

hypertriglyceridemia can also lead to pancreatitis. Hyperlipidemia is another example of a lipid metabolism disorder that is characterized by elevated levels of any one or all lipids and/or lipoproteins in the blood. Current treatments for disorders of lipid metabolism, including dieting, exercise and treatment with statins and other drugs, are not always effective. Accordingly, there is a need in the art for alternative treatments for subjects having disorders of lipid metabolism.

Summary of the Invention

The present ~~invention~~disclosure provides iRNA compositions which effect the RNA-induced silencing complex (RISC)-mediated cleavage of RNA transcripts of an ANGPL3 gene. The ANGPL3 gene may be within a cell, *e.g.*, a cell within a subject, such as a human. The present ~~invention~~disclosure also provides methods of using the iRNA compositions of the ~~invention~~disclosure for inhibiting the expression of an ANGPL3 gene and/or for treating a subject who would benefit from inhibiting or reducing the expression of an ANGPL3 gene, *e.g.*, a subject suffering or prone to suffering from a disorder of lipid metabolism, such as a subject suffering or prone to suffering from hyperlipidemia or hypertriglyceridemia.

In one aspect, the present disclosure refers to a double-stranded ribonucleic acid (dsRNA) agent for inhibiting expression of Angiopoietin-like 3 (ANGPTL3), comprising a sense strand and an antisense strand, wherein the antisense strand comprises at least 17 contiguous nucleotides which differ by no more than three nucleotides from the complement of nucleotides 244-307 of SEQ ID NO:1, wherein all of the nucleotides of the sense strand and all of the nucleotides of the antisense strand are modified nucleotides, wherein at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a 2'-fluoro modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, an abasic nucleotide, and a 2'-amino modified nucleotide, and wherein a ligand comprising an N-acetylgalactosamine (GalNAc) derivative is conjugated to at least one strand of the dsRNA agent.

5 In another aspect, the present disclosure refers to a double-stranded ribonucleic acid (dsRNA) agent for inhibiting expression of Angiopoietin-like 3 (ANGPTL3), wherein the dsRNA agent comprises a sense strand and an antisense strand, wherein the antisense strand comprises at least 17 contiguous nucleotides which differ by no more than three nucleotides from the complement of nucleotides 256-306 of SEQ ID NO:1, wherein all of the nucleotides of the sense strand and all of the nucleotides of the antisense strand are modified nucleotides, wherein at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a 2'-fluoro modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, an abasic nucleotide, and a 2'-amino modified nucleotide, and wherein a ligand comprising an N-acetylgalactosamine (GalNAc) derivative is conjugated to at least one strand of the dsRNA agent.

15 In another aspect, the present disclosure refers to a double-stranded ribonucleic acid (dsRNA) agent for inhibiting expression of Angiopoietin-like 3 (ANGPTL3), wherein the dsRNA agent comprises a sense strand and an antisense strand, wherein the antisense strand comprises at least 17 contiguous nucleotides which differ by no more than three nucleotides from the complement of nucleotides 266-299 of SEQ ID NO:1, wherein all of the nucleotides of the sense strand and all of the nucleotides of the antisense strand are modified nucleotides, wherein at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a 2'-fluoro modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, an abasic nucleotide, and a 2'-amino modified nucleotide, and wherein a ligand comprising an N-acetylgalactosamine (GalNAc) derivative is conjugated to at least one strand of the dsRNA agent.

25 In yet another aspect, the present disclosure refers to a cell containing the dsRNA agent as disclosed herein.

In yet another aspect, the present disclosure refers to a pharmaceutical composition for inhibiting expression of an ANGPTL3 gene, comprising the dsRNA agent as disclosed herein.

5 In yet another aspect, the present disclosure refers to an *in vitro* method of inhibiting ANGPTL3 expression in a cell, the method comprising: (a) contacting the cell with the dsRNA agent as disclosed herein; and (b) maintaining the cell produced in step (a) for a time sufficient to obtain degradation of the mRNA transcript of an ANGPTL3 gene, thereby inhibiting expression of the ANGPTL3 gene in the cell.

10 In yet another aspect, the present disclosure refers to the use of the dsRNA agent as disclosed herein in the manufacture of a medicament for treating a subject having a disorder that would benefit from reduction in ANGPTL3 expression, comprising that the dsRNA agent is to be administered to the subject, wherein the disorder is a disorder of lipid metabolism.

 Accordingly, in one ~~aspect~~example, the present ~~invention~~disclosure provides double-stranded ribonucleic acids (dsRNAs) for inhibiting expression of ANGPTL3. The dsRNAs comprise a sense strand and an antisense strand, wherein the sense strand comprises at least 15 contiguous nucleotides differing by no more than 3 nucleotides from the nucleotide sequence of SEQ ID NO:1 and the antisense strand comprises at least 15 contiguous nucleotides differing by no more than 3 nucleotides from the nucleotide sequence of SEQ ID NO:5.

