYC-2120 and MYC-2233) exhibited no apparent decline in MYC inhibitory efficacy in even the most highly modified states examined. Thus, such active modified DsiRNA sequences possess modification patterns believed to be capable of stabilizing such DsiRNAs and/or reducing immunogenicity of such DsiRNAs when therapeutically administered to a subject in vivo.

Example 5: Additionally Modified Forms of MYC-Targeting DsiRNAs Reduce MYC Levels In Vitro

19 MYC-targeting DsiRNAs (MYC-622, MYC-953, MYC-1364, MYC-1370, MYC-1698, MYC-1711, MYC-1769, MYC-1926, MYC-1931, MYC-1944, MYC-1965, MYC-2040, MYC-2066, MYC-2099, MYC-2115, MYC-2120, MYC-2176, MYC-2196 and MYC-
2233) were prepared with both 2'-O-methyl passenger strand and guide strand modification patterns. For each of the 19 DsiRNA sequences, DsiRNAs possessing passenger strand modification patterns selected from SM12, SM14, SM24 and SM31 (referred to as simply "M12", "M14", "M24" and "M31" in Figures 5A-5F and 6A-6D, where the passenger strand modification pattern is the first modification pattern listed, followed by the guide strand modification pattern, e.g., "M12-M48" in Figures 5A-5F and 6A-6D indicates a duplex possessing passenger strand modification pattern "SM12" and guide strand modification pattern "M48") and guide strand modification patterns selected from M17, M35, M48 and M8 were assayed for MYC inhibition in human A549 cells at 1.0 nM and 0.1 nM (in duplicate) concentrations in the environment of the A549 cells. Results of these experiments are presented as histograms in Figures 5A-5F. As in Example 4 above, in general, the 19 DsiRNA sequences exhibited a trend towards reduced efficacy of MYC inhibition as the extent of 2'-O-methyl modification of both passenger and guide strands increased. However, for many of the DsiRNA sequences examined, a combination of passenger and guide strand modification patterns could be identified that allowed the DsiRNA to retain significant MYC inhibitory efficacy in vitro. It was also notable that some of these DsiRNAs (e.g., MYC-1769 and MYC-1965) exhibited no apparent decline in MYC inhibitory efficacy in even the most highly modified states examined. Thus, such active modified DsiRNA sequences possess modification patterns believed to be capable of stabilizing such DsiRNAs and/or reducing immunogenicity of such DsiRNAs when therapeutically administered to a subject in vivo.

In certain embodiments, double stranded nucleic acids were selected that target the following sequences in MYC mRNA:

Table 11: MYC mRNA Target Sequences of Select dsRNAs

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<th>Human MYC Duplex Name</th>
<th>Target mRNA Sequence</th>
<th>SEQ ID NO:</th>
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<td>MYC-607</td>
<td>ACGUUAGCUUCACCAACAGGAACUAUG</td>
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<tr>
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### Table 13: Further Select MYC mRNA Target Sequences of dsRNAs

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<td>UCAAAUGCAUGAUCAAAUGCAACCUGA</td>
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<td>MYC-2115</td>
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<td>MYC-2120</td>
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<td>2082</td>
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<td>2086</td>
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<td>MYC-2196</td>
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MYC-953  GGACGACGAGACCUUCAUC  1501
MYC-1364  AGAAGAGGAGGAAGAAUUGAAGGAA  1342
MYC-1370  UGAGGAGAAGAAUUCGGAGUGU  1343
MYC-1698  ACGAGCUAAGACGAGCUU  1368
MYC-1711  GGAGCUUUUUGCCUCUUGU  1587
MYC-1712  GAGCUUUUUGCCUCUUGU  1588
MYC-1769  CAAGGAGUUAACCUUAAAGA  1374
MYC-1926  AGGAGCUUAAACGAGCUU  1397
MYC-1931  AACGAGCUUACUAAACAGAA  1398
MYC-1944  AACGAGCUUAAACGAGCAUA  1400
MYC-1981  UCAAGGAGUUAACAAUGCA  1406
MYC-2040  UAGGCAUAAAGUAACUGCU  1415
MYC-2066  UGAGCUUUGGCAIUAACAGAA  1419
MYC-2099  UACCAUCUUUUUUUUCUUU  1425
MYC-2114  UUCUUUAAACAGAUUUGAUU  1427
MYC-2115  UCUUUAAACAGAUUUGAUUU  1600
MYC-2120  AACAGAUUUGAUUUAAAGAA  1428
MYC-2176  CUCUGUAAAUUGCCAUUAA  1432
MYC-2196  AAUGUAIAUAACUUUAACAA  1605
MYC-2233  CACAGAAUUUCAACUCUGUA  1436
MYC-607  AGGUUAGCUCACCACAACAG  2958
MYC-607  CGUUAGCUCACCACAACAG  2631
MYC-607  GUUAGCUCACCACAACAG  2304
MYC-953  GACGAGCUAAGACGAGCUU  3136
MYC-953  GACGAGCUAAGACGAGCUU  2809
MYC-953  AGCAGACGACCUUCAUA  2482
MYC-1364  AAGAAGAGGAGGAAGAAGGA  2977
MYC-1364  GAAAGAAGAGGAGGAAGAA  2650
MYC-1364  AAGAAGAGGAGGAAGAA  2323
MYC-1370  UGAGGAGAAGAAUUGAUGU  2978
MYC-1370  GAGGAAGAAUUGAUGU  2651
MYC-1370  AGGAAGAAUUGAUGU  2324
MYC-1698  AAGAGCUUAAACGAGCUU  3003
MYC-1698  AAGAGCUUAAACGAGCUU  2676
MYC-1698  AGGAGCUUAAACGAGCUU  2349
MYC-1711  GAGAGCUUAAACGAGCUU  3222
MYC-1711  GAGAGCUUAAACGAGCUU  2895
MYC-1711  AGGAGCUUAAACGAGCUU  2568
MYC-1712  GAGCUUUUUGCCUCUGCU  3223
MYC-1712  AGGCUUUUUGCCUCUGCU  2896
MYC-1712  GCUUUUUGCCUCUGCU  2569
MYC-1769  CAAGGUAUGUAACUUAACAG  3009
MYC-1769  AAGGUAUGUAACUUAACAG  2682
MYC-1769  AGGUAUGUAACUUAACAG  2355
MYC-1926  AGGAAAGCAUGUCCUUCUA  3032
MYC-1926  GAAAACGAGUCCUUCUA  2705
MYC-1926  GAAAACGAGUCCUUCUA  2378
MYC-1931  AAGCAUUCCUACUAAACAGA  3033
MYC-1931  AAGCAUUCCUACUAAACAGA  2706

379
Certain additional selections of MYC mRNA targets included the following:

Table 14: Selected MYC mRNA Target Sequences of dsRNAs

<table>
<thead>
<tr>
<th>Human MYC Duplex Name</th>
<th>Target mRNA Sequence</th>
<th>SEQ ID NO:</th>
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<tbody>
<tr>
<td>MYC-2099</td>
<td>UACCAUCUUUUUUUUUCUAA</td>
<td>2079</td>
</tr>
<tr>
<td>MYC-2176</td>
<td>UCUGUAAAUAUGCCCAUAAA</td>
<td>2086</td>
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<tr>
<td>MYC-2196</td>
<td>AAUGUAAUAACUUAAAAA</td>
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<tr>
<td>MYC-1698</td>
<td>AACGAGCUAAGCGGACUU</td>
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<tr>
<td>MYC-1944</td>
<td>AACGAAUUGUCCUGAGCA</td>
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</table>
Certain further selections of MYC mRNA targets included the following:

### Table 15: Further Selected MYC mRNA Target Sequences of dsRNAs

<table>
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<tr>
<th>Human MYC Duplex Name</th>
<th>Target mRNA Sequence</th>
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<td>MYC-2099</td>
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<td>MYC-2176</td>
<td>CUCUGUAAGCUAAUGCUAAUGCA</td>
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<td>AAUGUAAAUACUUUAUUAA</td>
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Example 6: Target mRNA Mismatch Tolerance of MYC-Targeting DsiRNAs

Whether seven different native MYC mRNA-targeting DsiRNAs (MYC-622, MYC-953, MYC-1364, MYC-1370, MYC-1711, MYC-1769 and MYC-1965) could incorporate mismatches with respect to their target mRNA sequence yet still retain robust inhibitory activity was examined. As shown in Figures 6A-6D, the following DsiRNA duplex sequences (possessing passenger strand-guide strand modification patterns as indicated) were tested for MYC knockdown activity (Bold indicates residues that form mismatches with respect to the target MYC transcript sequence):

**MYC-622 (Native sequence):**

5 'AGGAACUAUGACCUCGACUACGAct-3' (SEQ ID NO: 163)
3 'UGUCCUUGAUACUGGAGCUGAUGCUGA-5' (SEQ ID NO: 490)