 In another ~~aspect~~example, the present ~~invention~~disclosure provides double-stranded ribonucleic acids (dsRNAs) for inhibiting expression of ANGPTL3. The dsRNAs comprise a sense strand and an antisense strand, the antisense strand comprising a region of complementarity which comprises at least 15 contiguous nucleotides differing by no

more than 3 nucleotides from any one of the antisense sequences listed in Tables 2, 3, 7, 8, 9 and 10.

In one [embodimentexample](#), the sense and antisense strands comprise sequences selected from the group consisting of AD-53063.1, AD-53001.1, AD-53015.1, AD-52986.1, AD-52981.1, AD-52953.1, AD-53024.1, AD-53033.1, AD-53030.1, AD-53080.1, AD-53073.1, AD-53132.1, AD-52983.1, AD-52954.1, AD-52961.1, AD-52994.1, AD-52970.1, AD-53075.1, AD-53147.1, AD-53077.1 of Tables 7 and 8.

In certain [embodimentexamples](#) of the [inventiondisclosure](#), the dsRNAs comprise at least one modified nucleotide. In one [embodimentexample](#), at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, and a terminal nucleotide linked to a cholesteryl derivative or a dodecanoic acid bisdecylamide group. In another [embodimentexample](#), the modified nucleotide is selected from the group consisting of a 2'-deoxy-2'-fluoro modified nucleotide, a 2'-deoxy-modified nucleotide, a locked nucleotide, an abasic nucleotide, a 2'-amino-modified nucleotide, a 2'-alkyl-modified nucleotide, a morpholino nucleotide, a phosphoramidate, and a non-natural base comprising nucleotide.

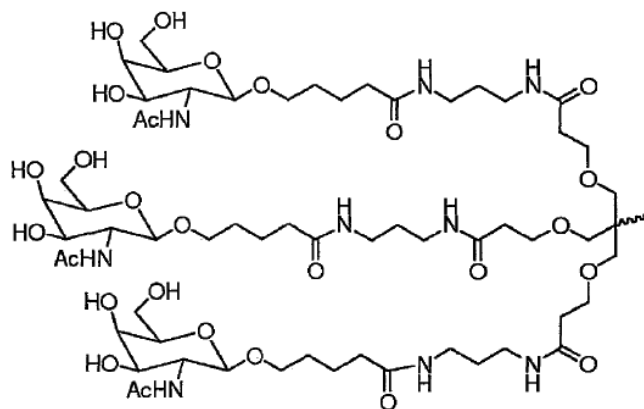
The region of complementarity of the dsRNAs may be at least 17 nucleotides in length, between 19 and 21 nucleotides in length, or 19 nucleotides in length.

In one [embodimentexample](#), each strand of a dsRNA is no more than 30 nucleotides in length.

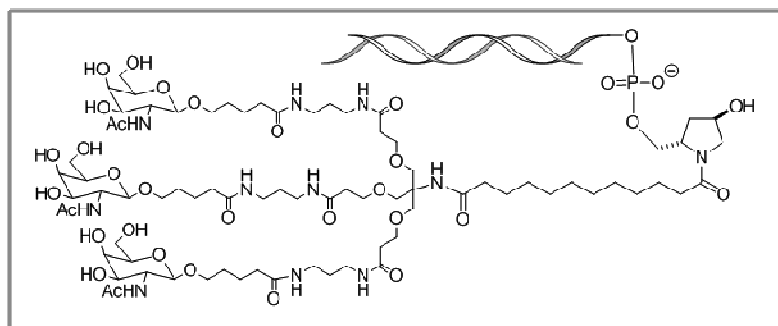
At least one strand of a dsRNA may comprise a 3' overhang of at least 1 nucleotide or at least 2 nucleotides.

In certain [embodimentexamples](#), a dsRNA further comprises a ligand. In one [embodimentexample](#), the ligand is conjugated to the 3' end of the sense strand of the dsRNA.

In some [embodimentexamples](#), the ligand is one or more N-acetylgalactosamine (GalNAc) derivatives attached through a bivalent or trivalent branched linker. In particular [embodimentexamples](#), the ligand is



In some embodimentexamples, the RNAi agent is conjugated to the ligand as shown in the following schematic



- 5 In some embodimentexamples, the RNAi agent further includes at least one phosphorothioate or methylphosphonate internucleotide linkage. In some embodimentexamples, the phosphorothioate or methylphosphonate internucleotide linkage is at the 3'-terminal of one strand. In some embodimentexamples, the strand is the antisense strand. In other embodimentexamples, the strand is the sense strand.
- 10 In one embodimentexample, the region of complementarity of a dsRNA consists of one of the antisense sequences of Tables 2, 3, 7, 8, 9 and 10.
- In another embodimentexample, a dsRNA comprises a sense strand consisting of a sense strand sequence selected from the sequences of Tables 2, 3, 7, 8, 9 and 10, and an antisense strand consisting of an antisense sequence selected from the sequences of
15 Tables 2, 3, 7, 8, 9 and 10.

In another [aspectexample](#), the present [inventiondisclosure](#) provides a cell, *e.g.*, a hepatocyte, containing a dsRNA of the [inventiondisclosure](#).

In yet another [aspectexample](#), the present [inventiondisclosure](#) provides a vector encoding at least one strand of a dsRNA, wherein the dsRNA comprises a region of complementarity to at least a part of an mRNA encoding ANGPTL3, wherein the
5 dsRNA is 30 base pairs or less in length, and wherein the dsRNA targets the mRNA for cleavage. The region of complementarity may be least 15 nucleotides in length or 19 to 21 nucleotides in length.

In a further [aspectexample](#), the present [inventiondisclosure](#) provides a cell
10 comprising a vector encoding at least one strand of a dsRNA, wherein the dsRNA comprises a region of complementarity to at least a part of an mRNA encoding ANGPTL3, wherein the dsRNA is 30 base pairs or less in length, and wherein the dsRNA targets the mRNA for cleavage.

In one [aspectexample](#), the present [inventiondisclosure](#) provides a pharmaceutical
15 composition for inhibiting expression of an ANGPTL3 gene comprising a dsRNA or vector of the [inventiondisclosure](#).

In one [embodimentexample](#), the pharmaceutical composition comprises a lipid formulation, such as a MC3, SNALP or XTC formulation.

In another [aspectexample](#), the present [inventiondisclosure](#) provides methods of
20 inhibiting ANGPTL3 expression in a cell. The methods include contacting the cell with a dsRNA or a vector of the [inventiondisclosure](#), and maintaining the cell produced for a time sufficient to obtain degradation of the mRNA transcript of an ANGPTL3 gene, thereby inhibiting expression of the ANGPTL3 gene in the cell.

The cell may be within a subject, such as a human subject, for example a human subject
25 suffering from a disorder of lipid metabolism, *e.g.*, hyperlipidemia or hypertriglyceridemia.

In one [embodimentexample](#) of the methods of the [inventiondisclosure](#), ANGPTL3 expression is inhibited by at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 55%, at least about 60%, at least about 65%, at

least about 70%, at least about 75%, at least about 80%, at least about 85%, at least about 90%, at least about 91%, at least about 92%, at least about 93%, at least about 94%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, or at least about 99%.

5 In another [aspectexample](#), the present [inventiondisclosure](#) provides methods of treating a subject having a disorder that would benefit from reduction in ANGPTL3 expression, *e.g.*, a disorder of lipid metabolism, such as hyperlipidemia or hypertriglyceridemia. The methods include administering to the subject a therapeutically effective amount of a dsRNA or a vector of the [inventiondisclosure](#), thereby treating the subject.

10 The disorder may be disorder of lipid metabolism, such as hyperlipidemia or hypertriglyceridemia

In one [embodimentexample](#), the administration of the dsRNA to the subject causes a decrease in the level of a serum lipid, triglycerides, cholesterol and/or free fatty acids; and/or a decrease in ANGPTL3 protein accumulation. In one [embodimentexample](#), administration of the
15 dsRNA to the subject causes a decrease in the level of LDL-C, HDL-C, VLDL-C, IDL-C and/or total cholesterol.

In one [embodimentexample](#), the dsRNA is administered at a dose of about 0.01 mg/kg to about 10 mg/kg, *e.g.*, about 0.05 mg/kg to about 5 mg/kg, about 0.05 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 10 mg/kg,
20 about 0.2 mg/kg to about 5 mg/kg, about 0.2 mg/kg to about 10 mg/kg, about 0.3 mg/kg to about 5 mg/kg, about 0.3 mg/kg to about 10 mg/kg, about 0.4 mg/kg to about 5 mg/kg, about 0.4 mg/kg to about 10 mg/kg, about 0.5 mg/kg to about 5 mg/kg, about 0.5 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1.5 mg/kg to about 5 mg/kg, about 1.5 mg/kg to about 10 mg/kg, about 2
25 mg/kg to about 2.5 mg/kg, about 2 mg/kg to about 10 mg/kg, about 3 mg/kg to about 5 mg/kg, about 3 mg/kg to about 10 mg/kg, about 3.5 mg/kg to about 5 mg/kg, about 4 mg/kg to about 5 mg/kg, about 4.5 mg/kg to about 5 mg/kg, about 4 mg/kg to about 10 mg/kg, about 4.5 mg/kg to about 10 mg/kg, about 5 mg/kg to about 10 mg/kg, about 5.5 mg/kg to about 10 mg/kg, about 6 mg/kg to about 10 mg/kg, about 6.5 mg/kg
30 to about 10 mg/kg, about 7 mg/kg to about 10 mg/kg, about 7.5 mg/kg to about 10 mg/kg, about 8 mg/kg, about 8

mg/kg to about 10 mg/kg, about 8.5 mg/kg to about 10 mg/kg, about 9 mg/kg to about 10 mg/kg, or about 9.5 mg/kg to about 10 mg/kg. Values and ranges intermediate to the recited values are also intended to be part of this [inventiondisclosure](#).