**MYC-622_ml:**

5 'AGGAACCAUGACCUCGACUACGAct-3' (SEQ ID NO: 3879)
3 'UGUCCUUGGUACUGGACUGAUGCUGA-5' (SEQ ID NO: 3880)

**MYC-622_m2:**

5 'AGAAACUAUGACCUCGACUACGAct-3' (SEQ ID NO: 3881)
3 'UGUCUUUGAUACUGGAGCUGAUGUUGA-5' (SEQ ID NO: 3882)

**MYC-622_m3:**

5 'AGAAACUAUGACCUCGACUACGAct-3' (SEQ ID NO: 3883)
3 'UGUUCUUUGAUACUGGACUGAUGUGCA-5' (SEQ ID NO: 3884)
MYC-953 (Native sequence):
5 ' -ACGACGAGACCUCUCAUCAAAAACat-3 ' (SEQ ID NO: 193)  
3 ' -CCUCUCUGCUCUGGAAGUUGUUGUA-5 ' (SEQ ID NO: 520)

MYC-953_ml:
5 ' -ACAACGAGACCUUCAUCAAAAACat-3 ' (SEQ ID NO: 3885)  
3 ' -CCUCUCUGCUCUGGAAGUUGUUGUA-5 ' (SEQ ID NO: 3886)

MYC-953_m2:
5 ' -ACGACAAGACCUUCAUCAAAAACat-3 ' (SEQ ID NO: 3887)  
3 ' -CCUCUCUGCUCUGGAAGUUGUUGUA-5 ' (SEQ ID NO: 3888)

MYC-953_m3:
5 ' -ACGACGAGACCUUCAUCAAAAACat-3 ' (SEQ ID NO: 3889)  
3 ' -UCUCUCUGCUCUGGAAGUUGUUGUA-5 ' (SEQ ID NO: 3890)

MYC-1364 (Native sequence):
5 ' -AAGAUGAGGAAGAAAUCGAUGUgt-3 ' (SEQ ID NO: 34)  
3 ' -UCUUCUCUCUCUUCUUGACUCACA-5 ' (SEQ ID NO: 361)

MYC-1364_ml:
5 ' -AAGAUGAAGAAGAAAUCGAUGUgt-3 ' (SEQ ID NO: 3891)  
3 ' -UCUUCUCUCUCUUCUUGACUCACA-5 ' (SEQ ID NO: 3892)

MYC-1364_m2:
5 ' -AAGAUGAGGAAGAAAUCGAUGUgt-3 ' (SEQ ID NO: 3893)  
3 ' -UCUUCUCUCUCUUCUUGACUCACA-5 ' (SEQ ID NO: 3894)

MYC-1364_m3:
5 ' -AAGAUGAGGAAGAAAUCGAUGUgt-3 ' (SEQ ID NO: 3895)  
3 ' -UCUUCUCUCUCUUCUUGACUCACA-5 ' (SEQ ID NO: 3896)

MYC-1364_m4:
5 ' -AAGAUGAGGAAGAAAUCGAUGUgt-3 ' (SEQ ID NO: 3897)  
3 ' -UCUUCUCUCUCUUCUUGACUCACA-5 ' (SEQ ID NO: 3898)
MYC-1370 (Native sequence):

5 ' -AGGAAGAAAUCGAUGUUGUUUCUgt-3 ' (SEQ ID NO: 35)
3 ' -ACUCCUUCUUUAGCUACAACAAAGACA-5 ' (SEQ ID NO: 362)

MYC-1370_ml:

5 ' -AGGAAAAAAUCGAUGUUGUUACUgt-3 ' (SEQ ID NO: 389)
3 ' -ACUUCUUCUUUAGCUACAACAAUGACA- 5 ' (SEQ ID NO: 3900)

MYC-1370_m2:

5 ' -AGGAAAAAAUCGAUGUUGUUACUgt-3 ' (SEQ ID NO: 3901)
3 ' -ACUUCUUCUUUAGCUACAACAAUGACA- 5 ' (SEQ ID NO: 3902)

MYC-1370_m3:

5 ' -AGGAAAAAAUCGAUGUUGUUACUgt-3 ' (SEQ ID NO: 3903)
3 ' -ACUCCUUUUUUGCUACAACAAUGACA- 5 ' (SEQ ID NO: 3904)

MYC-1370_m4:

5 ' -AGGGAAAAAAUCGAUGUUGUUUUCgt-3 ' (SEQ ID NO: 3905)
3 ' -ACUCCUUUUUUGCUACAACAAAGCA- 5 ' (SEQ ID NO: 3906)

MYC-1711 (Native sequence):

5 ' -AGCUUUUUUGCCCUGCGUGACCAga-3 ' (SEQ ID NO: 279)
3 ' -CCUCGAAAAAACGGGACGCACUUGGCU-5 ' (SEQ ID NO: 606)

MYC-1711_ml:

5 ' -AGCUUUUUUGCCCUGCGUGACCAga-3 ' (SEQ ID NO: 3907)
3 ' -CCUCGAAAAAACGGGACGCACUUGGCU-5 ' (SEQ ID NO: 3908)

MYC-1711_m3:

5 ' -AGCUUUUUUGCCCUGCGUGACCAga-3 ' (SEQ ID NO: 3909)
3 ' -CCUCGAAAAAACGGGACGCACUUGGCU-5 ' (SEQ ID NO: 3910)

MYC-1711_m4:

5 ' -AGCUUUUUUGCCCUGCGUGACCAga-3 ' (SEQ ID NO: 3911)
3 ' -CCUCGAAAAAACGGGACGCACUUGGCU-5 ' (SEQ ID NO: 3912)
MYC-1769 (Native sequence):
5 ' -AGGUAGUUAUCCUUAAAAAAGGCCac-3' (SEQ ID NO: 66)
3 ' -GUUCCAUCAUAGGAUUUUUUCGGUG-5' (SEQ ID NO: 393)

MYC-1769_ml:
5 ' -AGGUAGUUAUCCUUAAAAACCCac-3' (SEQ ID NO: 3913)
3 ' -GUUCCAUCAUAGGAUUUUUGGGUG-5' (SEQ ID NO: 3914)

MYC-1769_m2:
5 ' -AGGUAGUUAUCCUUAAAAAGGCCac-3' (SEQ ID NO: 3915)
3 ' -GUUCCAUCAUAGGAUUUUUUCGGUG-5' (SEQ ID NO: 3916)

MYC-1769_m4:
5 ' -AGGUAGUUAUCCUUAAAAAGCCac-3' (SEQ ID NO: 3917)
3 ' -GUUCCAUCAUAGGAUUUUUUCGGUG-5' (SEQ ID NO: 3918)

MYC-1769_m5:
5 ' -AGGCAGUUAUCCUUAAAAAAGCCac-3' (SEQ ID NO: 3919)
3 ' -GUUCCGUCAUAGGAUUUUUUCGGUG-5' (SEQ ID NO: 3920)

MYC-1965 (Native sequence):
5 ' -CCUAUGAACUUGUUUCAAAUGCAtg-3' (SEQ ID NO: 95)
3 ' -GUGGAUACUUGAACAAAGUUUACGUAC-5' (SEQ ID NO: 422)

MYC-1965_ml:
5 ' -CCUAUAAACUUGUUUCAAAUGCAag-3' (SEQ ID NO: 3921)
3 ' -GUGGAUAUUGAACAAGUUUACGUAC-5' (SEQ ID NO: 3922)

MYC-1965_m2:
5 ' -CCUAUGAACUUGUUUCAAAUGCAUg-3' (SEQ ID NO: 3923)
3 ' -CUGGAUACUUGAACAAAGUUUACGAAC-5' (SEQ ID NO: 3924)

MYC-1965_m3:
5 ' -CCUAUGAACUUGUUUCAAAUGCAag-3' (SEQ ID NO: 3925)
As shown in Figures 6A-6D, most of the above duplexes possessing mismatches with respect to target MYC transcript sequences retained MYC knockdown activity. For many, the potency of such knockdown was similar to that observed for native duplex sequences.

Example 7: Further Modification Pattern Assessment of MYC-Targeting DsiRNAs In Vitro

Three MYC-targeting duplex sequences (MYC-622, MYC-953 and MYC-1711) were further examined for robustness of anti-MYC activity while possessing varying modifications of both sense and antisense strands (as described above, also see Figures 7A to 7H for schematics of duplex modification patterns used, and Figures 7I and 7J for schematics of individual sense and antisense strand modification patterns, respectively). As shown in Figures 7K and 7L, a number of highly modified forms of each of the MYC-622, MYC-953 and MYC 1711 duplexes were identified to possess robust inhibitory activity, with many such newly-tested modified duplexes improving upon the level of activity observed for M12-M48-modified duplexes in "Phase 5" (described above). Thus, many highly modified and robustly active MYC duplexes were identified.