For example, the dsRNA may be administered at a dose of about 0.01, 0.02, 0.03,
5 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7,
10 9.8, 9.9, or about 10 mg/kg. Values and ranges intermediate to the recited values are also intended to be part of this [inventiondisclosure](#).

In another [embodimentexample](#), the dsRNA is administered at a dose of about 0.5 to about 50 mg/kg, about 0.75 to about 50 mg/kg, about 1 to about 50 mg/kg, about 1.5 to about 50 mg/kg, about 2 to about 50 mg/kg, about 2.5 to about 50 mg/kg, about 3 to about 50 mg/kg,
15 about 3.5 to about 50 mg/kg, about 4 to about 50 mg/kg, about 4.5 to about 50 mg/kg, about 5 to about 50 mg/kg, about 7.5 to about 50 mg/kg, about 10 to about 50 mg/kg, about 15 to about 50 mg/kg, about 20 to about 50 mg/kg, about 20 to about 50 mg/kg, about 25 to about 50 mg/kg, about 25 to about 50 mg/kg, about 30 to about 50 mg/kg, about 35 to about 50 mg/kg, about 40 to about 50 mg/kg, about 45 to about 50 mg/kg, about 0.5 to about 45 mg/kg, about 0.75 to about
20 45 mg/kg, about 1 to about 45 mg/kg, about 1.5 to about 45 mg/kg, about 2 to about 45 mg/kg, about 2.5 to about 45 mg/kg, about 3 to about 45 mg/kg, about 3.5 to about 45 mg/kg, about 4 to about 45 mg/kg, about 4.5 to about 45 mg/kg, about 5 to about 45 mg/kg, about 7.5 to about 45 mg/kg, about 10 to about 45 mg/kg, about 15 to about 45 mg/kg, about 20 to about 45 mg/kg, about 20 to about 45 mg/kg, about 25 to about 45 mg/kg, about 25 to about 45 mg/kg, about 30 to about 45 mg/kg, about 35 to about 45 mg/kg, about 40 to about 45 mg/kg, about 0.5 to about
25 40 mg/kg, about 0.75 to about 40 mg/kg, about 1 to about 40 mg/kg, about 1.5 to about 40 mg/kg, about 2 to about 40 mg/kg, about 2.5 to about 40 mg/kg, about 3 to about 40 mg/kg, about 3.5 to about 40 mg/kg, about 4 to about 40 mg/kg, about 4.5 to about 40 mg/kg, about 5 to about 40 mg/kg, about 7.5 to about 40 mg/kg, about 10 to about 40 mg/kg, about 15 to about 40 mg/kg, about 20 to about 40 mg/kg, about 20 to about 40 mg/kg, about 25 to about 40 mg/kg,
30 about 25 to

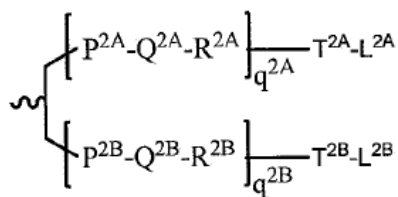
about 40 mg/kg, about 30 to about 40 mg/kg, about 35 to about 40 mg/kg, about 0.5 to about 30 mg/kg, about 0.75 to about 30 mg/kg, about 1 to about 30 mg/mg, about 1.5 to about 30 mg/kg, about 2 to about 30 mg/kg, about 2.5 to about 30 mg/kg, about 3 to about 30 mg/kg, about 3.5 to about 30 mg/kg, about 4 to about 30 mg/kg, about 4.5 to about 30 mg/kg, about 5 to about 30 mg/kg, about 7.5 to about 30 mg/kg, about 10 to about 30 mg/kg, about 15 to about 30 mg/kg, about 20 to about 30 mg/kg, about 20 to about 30 mg/kg, about 25 to about 30 mg/kg, about 0.5 to about 20 mg/kg, about 0.75 to about 20 mg/kg, about 1 to about 20 mg/mg, about 1.5 to about 20 mg/kg, about 2 to about 20 mg/kg, about 2.5 to about 20 mg/kg, about 3 to about 20 mg/kg, about 3.5 to about 20 mg/kg, about 4 to about 20 mg/kg, about 4.5 to about 20 mg/kg, about 5 to about 20 mg/kg, about 7.5 to about 20 mg/kg, about 10 to about 20 mg/kg, or about 15 to about 20 mg/kg. Values and ranges intermediate to the recited values are also intended to be part of this [inventiondisclosure](#).