Example 8: In Vivo Efficacy of MYC-Targeting DsiRNAs

The ability of certain, active MYC-targeting DsiRNAs to reduce tumor burden within two orthotopic models of human hepatocellular carcinoma (HCC), Hep3B and HepG2, was examined. To perform such experiments, male nude mice were orthotopically implanted with 2x10⁶ Hep3B cells (ATCC) in 50% Matrigel. On day 12 post-implant, serum was collected for human alpha-fetoprotein (AFP) analysis (human AFP is a serum marker indicative of the establishment and progression of HCC tumors, e.g., Hep3B and HepG2 tumors). Animals were randomized and assigned to groups based on AFP levels (n=7/group). Dosing of animals with lipid nanoparticles (LNPs) containing DsiRNAs (here, an LNP formulation named EnCore-2072 was employed) was initiated on day 13. Animals were dosed at 5 mg/kg
iv, tiw x 2 (6 doses total). Animals were sacrificed on 48 hrs after the last dose (day 27 post implant). Tumors were dissected from the liver and weighed. As shown in Figure 8, all MYC-targeting DsiRNAs examined showed significant tumor reduction as compared to untreated subjects. Specifically, indicated modified forms of all tested MYC-targeting DsiRNAs MYC-622, MYC-953, MYC-1364, MYC-1370, MYC-1711 and MYC-1769 exhibited tumor inhibition magnitudes of between 61% and 81% as compared to PBS-treated control subjects. Consistent with these levels of Hep3B tumor reduction, a reduction in AFP levels was also observed (data not shown). Notably, DsiRNAs targeting both human and mouse MYC and DsiRNAs targeting only human MYC showed effective reduction of tumor levels, confirming that the observed effect was attributable to DsiRNA-mediated targeting of human MYC.

The ability of MYC-targeting DsiRNAs to reduce tumor burden in a HepG2 model of HCC was also examined. In these experiments, male nude mice were orthotopically implanted with 3x10^6 HepG2 cells (ATCC) in 50% Matrigel. On day 12 post implant, serum was collected for AFP analysis. Animals were randomized and assigned to groups based on AFP levels (n=15/group). Dosing of animals with lipid nanoparticles (LNP) containing DsiRNAs (here, an LNP formulation named EnCore-2072 was employed) was initiated on day 13. Animals were dosed at 5 mg/kg iv, tiw x 2 (7 doses total). Animals were sacrificed on 48 hrs after the last dose (day 29 post implant). Tumors were dissected from the liver and weighed. As shown in Figure 9, significant reduction of HepG2 tumor burden was observed in mice administered either a β-catenin-targeting DsiRNA (HepG2 is known to be β-catenin-dependent) or a MYC-622 DsiRNA. Here, the extent of tumor reduction was compared to a DsiRNA targeting the HPRT1 housekeeping gene, with such comparison indicating a significant, 39% reduction of tumor burden in MYC-622 DsiRNA-treated mice. Such reduction in tumor levels again correlated with an observed reduction in AFP levels (data not shown).

Thus, treatment of established tumors with MYC-targeting DsiRNAs reduced tumor burden and AFP levels in two different models of liver cancer (here, Hep3B and HepG2 tumors were used as art-recognized models of human HCC).

The in vivo knockdown efficacy of MYC-1711 duplexes was further explored for dose-dependence. In such experiments, mice bearing Hep3B orthotopic liver tumors were dosed intravenously with PBS, or with MYC-1711-M12/M48 DsiRNA formulated in a lipid nanoparticle (LNP2141) at doses of 1, 3, 5, 10 and 15 mg/kg. Two days later, mice were
sacrificed and tumor RNA was isolated and analyzed by qPCR. As shown in Figure 10, MYC mRNA expression was effectively knocked down at all doses, with extent of observed knockdown ranging from approximately 50% at the 1 mg/kg dose to approximately 75% or more at all doses at or above 5 mg/kg. Thus, in vivo dose-dependence of MYC mRNA knockdown was demonstrated for the MYC-1711 duplex.

Duration of MYC-targeting DsiRNA in vivo knockdown of MYC expression was also assessed in mice bearing Hep3B orthotopic liver tumors. Such mice were dosed intravenously with PBS, or with MYC-1711-M12/M48 DsiRNA formulated in a lipid nanoparticle (LNP2141) at doses of 1 and 5 mg/kg. At time points of 48h, 96h and 168h after the single dose, mice were sacrificed and tumor RNA was isolated and analyzed by qPCR. MYC mRNA expression was effectively knocked down for multiple days at both 1 mg/kg and 5 mg/kg doses of the MYC-1711 duplex, with 1 mg/kg doses exhibiting approximately 40% reduction of MYC mRNA levels at 2 days and 4 days, while 5 mg/kg doses exhibited approximately 60% reduction, approximately 50% reduction and approximately 40% reduction of MYC mRNA levels at 2 days, 4 days and 168h, respectively. Thus, MYC-1711 duplexes showed durable knockdown effects in vivo, and the persistence of such effects was also dose-dependent.

In additional experiments, dose-dependence of treatment of Hep3B tumors was observed while progressing from 0.5 mg/kg to 1 mg/kg to 2 mg/kg to 5 mg/kg levels of DsiRNA formulations (Fig. 12). Specifically, mice bearing Hep3B orthotopic liver tumors were dosed intravenously with PBS, or HPRT1-716-M21/M36 or MYC-1711-M12/M48 DsiRNAs formulated in a lipid nanoparticle (LNP2141), at three-times-a-week doses of 0.5 mg/kg, 1 mg/kg, 2 mg/kg or 5 mg/kg (TrW, 7 total dosings), or at 1 mg/kg twice-a-week (BrW, six total). Forty-eight hours after the final dose, mice were sacrificed and tumors were weighed. As shown in Figure 12, tumor growth was significantly inhibited by MYC-1711 DsiRNA at all doses, but not by the HPRT1 DsiRNA. Specifically, 0.5 mg/kg TIW MYC-1711 (M12/M48) was observed to have decreased tumor weight by approximately 35-40%, 1 mg/kg TrW MYC-1711 (M12/M48) was observed to have decreased tumor weight by approximately 55%, 3 mg/kg TrW MYC-1711 (M12/M48) was observed to have decreased tumor weight by approximately 60%, 5 mg/kg TIW MYC-1711 (M12/M48) was observed to have decreased tumor weight by approximately 75-80% and 1 mg/kg BIW MYC-1711 (M12/M48) was observed to have decreased tumor weight by approximately 55% on average.
Thus, anti-tumor efficacy of MYC-targeting duplexes in reducing tumor weight in an in vivo Hep3B orthotopic liver model was observed to be both significant and dose-dependent.

The MYC-1711 duplex was tested for the ability to harbor extensive 2'O-methylation while still retaining MYC knockdown efficacy and/or tumor reduction in vivo. Mice bearing Hep3B orthotopic liver tumors were dosed intravenously with PBS, or with the following MYC-1711 DsiRNAs formulated in lipid nanoparticle (here, LNP2141) at 1 mg/kg (BIW, 5 total dosings): MYC-1711-M12-M48, MYC-1711-M32-M48, MYC-1711-M50-M73 and MYC-1711-M50-M48. Forty-eight hours after the final dose, mice were sacrificed and tumors were weighed. As shown in Figure 13, Hep3B tumor growth was significantly inhibited by all 2'-0-methyl modified MYC-1711 DsiRNAs examined.

The impact upon anti-tumor efficacy of altering the size and frequency of modified MYC-targeting duplexes was examined. Mice bearing Hep3B orthotopic liver tumors were dosed intravenously with PBS, or with HPRT1-716-M21/M36 or MYC-1711-M50/M48 DsiRNAs formulated in lipid nanoparticle (LNP2141) at doses of 1, 3 or 5 mg/kg (3 mg/kg and 5 mg/kg formulations were dosed either twice-a-week (BrW, 5 total dosings) or once-a-week (QW, three total dosings), while the 1 mg/kg formulations were only dosed twice-a-week (BIW)). Forty-eight hours after the final dose, mice were sacrificed and tumors were weighed. As shown in Figure 14, tumor growth was significantly inhibited by MYC-1711 DsiRNA at all doses (**, P<0.01; ***, P<0.001; ****, P<0.0001), but not by the HPRT1 DsiRNA. Thus, low-dose DsiRNA administrations were highly effective at reducing Hep3B tumor size in vivo.

It was also observed that administration of MYC-targeting DsiRNAs to Hep3B tumor bearing mice induced greater reduction of tumor burden than was observed for sorafenib when either agent was administered individually, and that MYC-targeting DsiRNAs were effective inhibitors of tumor burden when both sorafenib and MYC-targeting DsiRNAs were administered in the Hep3B tumor model - indeed such a combination was well-tolerated, with no significant weight loss or reduction in spleen or liver weights observed in such combination therapy-treated mice (data not shown). Administration of MYC-targeting DsiRNAs to Hep3B tumor bearing mice was also confirmed to reduce both MYC transcript and protein levels in such tumors in dose-dependent fashion, as well as levels of LDHA protein (LDHA is downstream of MYC in the MYC signaling pathway). MYC DsiRNAs were also confirmed to have low immunostimulatory potential, as identified in assays for PEG IgM induction, where all MYC-targeting DsiRNAs formulated in LNP formulation.
EnCore 2072 did not induce PEG IgM to any greater extent than PBS-treated animals, while even when formulated in an LNP designed to be immunostimulatory, most MYC-targeting DsiRNAs showed no induction of PEG IgM as compared to mock-treated animals (data not shown). IC50 values were also calculated for MYC-targeting DsiRNAs and were observed to be in the range of 5-50 pM in both Hep3B and Hepal-6 cells.

The ability of MYC-targeting duplexes to reduce the growth of certain non-liver tumors was also examined. In one such experiment, mice bearing subcutaneous HT-29 tumors were dosed intravenously with PBS, or with HPRT1-716-M21/M36 or MYC-621-M12/M12 DsiRNAs formulated in lipid nanoparticle (for these experiments, LNP2163), at 10 mg/kg once a week, for two total DsiRNA dosings. Tumor size was measured during and at the end of the treatment period. As shown in Figure 15, HT-29 (colon cancer model) tumor growth was significantly inhibited by MYC-621 DsiRNA (*, P<0.05), but not by the HPRT1 DsiRNA. In another such experiment, mice bearing subcutaneous MIA PaCa-2 (pancreatic cancer) tumors were dosed intravenously with PBS, or with HPRT1-716-M21/M36 or MYC-621-M12/M12 DsiRNAs in lipid nanoparticle (LNP2163; at 10 mg/kg once a week for three total dosings). Tumor size was measured during and at the end of the treatment period. As shown in Figure 16, tumor growth was significantly inhibited by MYC-621 DsiRNA (***, P<0.001).

Thus, potent DsiRNAs against MYC were identified, with such DsiRNAs possessing picomolar mRNA knockdown activity when transfected into Hep3B cells. Meanwhile, many such DsiRNAs when modified with 2'-O-methyl groups were observed to have low immunostimulatory potential in vivo. Further, LNP-formulated MYC-targeting DsiRNAs were found to be efficacious in in vivo models of human hepatocellular carcinoma (here, Hep3B and HepG2 tumor models), where MYC-targeting DsiRNAs were identified to produce significant tumor reduction of established orthotopic HepG2 and Hep3B tumors. It was also confirmed that knockdown of tumor-derived MYC mRNA was sufficient for antitumor activity, and that such activity was dose-dependent and observed with multiple distinct DsiRNAs, in multiple different types of tumors. In addition, reduced MYC mRNA, Myc protein and downstream LDHA protein levels correlated with such anti-tumor activity. Such treatment was also observed to be well-tolerated in combination with sorafenib. Accordingly, MYC-targeting DsiRNAs exhibited potent in vitro and in vivo MYC mRNA knockdown activity and demonstrated significant anti-tumor activity in the HepG2, Hep3B, HT-29 and MIA PaCa2 orthotopic tumor models. Such results provide a rationale for the
clinical evaluation of DsiRNA molecules against MYC, a traditionally "undruggable" target, in patients with advanced HCC.

Example 9: Indications

The present body of knowledge in MYC research indicates the need for methods to assay MYC activity and for compounds that can regulate MYC expression for research, diagnostic, and therapeutic use. As described herein, the nucleic acid molecules of the present invention can be used in assays to diagnose disease state related to MYC levels. In addition, the nucleic acid molecules can be used to treat disease state related to MYC misregulation, levels, etc.

Particular disorders and disease states that can be associated with MYC expression modulation include, but are not limited to cancer and/or proliferative diseases, conditions, or disorders and other diseases, conditions or disorders that are related to or will respond to the levels of MYC in a cell or tissue, alone or in combination with other therapies, such as other immune cell-related disorders (e.g. inflammatory or autoimmune disorders). Particular degenerative and disease states that are associated with MYC expression modulation include but are not limited to, for example, renal, breast, lung, liver, ovarian, cervical, esophageal, oropharyngeal and pancreatic cancer.

Gemcitabine and cyclophosphamide are non-limiting examples of chemotherapeutic agents that can be combined with or used in conjunction with the nucleic acid molecules (e.g. DsiRNA molecules) of the instant invention. Those skilled in the art will recognize that other drugs such as anti-cancer compounds and therapies can be similarly be readily combined with the nucleic acid molecules of the instant invention (e.g. DsiRNA molecules) and are hence within the scope of the instant invention. Such compounds and therapies are well known in the art (see for example Cancer: Principles and Practice of Oncology, Volumes 1 and 2, eds Devita, V. T., Hellman, S., and Rosenberg, S. A., J.B. Lippincott Company, Philadelphia, USA) and include, without limitations, antifolates; fluoropyrimidines; cytarabine; purine analogs; adenosine analogs; amsacrine; topoisomerase I inhibitors; anthracyrazoles; retinoids; antibiotics such as bleomycin, anthacyclins, mitomycin C, dactinomycin, and mithramycin; hexamethylmelamine; dacarbazine; 1-asperginase; platinum analogs; alkylating agents such as nitrogen mustard, melphalan, chlorambucil, busulfan, ifosfamide, 4-hydroperoxycyclophosphamide, nitrosoureas, thiotepa; plant derived compounds such as
vinea alkaloids, epipodophyllo toxins, taxol; Tamoxifen; radiation therapy; surgery;
nutritional supplements; gene therapy; radiotherapy such as 3D-CRT; immunotoxin therapy
such as ricin, monoclonal antibodies such as Herceptin; other therapeutics such as tarceva,
sorafenib, obatoclax, apogossypolone, and navitoclax, and the like. For combination therapy,
the nucleic acids of the invention are prepared in one of two ways. First, the agents are
physically combined in a preparation of nucleic acid and chemotherapeutic agent, such as a
mixture of a nucleic acid of the invention encapsulated in liposomes and ifosfamide in a
solution for intravenous administration, wherein both agents are present in a therapeutically
effective concentration (e.g., ifosfamide in solution to deliver 1000-1250 mg/m2/day and
liposome-associated nucleic acid of the invention in the same solution to deliver 0.1-100
mg/kg/day). Alternatively, the agents are administered separately but simultaneously or
successively in their respective effective doses (e.g., 1000-1250 mg/m2/d ifosfamide and 0.1
to 100 mg/kg/day nucleic acid of the invention).

Those skilled in the art will recognize that other compounds and therapies used to
treat the diseases and conditions described herein can similarly be combined with the nucleic
acid molecules of the instant invention (e.g. siNA molecules) and are hence within the scope
of the instant invention.

**Example 10: Serum Stability for DsiRNAs**

Serum stability of DsiRNA agents is assessed *via* incubation of DsiRNA agents in
50% fetal bovine serum for various periods of time (up to 24 h) at 37°C. Serum is extracted
and the nucleic acids are separated on a 20% non-denaturing PAGE and can be visualized
with Gelstar stain. Relative levels of protection from nuclease degradation are assessed for
DsiRNAs (optionally with and without modifications).

**Example 11: Use of Additional Cell Culture Models to Evaluate the Down-Regulation of
MYC Gene Expression**

A variety of endpoints have been used in cell culture models to look at MYC-
mediated effects after treatment with anti-MYC agents. Phenotypic endpoints include
inhibition of cell proliferation, RNA expression, and reduction of Myc protein expression.
Because MYC mutations are directly associated with increased growth of certain tumor cells,
a growth endpoint for cell culture assays can be used as a screen. There are several methods
by which this endpoint can be measured. Following treatment of cells with DsiRNA, cells
are allowed to grow (typically 5 days), after which the cell viability, the incorporation of bromodeoxyuridine (BrdU) into cellular DNA and/or the cell density are measured. The assay of cell density can be done in a 96-well format using commercially available fluorescent nucleic acid stains (such as Syto® 13 or CyQuant®). As a secondary, confirmatory endpoint, a DsiRNA-mediated decrease in the level of Myc protein expression can be evaluated using a MYC-specific Western assay. The following are exemplary cell lines for use in such assays (e.g., assays performed as described in Schulze-Bergkamen et al., BMC Cancer 2006, 6:232, for detection of Mcl-1 expression): A549, H1299, HepG2, SNU398, A549, NCI-H196, NCI-H1975, MDA-MB-231, NCI-H441, Panc-1, MIA PaCa, BxPC3, DU-145, VCaP, MCF-7, U937, K562, HeLa, or T98G cells.
Example 12: Evaluation of Anti-MYC DsiRNA Efficacy in Additional Mouse Models of MYC Misregulation