For example, subjects can be administered a therapeutic amount of iRNA, such as about 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.5, 11, 11.5, 12, 12.5, 13, 13.5, 14, 14.5, 15, 15.5, 16, 16.5, 17, 17.5, 18, 18.5, 19, 19.5, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, or about 50 mg/kg. Values and ranges intermediate to the recited values are also intended to be part of this [inventiondisclosure](#).

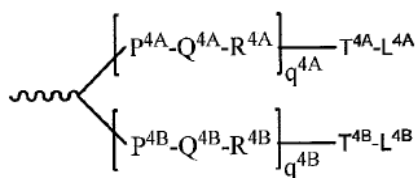
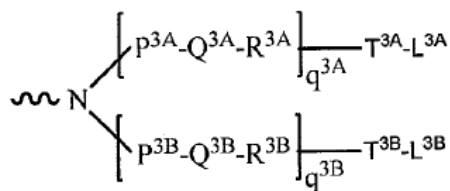
In another [aspectexample](#), the present [inventiondisclosure](#) provides methods of inhibiting the expression of ANGPTL3 in a subject. The methods include administering to the subject a therapeutically effective amount of a dsRNA or a vector of the [inventiondisclosure](#), thereby inhibiting the expression of ANGPTL3 in the subject.

In yet another [aspectexample](#), the [inventiondisclosure](#) provides kits for performing the methods of the [inventiondisclosure](#). In one [aspectexample](#), the [inventiondisclosure](#) provides a kit for performing a method of inhibiting expression of ANGPTL3 gene in a cell by contacting a cell with a double stranded RNAi agent in an amount effective to inhibit expression of the ANGPTL3 in

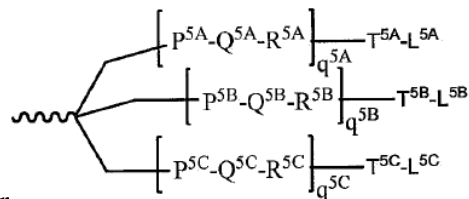
Formula XXXI



Formula XXXII



Formula (VI)



, or

5

Formula XXXIII

Formula XXXIV

wherein: q^{2A}, q^{2B}, q^{3A}, q^{3B}, q^{4A}, q^{4B}, q^{5A}, q^{5B} and q^{5C} represent independently for each occurrence 0-20 and wherein the repeating unit can be the same or different;

10 P^{2A}, P^{2B}, P^{3A}, P^{3B}, P^{4A}, P^{4B}, P^{5A}, P^{5B}, P^{5C}, T^{2A}, T^{2B}, T^{3A}, T^{3B}, T^{4A}, T^{4B}, T^{5A}, T^{5B}, T^{5C} are each independently for each occurrence absent, CO, NH, O, S, OC(O), NHC(O), CH₂, CH₂NH or CH₂O;

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Table 2. Unmodified sense and antisense strand sequences of ANGPTL3 dsRNAs