Anti-MYC DsiRNA chosen from *in vitro* assays can be further tested in mouse models, including, *e.g.*, xenograft and other animal models as recited above. As referred to above, exemplary appropriate cell lines for use in xenograft assays include HT1080, HCT116, SW480, SW620, Hep3B, M14, JR8, PLF2, LLC1, LNCaP, PC3, SUM159, MDAMB-231, 22Rv1, 518A2, MHCC97, A549, H1299, HepG2, SNU398, HuH7, NCI-H196, NCI-H1975, HT29, MKN-45, MDA-MB-231, NCI-H441, Panc-1, MIA PaCa-2, BxPC3, DU-145, M2182, VCaP, OvCar-3, MCF-7, U937, K562, HeLa, T98G, or SHP-77. In one example, mice possessing misregulated (*e.g.*, elevated) MYC levels are administered a DsiRNA agent of the present invention *via* hydrodynamic tail vein injection and/or lipid nanoparticle-based delivery modality. 3-4 mice per group (divided based upon specific DsiRNA agent tested) are injected with 50 μg or 200 μg of DsiRNA. Levels of MYC RNA are evaluated using RT-qPCR. Additionally or alternatively, levels of MYC (*e.g.*, Myc protein levels and/or cancer cell/tumor formation, growth or spread) can be evaluated using an art-recognized method, or phenotypes associated with misregulation of MYC (*e.g.*, tumor formation, growth, metastasis, etc.) are monitored (optionally as a proxy for measurement of MYC transcript or Myc protein levels). Active DsiRNA in such animal models can also be subsequently tested in combination with standard chemotherapies.

Example 13: Diagnostic Uses

The DsiRNA molecules of the invention can be used in a variety of diagnostic applications, such as in the identification of molecular targets (*e.g.*, RNA) in a variety of applications, for example, in clinical, industrial, environmental, agricultural and/or research settings. Such diagnostic use of DsiRNA molecules involves utilizing reconstituted RNAi systems, for example, using cellular lysates or partially purified cellular lysates. DsiRNA molecules of this invention can be used as diagnostic tools to examine genetic drift and mutations within diseased cells. The close relationship between DsiRNA activity and the structure of the target MYC RNA allows the detection of mutations in a region of the MYC molecule, which alters the base-pairing and three-dimensional structure of the target MYC RNA. By using multiple DsiRNA molecules described in this invention, one can map nucleotide changes, which are important to RNA structure and function *in vitro*, as well as in
cells and tissues. Cleavage of target MYC RNAs with DsiRNA molecules can be used to inhibit gene expression and define the role of specified gene products in the progression of a MYC-associated disease or disorder. In this manner, other genetic targets can be defined as important mediators of the disease. These experiments will lead to better treatment of the disease progression by affording the possibility of combination therapies (e.g., multiple DsiRNA molecules targeted to different genes, DsiRNA molecules coupled with known small molecule inhibitors, or intermittent treatment with combinations of DsiRNA molecules and/or other chemical or biological molecules). Other in vitro uses of DsiRNA molecules of this invention are well known in the art, and include detection of the presence of RNAs associated with a disease or related condition. Such RNA is detected by determining the presence of a cleavage product after treatment with a DsiRNA using standard methodologies, for example, fluorescence resonance emission transfer (FRET).

In a specific example, DsiRNA molecules that cleave only wild-type or mutant or polymorphic forms of the target MYC RNA are used for the assay. The first DsiRNA molecules (i.e., those that cleave only wild-type forms of target MYC RNA) are used to identify wild-type MYC RNA present in the sample and the second DsiRNA molecules (i.e., those that cleave only mutant or polymorphic forms of target RNA) are used to identify mutant or polymorphic MYC RNA in the sample. As reaction controls, synthetic substrates of both wild-type and mutant or polymorphic MYC RNA are cleaved by both DsiRNA molecules to demonstrate the relative DsiRNA efficiencies in the reactions and the absence of cleavage of the "non-targeted" MYC RNA species. The cleavage products from the synthetic substrates also serve to generate size markers for the analysis of wild-type and mutant MYC RNAs in the sample population. Thus, each analysis requires two DsiRNA molecules, two substrates and one unknown sample, which is combined into six reactions. The presence of cleavage products is determined using an RNase protection assay so that full-length and cleavage fragments of each MYC RNA can be analyzed in one lane of a polyacrylamide gel. It is not absolutely required to quantify the results to gain insight into the expression of mutant or polymorphic MYC RNAs and putative risk of MYC-associated phenotypic changes in target cells. The expression of MYC mRNA whose protein product is implicated in the development of the phenotype (i.e., disease related/associated) is adequate to establish risk. If probes of comparable specific activity are used for both transcripts, then a qualitative comparison of MYC RNA levels is adequate and decreases the cost of the initial diagnosis.
Higher mutant or polymorphic form to wild-type ratios are correlated with higher risk whether MYC RNA levels are compared qualitatively or quantitatively.

All patents and publications mentioned in the specification are indicative of the levels of skill of those skilled in the art to which the invention pertains. All references cited in this disclosure are incorporated by reference to the same extent as if each reference had been incorporated by reference in its entirety individually.

One skilled in the art would readily appreciate that the present invention is well adapted to carry out the objects and obtain the ends and advantages mentioned, as well as those inherent therein. The methods and compositions described herein as presently representative of preferred embodiments are exemplary and are not intended as limitations on the scope of the invention. Changes therein and other uses will occur to those skilled in the art, which are encompassed within the spirit of the invention, are defined by the scope of the claims.

It will be readily apparent to one skilled in the art that varying substitutions and modifications can be made to the invention disclosed herein without departing from the scope and spirit of the invention. Thus, such additional embodiments are within the scope of the present invention and the following claims. The present invention teaches one skilled in the art to test various combinations and/or substitutions of chemical modifications described herein toward generating nucleic acid constructs with improved activity for mediating RNAi activity. Such improved activity can comprise improved stability, improved bioavailability, and/or improved activation of cellular responses mediating RNAi. Therefore, the specific embodiments described herein are not limiting and one skilled in the art can readily appreciate that specific combinations of the modifications described herein can be tested without undue experimentation toward identifying DsRNA molecules with improved RNAi activity.

The invention illustratively described herein suitably can be practiced in the absence of any element or elements, limitation or limitations that are not specifically disclosed herein. Thus, for example, in each instance herein any of the terms "comprising", "consisting essentially of", and "consisting of" may be replaced with either of the other two terms. The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention that in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized
that various modifications are possible within the scope of the invention claimed. Thus, it
should be understood that although the present invention has been specifically disclosed by
preferred embodiments, optional features, modification and variation of the concepts herein
disclosed may be resorted to by those skilled in the art, and that such modifications and
variations are considered to be within the scope of this invention as defined by the description
and the appended claims.

In addition, where features or aspects of the invention are described in terms of
Markush groups or other grouping of alternatives, those skilled in the art will recognize that
the invention is also thereby described in terms of any individual member or subgroup of
members of the Markush group or other group.

The use of the terms "a" and "an" and "the" and similar referents in the context of
describing the invention (especially in the context of the following claims) are to be
construed to cover both the singular and the plural, unless otherwise indicated herein or
clearly contradicted by context. The terms "comprising," "having," "including," and
"containing" are to be construed as open-ended terms (i.e., meaning "including, but not
limited to," ) unless otherwise noted. Recitation of ranges of values herein are merely intended
to serve as a shorthand method of referring individually to each separate value falling within
the range, unless otherwise indicated herein, and each separate value is incorporated into the
specification as if it were individually recited herein. All methods described herein can be
performed in any suitable order unless otherwise indicated herein or otherwise clearly
contradicted by context. The use of any and all examples, or exemplary language (e.g., "such
as" ) provided herein, is intended merely to better illuminate the invention and does not pose a
limitation on the scope of the invention unless otherwise claimed. No language in the
specification should be construed as indicating any non-claimed element as essential to the
practice of the invention.

Embodiments of this invention are described herein, including the best mode known
to the inventors for carrying out the invention. Variations of those embodiments may become
apparent to those of ordinary skill in the art upon reading the foregoing description.

The inventors expect skilled artisans to employ such variations as appropriate, and the
inventors intend for the invention to be practiced otherwise than as specifically described
herein. Accordingly, this invention includes all modifications and equivalents of the subject
matter recited in the claims appended hereto as permitted by applicable law. Moreover, any
combination of the above-described elements in all possible variations thereof is
encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context. Those skilled in the art will recognize, or be able to ascertain using no more than routine experimentation, many equivalents to the specific embodiments of the invention described herein. Such equivalents are intended to be encompassed by the following claims.
We claim:

1. An isolated nucleic acid comprising an oligonucleotide strand of 15-35 nucleotides in length, wherein said oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence selected from Table 15 along at least 15 nucleotides of said oligonucleotide strand length to reduce MYC target mRNA expression when said nucleic acid is introduced into a mammalian cell.

2. An isolated nucleic acid comprising an oligonucleotide strand of 19-35 nucleotides in length, wherein said oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence selected from Table 14 along at least 19 nucleotides of said oligonucleotide strand length to reduce MYC target mRNA expression when said nucleic acid is introduced into a mammalian cell.

3. An isolated double stranded nucleic acid (dsNA) comprising first and second nucleic acid strands comprising RNA, wherein said first strand is 15-35 nucleotides in length and said second strand of said dsNA is 19-35 nucleotides in length, wherein said second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence selected from Table 15 along at least 15 nucleotides of said second oligonucleotide strand length to reduce MYC target mRNA expression when said double stranded nucleic acid is introduced into a mammalian cell.

4. An isolated double stranded nucleic acid (dsNA) comprising first and second nucleic acid strands, wherein said first strand is 15-35 nucleotides in length and said second strand of said dsNA is 19-35 nucleotides in length, wherein said second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence selected from Table 14 along at least 19 nucleotides of said second oligonucleotide strand length to reduce MYC target mRNA expression when said double stranded nucleic acid is introduced into a mammalian cell.

5. An isolated double stranded nucleic acid (dsNA) comprising first and second nucleic acid strands, wherein said first strand is 15-35 nucleotides in length and said second strand of
said dsNA is 19-35 nucleotides in length, wherein said second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence selected from Table 13 along at least 19 nucleotides of said second oligonucleotide strand length to reduce MYC target mRNA expression, and wherein, starting from the 5’ end of the MYC mRNA sequence selected from Table 13 (position 1), mammalian Ago2 cleaves said mRNA at a site between positions 9 and 10 of said sequence, when said double stranded nucleic acid is introduced into a mammalian cell.

6. An isolated dsNA molecule, consisting of: (a) a sense region and an antisense region, wherein said sense region and said antisense region together form a duplex region consisting of 25-35 base pairs and said antisense region comprises a sequence that is the complement of a sequence selected from Table 12; and (b) from zero to two 3’ overhang regions, wherein each overhang region is six or fewer nucleotides in length, and wherein, starting from the 5’ end of the MYC mRNA sequence selected from Table 11 (position 1), mammalian Ago2 cleaves said mRNA at a site between positions 9 and 10 of said sequence, when said double stranded nucleic acid is introduced into a mammalian cell.

7. 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 said first strand is 25-34 nucleotides in length and said second strand of said dsNA is 26-35 nucleotides in length and comprises 1-5 single-stranded nucleotides at its 3’ terminus, wherein said second oligonucleotide strand is sufficiently complementary to a target MYC mRNA sequence selected from Table 11 along at least 19 nucleotides of said second oligonucleotide strand length to reduce MYC target gene expression when said double stranded nucleic acid is introduced into a mammalian cell.

8. 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 said first strand is 25-34 nucleotides in length and said second strand of said dsNA is 26-35 nucleotides in length and comprises 1-5 single-stranded nucleotides at its 3’ terminus, wherein the 3’ terminus of said first oligonucleotide strand and the 5’ terminus of said second oligonucleotide strand form a blunt end, and said second oligonucleotide strand is sufficiently complementary to a target MYC sequence selected from the group consisting of SEQ ID NOs: 1309-1635 and 1963-
3270 along at least 19 nucleotides of said second oligonucleotide strand length to reduce MYC mRNA expression when said double stranded nucleic acid is introduced into a mammalian cell.

9. The isolated dsNA of any of claims 3-5 comprising a duplex region selected from the group consisting of at least 25 base pairs; 19-21 base pairs and 21-25 base pairs.

10. The isolated dsNA of any of claims 3-6, wherein said second oligonucleotide strand comprises 1-5 single-stranded nucleotides at its 3’ terminus.

11. The isolated dsNA of any of claims 3-6, wherein said first strand is 25-35 nucleotides in length.

12. The isolated dsNA of any of claims 3-6, wherein said second strand is 25-35 nucleotides in length.

13. The isolated dsNA of any of claims 3-12, wherein said second oligonucleotide strand is complementary to a target MYC cDNA sequence selected from the group consisting of GenBank Accession Nos. NM_002467.4 and NM_010849.4 along at most 27 nucleotides of said second oligonucleotide strand length.

14. The isolated dsNA of any of claims 3-12, wherein 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.

15. The isolated dsNA of any of claims 3-12, wherein said 3’ terminus of said first strand and said 5’ terminus of said second strand form a blunt end.

16. The isolated dsNA of any of claims 3-12, wherein said first strand is 25 nucleotides in length and said second strand is 27 nucleotides in length.

17. The isolated dsNA of any of claims 3-4 or 6-16, wherein, starting from the 5’ end of a MYC mRNA sequence selected from Table 10 (position 1), mammalian Ago2 cleaves said
mRNA at a site between positions 9 and 10 of said sequence, thereby reducing MYC target mRNA expression when said double stranded nucleic acid is introduced into a mammalian cell.

18. The isolated dsNA of any of claims 8-17, wherein, starting from the 5' end of the MYC mRNA sequence selected from SEQ ID NOs: 1309-1635 and 1963-2289, mammalian Ago2 cleaves said mRNA at a site between positions 9 and 10 of said mRNA sequence, thereby reducing MYC target mRNA expression when said double stranded nucleic acid is introduced into a mammalian cell.

19. The isolated dsNA of any of claims 3-18, wherein said second strand comprises a sequence selected from the group consisting of SEQ ID NOs: 328-654.

20. The isolated dsNA of any of claims 3-19, wherein said first strand comprises a sequence selected from the group consisting of SEQ ID NOs: 1-327, 982-1308 and 1636-1962.

21. The isolated dsNA of any of claims 3-20 comprising a pair of first strand/second strand sequences selected from Table 2.

22. The isolated dsNA of any of claims 3-21, wherein each of said first and said second strands has a length which is at least 26 nucleotides.

23. The isolated dsNA of claim 14, wherein said modified nucleotide residue of said 3' terminus of said first strand is selected from the group consisting of a deoxyribonucleotide, an acyclonucleotide and a fluorescent molecule.

24. The isolated dsNA of claim 23, wherein position 1 of said 3' terminus of the first oligonucleotide strand is a deoxyribonucleotide.

25. The isolated dsNA of claim 6, 7 or 10, wherein said nucleotides of said 1-5 single-stranded nucleotides of said 3' terminus of said second strand comprise a modified nucleotide.
26. The isolated dsNA of claim 25, wherein said modified nucleotide of said 1-5 single-stranded nucleotides of said 3’ terminus of said second strand is a 2’-0-methyl ribonucleotide.

27. The isolated dsNA of claim 25 or 26, wherein all nucleotides of said 1-5 single-stranded nucleotides of said 3’ terminus of said second strand are modified nucleotides.

28. The isolated dsNA of any of claims 3-27, wherein said dsNA comprises a modified nucleotide.

29. The isolated dsNA of claim 28, wherein said modified nucleotide residue is selected from the group consisting of 2’-0-methyl, 2’-methoxyethoxy, 2’-fluoro, 2’-allyl, 2’-0-[2-(methylamino)-2-oxoethyl], 4’-thio, 4’-CH2-0-2’-bridge, 4’-(CH2)2-0-2’-bridge, 2’-LNA, 2’-amino and 2’-0-(N-methylcarbamate).

30. The isolated dsNA of claim 6, 7 or 10, wherein said 1-5 single-stranded nucleotides of said 3’ terminus of said second strand are 1-3 nucleotides in length.

31. The isolated dsNA of claim 6, 7 or 10, wherein said 1-5 single-stranded nucleotides of said 3’ terminus of said second strand are 1-2 nucleotides in length.

32. The isolated dsNA of claim 6, 7 or 10, wherein said 1-5 single-stranded nucleotides of said 3’ terminus of said second strand is two nucleotides in length and comprises a 2’-0-methyl modified ribonucleotide.

33. The isolated dsNA of any of claims 3-32, wherein said second oligonucleotide strand comprises a modification pattern selected from the group consisting of AS-M1 to AS-M73 and AS-M1* to AS-M73*.

34. The isolated dsNA of any of claims 3-33, wherein said first oligonucleotide strand comprises a modification pattern selected from the group consisting of SMI to SM52.
35. The isolated dsNA of any of claims 3-34, wherein each of said first and said second strands has a length which is at least 26 and at most 30 nucleotides.

36. The isolated dsNA of any of claims 3-35, wherein said dsNA is cleaved endogenously in said cell by Dicer.

37. The isolated dsNA of any of the preceding claims, wherein the amount of said isolated nucleic acid sufficient to reduce expression of the target gene is selected from the group consisting 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 and 1 picomolar or less in the environment of said cell.