Duplex ID	Sense Name	Sense Sequence (SEQ ID NOS 16-77, respectively, in order of appearance)	Position in NM_014495.2	Antisense Name	Antisense Sequence (SEQ ID NOS 78-139, respectively, in order of appearance)	Position in NM_014495.2
AD-45939.1	A-96225.1	U~~AUUUGAUCAGUCUUUUU~~A~~SEQ ID NO 16~~	281-299	A-96226.1	U~~AAAAAGACUGAUCAAAU~~A~~SEQ ID NO 78~~	281-299
AD-45858.1	A-96149.1	G~~AGCAACUAACUAACUUA~~A~~SEQ ID NO 17~~	478-496	A-96150.1	U~~UAAGUUAGUUAGUUGCUC~~A~~SEQ ID NO 79~~	478-496
AD-45869.1	A-96137.1	G~~GCCAAAUUAAUGACAU~~A~~SEQ ID NO 18~~	247-265	A-96138.1	A~~UAUGUCAUUAUUUGGCC~~A~~SEQ ID NO 80~~	247-265
AD-45884.1	A-96189.1	C~~GAAUUGAGUUGGAAGACU~~A~~SEQ ID NO 19~~	1045-1063	A-96190.1	A~~GUCUCCAACUCAAUUCG~~A~~SEQ ID NO 81~~	1045-1063
AD-45892.1	A-96129.1	C~~CUCCUUCAGUUGGGACA~~U~~SEQ ID NO 20~~	198-216	A-96130.1	A~~UGUCCCAACUGAAGGAGG~~A~~SEQ ID NO 82~~	198-216
AD-45899.1	A-96147.1	C~~ACUUGAACUCAACUCA~~A~~SEQ ID NO 21~~	401-419	A-96148.1	U~~UUGAGUUGAGUUCAAGUG~~A~~SEQ ID NO 83~~	401-419
AD-45915.1	A-96231.1	G~~UCCAUGGACAUUAUUCA~~SEQ ID NO 22	890-908	A-96232.1	U~~GAAUUAUGUCCAUGGAC~~A~~SEQ ID NO 84~~	890-908
AD-45924.1	A-96219.1	A~~AUCAAGAUUUGCUAUGU~~U~~SEQ ID NO 23~~	152-170	A-96220.1	A~~ACAUAGCAAUCUUGAUU~~U~~SEQ ID NO 85~~	152-170
AD-45860.1	A-96181.1	C~~UAGAGAAGAUUACUCCA~~SEQ ID NO 24	1000-1018	A-96182.1	U~~GGAGUAUAUCUUCUCUAG~~SEQ ID NO 86	1000-1018
AD-45870.1	A-96153.1	C~~UACUAACUUAUUCAA~~A~~SEQ ID NO 25~~	484-502	A-96154.1	U~~UUGAAUUAAGUUAGUUAG~~SEQ ID NO 87	484-502
AD-45870.2	A-96153.2	C~~UACUAACUUAUUCAA~~A~~SEQ ID NO 26~~	484-502	A-96154.2	U~~UUGAAUUAAGUUAGUUAG~~SEQ ID NO 88	484-502
AD-45877.1	A-96171.1	C~~AUUAUUCAACAUCGAAU~~SEQ ID NO 27	899-917	A-96172.1	A~~UUCGAUGUUGAAUUAUG~~SEQ ID NO 89	899-917
AD-45885.1	A-96205.1	C~~AAAAUGUUGAUCCAUC~~A~~SEQ ID NO 28~~	1392-1410	A-96206.1	U~~GGAUGGAUCAACAUUUUG~~SEQ ID NO 90	1392-1410
AD-45893.1	A-96145.1	C~~AUAUAAACUACAAGUCA~~A~~SEQ ID NO 29~~	359-377	A-96146.1	U~~UGACUUGUAGUUUAUUG~~SEQ ID NO 91	359-377
AD-45900.1	A-96163.1	G~~ACCCAGCAACUCUCAAGU~~SEQ ID NO 30	839-857	A-96164.1	A~~CUUGAGAGUUGCUGGGUC~~SEQ ID NO 92	839-857
AD-45925.1	A-96235.1	G~~GUUGGGCCUAGAGAAGA~~U~~SEQ ID NO 31~~	992-1010	A-96236.1	A~~UCUUCUCUAGGCCCAACC~~SEQ ID NO 93	992-1010
AD-45861.1	A-96197.1	G~~UGUGGAGAAAACAACCU~~A~~SEQ ID NO 32~~	1272-1290	A-96198.1	U~~AGGUUGUUUCUCCACAC~~SEQ ID NO 94	1272-1290