38. The isolated dsNA of any of claims 6-37, wherein said isolated dsNA possesses greater potency than an isolated 21mer siRNA directed to the identical at least 19 nucleotides of said target MYC mRNA in reducing target MYC mRNA expression when assayed in vitro in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less.

39. The isolated dsNA of any of claims 3-38, wherein said isolated dsNA is sufficiently complementary to the target MYC mRNA sequence to reduce MYC target mRNA expression by an amount (expressed by %) selected from the group consisting of at least 10%, at least 50%, at least 80-90%, at least 95%, at least 98%, and at least 99% when said double stranded nucleic acid is introduced into a mammalian cell.

40. The isolated dsNA of any of claims 3-39, wherein the first and second strands are joined by a chemical linker.

41. The isolated double stranded nucleic acid of any of claims 3-40, wherein said 3’ terminus of said first strand and said 5’ terminus of said second strand are joined by a chemical linker.
42. The isolated double stranded nucleic acid of any of claims 3-41, wherein a nucleotide of said second or first strand is substituted with a modified nucleotide that directs the orientation of Dicer cleavage.

43. The isolated nucleic acid of any of the preceding claims comprising a modified nucleotide selected from the group consisting of a deoxyribonucleotide, a dideoxyribonucleotide, an acyclonucleotide, a 3'-deoxyadenosine (cordycepin), a 3'-azido-3'-deoxythymidine (AZT), a 2',3'-dideoxyinosine (ddl), 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'-0-alkyl ribonucleotide, a 2'-0-methyl ribonucleotide, a 2'-amino ribonucleotide, a 2'-fluoro ribonucleotide, and a locked nucleic acid.

44. The isolated nucleic acid of any of the preceding claims comprising a phosphate backbone modification selected from the group consisting of a phosphonate, a phosphorothioate and a phosphotriester.

45. The isolated nucleic acid of any of the preceding claims comprising a modification selected from the group consisting of a morpholino nucleic acid and a peptide nucleic acid (PNA).

46. A method for reducing expression of a target MYC gene in a mammalian cell comprising contacting a mammalian cell in vitro with an isolated dsNA of any of claims 3-45 in an amount sufficient to reduce expression of a target MYC mRNA in said cell.

47. The method of claim 46, wherein target MYC mRNA expression is reduced by an amount (expressed by %) selected from the group consisting of at least 10%, at least 50% and at least 80-90%.

48. The method of claim 46 or 47, wherein MYC mRNA levels are reduced by an amount (expressed by %) of at least 90% at least 8 days after said cell is contacted with said dsNA.
49. The method of any of claims 46-48, wherein MYC mRNA levels are reduced by an amount (expressed by %) of at least 70% at least 10 days after said cell is contacted with said dsNA.

50. A method for reducing expression of a target MYC mRNA in a mammal comprising administering an isolated nucleic acid of any of claims 1-45 to a mammal in an amount sufficient to reduce expression of a target MYC mRNA in the mammal.

51. A method for reducing tumor burden in a mammal comprising administering an isolated nucleic acid of any of claims 1-45 to a mammal in an amount sufficient to reduce tumor burden in said mammal.

52. The method of claim 51, wherein said tumor is a hepatocellular carcinoma.

53. The method of claim 51, wherein said tumor burden is reduced by 50-80%, as compared to a suitable control.

54. The method of claim 51, wherein said isolated nucleic acid is formulated in a lipid nanoparticle (LNP).

55. The method of any of claims claim 50-54, wherein said isolated nucleic acid is administered at a dosage selected from the group consisting of 1 microgram to 5 milligrams per kilogram of said 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, and 0.1 to 2.5 micrograms per kilogram.

56. The method of any of claims 50-55, wherein said isolated nucleic acid possesses greater potency than isolated 21mer siRNAs directed to the identical at least 19 nucleotides of said target MYC mRNA in reducing target MYC mRNA expression when assayed in vitro in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less.
57. The method of any of claims 50-56, wherein MYC mRNA levels are reduced in a tissue of said mammal by an amount (expressed by %) of at least 70% at least 3 days after said isolated dsNA is administered to said mammal.

58. The method claim 57, wherein said tissue is liver tissue.

59. The method of any of claims 50-58, wherein said administering step comprises a mode selected from the group consisting of intravenous injection, intramuscular injection, intraperitoneal injection, infusion, subcutaneous injection, transdermal, aerosol, rectal, vaginal, topical, oral and inhaled delivery.

60. A method for selectively inhibiting the growth of a cell comprising contacting a cell with an amount of an isolated nucleic acid of any of claims 1-45 sufficient to inhibit the growth of the cell.

61. The method of claim 60, wherein said cell is a tumor cell of a subject.

62. The method of claims 60 or 61, wherein said cell is a tumor cell in vitro.

63. The method of any of claims 60-62, wherein said cell is a human cell.

64. A formulation comprising the isolated nucleic acid of any of claims 1-45, wherein said nucleic acid is present in an amount effective to reduce target MYC mRNA levels when said nucleic acid is introduced into a mammalian cell in vitro by an amount (expressed by %) selected from the group consisting of at least 10%, at least 50% and at least 80-90%.

65. The formulation of claim 64, wherein said effective amount is selected from the group consisting 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 and 1 picomolar or less in the environment of said cell.

66. A formulation comprising the isolated dsNA of any of claims 6-45, wherein said dsNA is present in an amount effective to reduce target MYC mRNA levels when said dsNA
is introduced into a cell of a mammalian subject by an amount (expressed by %) selected from the group consisting of at least 10%, at least 50% and at least 80-90%.

67. The formulation of claim 66, wherein said effective amount is a dosage selected from the group consisting of 1 microgram to 5 milligrams per kilogram of said 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, and 0.1 to 2.5 micrograms per kilogram.

68. The formulation of any of claims 64-67, wherein said dsNA possesses greater potency than an isolated 21mer siRNA directed to the identical at least 19 nucleotides of said target MYC mRNA in reducing target MYC mRNA levels when assayed \textit{in vitro} in a mammalian cell at an effective concentration in the environment of a cell of 1 nanomolar or less.

69. A mammalian cell containing the isolated nucleic acid of any of claims 1-45.

70. A pharmaceutical composition comprising the isolated nucleic acid of any of claims 1-45 and a pharmaceutically acceptable carrier.

71. A kit comprising the isolated nucleic acid of any of claims 1-45 and instructions for its use.

72. A method for treating or preventing a MYC-associated disease or disorder in a subject comprising administering the isolated nucleic acid of any of claims 1-45 and a pharmaceutically acceptable carrier to the subject in an amount sufficient to treat or prevent said MYC-associated disease or disorder in said subject, thereby treating or preventing said MYC-associated disease or disorder in said subject.

73. The method of claim 72, wherein said MYC-associated disease or disorder is selected from the group consisting of liver, renal, breast, lung, ovarian, cervical, esophageal, oropharyngeal and pancreatic cancer.
74. The method of claim 73, wherein said MYC-associated disease or disorder is hepatocellular carcinoma.

75. A composition possessing MYC inhibitory activity consisting essentially of an isolated nucleic acid of any of claims 1-45.
FIG. 2A

DsiRNA-mediated Knockdown of Myc (Hs Unique) in Human A549 Cells, Primary Screen
Human Myc-specific DsiRNAs
Normalized to HPRT and SFRS9; vs NC1, NC5, NC7

% mRNA Remaining

DsiRNA Location (Hs NM_002467.4)

- Hs MYC 514-620 (FAM)
- Hs MYC 1227-1347 (MAX)
- Hs Myc 1771-1882 (MAX)
FIG. 2B

DsRNA-mediated Knockdown of Myc (Hs Unique) in Human A549 Cells. Primary Screen

Normalized to HPRT and SFRS9 vs NC1, NC5, NC7

% mRNA Remaining

0 10 20 30 40 50 60 70 80 90 100

120 150 200 2500

DsRNA Location (Hs NM_002467.4)
FIG. 2C
DsiRNA-mediated Knockdown of Myc (Hs-Mm Conserved) in Human A549 Cells, Primary Screen
Human-Mouse Conserved Myc-targeting DsiRNAs
Normalized to HPRT and SFRS9; vs NC1, NC5, NC7
FIG. 2D

DsiRNA-mediated Knockdown of Myc (Hs-Mm Conserved) in Human A549 Cells, Primary Screen Human-Mouse Conserved Myc-targeting DsiRNAs Normalized to HPRT and SFRS9. vs NC1, NC5, NC7

DsiRNA Location (Hs NM_002467.4)

Percentage of Remaining mRNA

Hs MYC

Hs MYC

Hs MYC

Hs MYC

Hs MYC

Hs MYC

Hs MYC

5' UTR

3' UTR

CDS
FIG. 2E
DsiRNA-mediated Knockdown of Myc (Mm Unique) in Mouse Hepa 1-6 Cells, Primary Screen
Mouse Myc-specific DsiRNAs
Normalized to HPRT and RPL23; vs NC1, NC5, NC7

% mRNA Remaining

DsiRNA Location (Hs NM_010849.4)

- Mm MYC 539-663 (FAM)
- Mm MYC 1339-1428 (MAX)
- Mm Myc 1971-2062 (MAX)
FIG. 2F
DsiRNA-mediated Knockdown of Myc (Mm Unique) in Mouse Hepa 1-6 Cells, Primary Screen
Mouse Myc-specific DsiRNAs
Normalized to HPRT and RPL23; vs NC1, NC5, NC7

% mRNA Remaining

Mm NM_010849.4 Gene Location
DsiRNA-mediated Knockdown of Myc (Hs-Mm Conserved) in Mouse Hepa 1-6 Cells, Primary Screen
Human-Mouse Conserved Myc-targeting DsiRNAs
Normalized to HPRT and RPL23; vs NC1, NC5, NC7

FIG. 2G

% mRNA Remaining

[scale]

siRNA (Mm NM_010849.4 Location)

Mm MYC 539-663 (FAM)
Mm MYC 1339-1428 (MAX)
Mm Myc 1971-2062 (MAX)
Human Mgc mRNA Knockdown - Human (A549) Cells – Phase 2
Normalized to HPRT and SFRS9; vs NC1, NC5, NC7

Assay

% mRNA Remaining

HS Mgc

120 100 80 60 40 20 0

120 100 80 60 40 20 0

HS Mgc

127.1 - 134.4 (Max)

514.4 - 620 (FAM)
FIG. 3D-1

Human Myc mRNA Knockdown - Human (A549) Cells – Phase 2
Normalized to HPRT and SFRS9; vs NC1, NC5, NC7

Key: □ P1, P2 at 1nM
■ P2 at 0.1nM
FIG. 3E-1

Mouse Myc mRNA Knockdown - Mouse (Hepa1-6) Cells – Phase 2
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7

Key: □ P1, P2 at 1nM
■ P2 at 0.1nM
FIG. 4F-1

Mouse Myc mRNA Knockdown - Mouse (Hepa1-6) Cells – Phase 3
Normalized to HPRT and Rpl23; vs NC1, NC5, NC7

Key:
- P1 at 1nM
- P3 at 1nM
- P3 at 0.1nM
FIG. 6D-1

Human Myc mRNA Knockdown - Human (A549) Cells – Phase 5
Normalized to HPRT and SFRS9; vs NC1, NC5, NC7

Key:
- P4 at 1nM (Native)
- P5 at 1nM
- P5 at 0.1nM

Assay

Hs MYC
514-620 (FAM) % mRNA Remaining

Hs MYC
1227-1347 (MAX) % mRNA Remaining

Substitute sheet (Rule 29)
FIG 7D

[Diagram showing RNA and DNA sequences with annotations for 2'O-Me, RNA, DNA, Ago2 site, and Dicer site.]
FIG. 7L-1

Human Myc mRNA Knockdown - Human (A549) Cells - 2'Ome Screen
Normalized to HPRT and SFRS9; vs NC1, NC5, NC7
Hs MYC 514-620 (FAM) Assay

Key:
- P5 at 1nM (M12-M48)
- 2'Ome Screen at 1nM
- 2'Ome Screen at 0.1nM
FIG. 8

Tumor Weight (g)

% inhibition

PBS
622 M12/M12
622 M12/M48
935 M12/M48
1364 M12/M48
1370 M14/M8
1711 M12/M48
1769 M12/M48

EnCore 2072-MYC, 5 mg/kg tiw x 2
FIG. 15

Tumor Volume (mm³)

Days post implantation

Final Tumor Volume

Tumor Volume (mm³)

PBS   HPRT1 21/36   MYC-621-M12/M12

0 200 400 600 800

*
A. CLASSIFICATION OF SUBJECT MATTER
C12N 15/113(2010.01)i, C12N 15/63(2006.01)i, A61K 48/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
C12N 15/1; C07H 21/04; C07H 21/02; C12N 5/02; A61K 31/708; C12N 15/63; A61K 48/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: dsiRNA, Myc, target mRNA, inhibit, antisense strand, sense strand

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>Y</td>
<td>US 8124752 B2 (BUMCROT, DAVID et al.) 28 February 2012 See abstract; Table 2; and colms. 3-4, 9 and 11.</td>
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<tr>
<td>Y</td>
<td>NCBI, GenBank accession no. NM_002467.4 (29 July 2012) See the whole document.</td>
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<td>A</td>
<td>US 2010-0055782 A1 (QUAY, STEVEN C. et al.) 04 March 2010 See the whole document.</td>
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<td>US 2010-0093835 A1 (MCSKIGGEN, JAMES et al.) 15 April 2010 See the whole document.</td>
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<td>A</td>
<td>KOVANCIILAR, MGE et al., 'Testing the putative effect of dicer-substrate siRNAs in regulating gene expression at transcriptional level', Turkish Journal of Biology, 2011, Vol. 35, No. 4, pp. 399-404 See the whole document.</td>
<td>1-12</td>
</tr>
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</table>

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
  "O" document referring to an oral disclosure, use, exhibition or other means
  "P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search 25 November 2013 (25.11.2013)

Date of mailing of the international search report 27 November 2013 (27.11.2013)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea
Facsimile No. +82-42-472-7140

Authorized officer

HEO, Joo Hyung
Telephone No. +82-42-481-8150

Form PCT/ISA/210 (second sheet) (July 2009)
<table>
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<th>Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item l.c of the first sheet)</th>
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<td>a. a sequence listing filed or furnished</td>
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<td>- on paper</td>
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<td>- in electronic form</td>
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<td>b. time of filing or furnishing</td>
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<td>- contained in the international application as filed</td>
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<td>- filed together with the international application in electronic form</td>
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<td>- furnished subsequently to this Authority for the purposes of search</td>
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<td>2. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</td>
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<td>3. Additional comments:</td>
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### Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. **✗** Claims Nos.: 50-61,63,72-74
   because they relate to subject matter not required to be searched by this Authority, namely:
   Claims 50-61, 63 and 72-74 pertain to methods for treatment of the human body by therapy practiced on the human body, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.

2. **✗** Claims Nos.: 23-24,26,29,47,52-54,58,61,65,67,73-74
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
   Claims 23-24,26,29,47,52-54,58,61,65,67 and 73-74 are unclear since they are referring to the multiple dependent claims which do not comply with PCT Rule 6.4(a).

   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. □ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  

#### Remark on Protest

□ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

□ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

□ No protest accompanied the payment of additional search fees.
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<td>21/01/2010</td>
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<td></td>
<td>WO 2008-008719 A2</td>
<td>17/01/2008</td>
</tr>
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<td>US 2010-0055782 Al</td>
<td>04/03/2010</td>
<td>CA 2679244 Al</td>
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<td>12/09/2008</td>
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<td>17/06/2010</td>
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<td>EP 2126080 A2</td>
<td>02/12/2009</td>
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<td>US 2009-0272892 Al</td>
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| US 2010-0093835 Al                    | 15/04/2010      |                         |                 |

<p>| AU 1995--10973 B2                     | 29/04/1999      |                         |                 |
| AU 1995--18214 B2                     | 17/06/1999      |                         |                 |
| AU 1998--60255 B2                     | 30/05/2002      |                         |                 |
| AU 1998--67085 B2                     | 08/03/2001      |                         |                 |
| AU 1999--36657 Al                     | 16/11/1999      |                         |                 |
| AU 1999--36657 B2                     | 30/01/2003      |                         |                 |
| AU 1999--38724 Al                     | 16/11/1999      |                         |                 |
| AU 1999--38724 B2                     | 15/08/2002      |                         |                 |
| AU 1999--48760 Al                     | 04/11/1999      |                         |                 |
| AU 1999--48760 B2                     | 21/02/2002      |                         |                 |
| AU 2000--74733 Al                     | 26/03/2001      |                         |                 |
| AU 2001--38111 Al                     | 20/08/2001      |                         |                 |
| AU 2001--43454 Al                     | 17/09/2001      |                         |                 |
| AU 2002--305729 A8                    | 09/12/2002      |                         |                 |
| AU 2002--307099 A8                    | 21/10/2002      |                         |                 |
| AU 2002--316135 B2                    | 08/01/2009      |                         |                 |
| AU 2002--344237 B8                    | 06/11/2008      |                         |                 |
| AU 2002--367785 Al                    | 03/11/2003      |                         |                 |
| AU 2003--207708 Al                    | 09/09/2003      |                         |                 |
| AU 2003--210895 Al                    | 09/09/2003      |                         |                 |
| AU 2003--211058 Al                    | 09/09/2003      |                         |                 |
| AU 2003--211082 Al                    | 09/09/2003      |                         |                 |</p>
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