AD-45871.1	A-96169.1	GACAUUAAUUCACAU CGA SEQ ID NO 33	897-915	A-96170.1	UCGAUGUUGAAUUA AUGUC SEQ ID NO 95	897-915
AD-45878.1	A-96187.1	CAUAGUGAAGCAAUCUAAU SEQ ID NO 34	1017-1035	A-96188.1	AUUAGAUUGCUUCACUAUG SEQ ID NO 96	1017-1035
AD-45886.1	A-96127.1	CUAUGUUAGACGAUGUAAA SEQ ID NO 35	164-182	A-96128.1	UUUACAUCGUCUACAUAG SEQ ID NO 97	164-182
AD-45894.1	A-96161.1	CACAGAAAUUUCUCUAUCU SEQ ID NO 36	684-702	A-96162.1	AGAUAGAGAAAUUUCUGUG SEQ ID NO 98	684-702
AD-45901.1	A-96179.1	GUUGGGCCUAGAGAAGAU SEQ ID NO 37	993-1011	A-96180.1	UAUCUUCUCUAGGCCCAAC SEQ ID NO 99	993-1011
AD-45909.1	A-96213.1	GCCAAAAUCAAGAUUUGCU SEQ ID NO 38	147-165	A-96214.1	AGCAAUCUUGAUUUUGGC SEQ ID NO 100	147-165
AD-45934.1	A-96223.1	ACAUAUUUGAUCAGUCUUU SEQ ID NO 39	278-296	A-96224.1	AAAGACUGAUCAAUAUGU SEQ ID NO 101	278-296
AD-45934.2	A-96223.2	ACAUAUUUGAUCAGUCUUU SEQ ID NO 40	278-296	A-96224.2	AAAGACUGAUCAAUAUGU SEQ ID NO 102	278-296
AD-45863.1	A-96135.1	CUUAAAGACUUUGUCCAU SEQ ID NO 41	220-238	A-96136.1	UAUGGACAAAGUCUUUAAG SEQ ID NO 103	220-238
AD-45872.1	A-96185.1	CCAUGUGAAGCAAUCUAA SEQ ID NO 42	1016-1034	A-96186.1	UUAGAUUGCUUCACUAUGG SEQ ID NO 104	1016-1034
AD-45879.1	A-96203.1	CAACCAAAAUGUUGAUCCA SEQ ID NO 43	1388-1406	A-96204.1	UGGAUCAACAUUUUGGUUG SEQ ID NO 105	1388-1406
AD-45887.1	A-96143.1	CUACAUAUAAACUACAAGU SEQ ID NO 44	356-374	A-96144.1	ACUUGUAGUUUAUAUGUAG SEQ ID NO 106	356-374
AD-45895.1	A-96177.1	GGGAGGCUUGAUGGAGAAU SEQ ID NO 45	970-988	A-96178.1	AUUCUCCAUCAAGCCUCC SEQ ID NO 107	970-988
AD-45902.1	A-96195.1	GGUGUUUUCUACUUGGGAU SEQ ID NO 46	1188-1206	A-96196.1	AUCCCAAGUAGAAAACACC SEQ ID NO 108	1188-1206
AD-45910.1	A-96229.1	AAGAGCACCAAGAACUACU SEQ ID NO 47	711-729	A-96230.1	AGUAGUUCUUGGUGCUCU SEQ ID NO 109	711-729
AD-45935.1	A-96239.1	UGGAGAAAACAACCUAAAU SEQ ID NO 48	1275-1293	A-96240.1	AUUUAGGUUGUUUUCUCC SEQ ID NO 110	1275-1293
AD-45864.1	A-96151.1	GCAACUAAACUAAUUAU SEQ ID NO 49	480-498	A-96152.1	AAUUAAGUUGUUGUUGC SEQ ID NO 111	480-498
AD-45873.1	A-96201.1	CAACCUAAAUGGUAAUAU SEQ ID NO 50	1284-1302	A-96202.1	AUUUUUACCAUUAGGUUG SEQ ID NO 112	1284-1302
AD-45880.1	A-96125.1	GCUAUGUUAGACGAUGUAA SEQ ID NO 51	163-181	A-96126.1	UUACAUCGUCUACAUAGC SEQ ID NO 113	163-181
AD-45888.1	A-96159.1	CCCACAGAAAUUUCUCUAU SEQ ID NO 52	682-700	A-96160.1	AUAGAGAAAUUUCUGUGG SEQ ID NO 114	682-700

AD-45896.1	A-96193.1	GAUUUGGUGUUUUCUACUUSEQ-ID-NO-53	1183-1201	A-96194.1	AAGUAGAAAACACCAAUCSEQ-ID-NO-115	1183-1201
AD-45903.1	A-96211.1	CAGAGCCAAAAUCAAGAUUSEQ-ID-NO-54	143-161	A-96212.1	AAUCUUGAUUUUGGCUCUGSEQ-ID-NO-116	143-161
AD-45919.1	A-96217.1	AAAUCAAGAUUUGCUAUGUSEQ-ID-NO-55	151-169	A-96218.1	ACAUAGCAAUCUUGAUUUSEQ-ID-NO-117	151-169
AD-45865.1	A-96167.1	CAUGGACAUUAAUUCAACASEQ-ID-NO-56	893-911	A-96168.1	UGUUGAAUUAUUGUCCAUGSEQ-ID-NO-118	893-911
AD-45874.1	A-96123.1	GAUUUGCUAUGUUAGACGASEQ-ID-NO-57	158-176	A-96124.1	UCGUCUAACAUAGCAAUCSEQ-ID-NO-119	158-176
AD-45881.1	A-96141.1	GAACUACAUUAAACUACASEQ-ID-NO-58	353-371	A-96142.1	UGUAGUUUAUUGUAGUUCSEQ-ID-NO-120	353-371
AD-45889.1	A-96175.1	CGAAUAGAUGGAUCACAAASEQ-ID-NO-59	913-931	A-96176.1	UUUGUGAUCCAUCUUAUCGSEQ-ID-NO-121	913-931
AD-45897.1	A-96209.1	CUUGUUAAAACUCUAAACUSEQ-ID-NO-60	1817-1835	A-96210.1	AGUUUAGAGUUUUAACAAGSEQ-ID-NO-122	1817-1835
AD-45904.1	A-96227.1	AUUUGAUCAGUCUUUUUAUSEQ-ID-NO-61	282-300	A-96228.1	AUAAAAAGACUGAUCAAAUSEQ-ID-NO-123	282-300
AD-45920.1	A-96233.1	UCCAUGGACAUUAAUUCAASEQ-ID-NO-62	891-909	A-96234.1	UUGAAUUAUUGUCCAUGGASEQ-ID-NO-124	891-909
AD-45856.1	A-96117.1	CACAAUUAAGCUCCUUCUUSEQ-ID-NO-63	57-75	A-96118.1	AAGAAGGAGCUUAAUUGUGSEQ-ID-NO-125	57-75
AD-45929.1	A-96221.1	CAACAUUUUGAUCAGUCUSEQ-ID-NO-64	276-294	A-96222.1	AGACUGAUCAAUAUGUUGSEQ-ID-NO-126	276-294
AD-45866.1	A-96183.1	CUCCAUGUGAAGCAAUCUSEQ-ID-NO-65	1014-1032	A-96184.1	AGAUUGCUUCACUAUGGAGSEQ-ID-NO-127	1014-1032
AD-45875.1	A-96139.1	GCCAAAUUAAUGACAUUUUSEQ-ID-NO-66	248-266	A-96140.1	AAUAUGUCAUUAUUUGGCSEQ-ID-NO-128	248-266
AD-45882.1	A-96157.1	CAACAGCAUAGUCAAAUAASEQ-ID-NO-67	622-640	A-96158.1	UUAUUUGACUAUGCUGUUGSEQ-ID-NO-129	622-640
AD-45890.1	A-96191.1	GGAAUACACGAAACCAACUSEQ-ID-NO-68	1105-1123	A-96192.1	AGUUGGUUUCGUGAUUUCSEQ-ID-NO-130	1105-1123
AD-45898.1	A-96131.1	CAGUUGGACAUGGUCUUASEQ-ID-NO-69	205-223	A-96132.1	JAAGACCAUGUCCCAACUGSEQ-ID-NO-131	205-223
AD-45857.1	A-96133.1	GACAUGGUCUUAAAGACUUSEQ-ID-NO-70	212-230	A-96134.1	AAGUCUUUAAGACCAUGUCSEQ-ID-NO-132	212-230
AD-45930.1	A-96237.1	UGUGGAGAAAACAACCUAAASEQ-ID-NO-71	1273-1291	A-96238.1	UUAGGUUGUUUUCUCCACASEQ-ID-NO-133	1273-1291
AD-45867.1	A-96199.1	GUGGAGAAAACAACCUAAASEQ-ID-NO-72	1274-1292	A-96200.1	UUUAGGUUGUUUUCUCCACSEQ-ID-NO-134	1274-1292

AD-45876.1	A-96155.1	CCAACAGCAUAGUCAAAUASEQ-ID-NO-73	621-639	A-96156.1	UAUUUGACUAUGCUGUUGGSEQ-ID-NO-135	621-639
AD-45883.1	A-96173.1	CAACAUCGAAUAGAUGGAUASEQ-ID-NO-74	907-925	A-96174.1	AUCCAUCUAUUCGAUGUUGSEQ-ID-NO-136	907-925
AD-45891.1	A-96207.1	GCAAAUUUAAAAGGCAAUASEQ-ID-NO-75	1441-1459	A-96208.1	UAUUGCCUUUUAAAUUUGCSEQ-ID-NO-137	1441-1459
AD-45914.1	A-96215.1	CAAAAUCAAGAUUUGCUAUASEQ-ID-NO-76	149-167	A-96216.1	AUAGCAAUCUUGAUUUUGSEQ-ID-NO-138	149-167
AD-15838.1	A-26242.1	AGAGCCAAAAUCAAGAUUASEQ-ID-NO-77	144-162	A-26243.2	AAAUUCUUGAUUUUGGCUCUASEQ-ID-NO-139	144-162

Table 3. Modified sense and antisense strand sequences of ANGPTL3 dsRNAs

Duplex ID	Sense OligoName	Sense Sequence (SEQ ID NOS 140-201, respectively, in order of appearance)	Antisense OligoName	Antisense Sequence (SEQ ID NOS 202-263, respectively, in order of appearance)
AD-45939.1	A-96225.1	uAuuuGAucAGucuuuuuAdTsdTSEQ-ID-NO-140	A-96226.1	uAAAAAGACUGAUcAAAUAdTsdTSEQ-ID-NO-202
AD-45858.1	A-96149.1	GAGcAAcuAAcuAAcuuAAdTsdTSEQ-ID-NO-141	A-96150.1	UuAAGUuAGUuAGUUGCUCdTsdTSEQ-ID-NO-203
AD-45869.1	A-96137.1	GGccAAAuuAAuGAcAuAudTsdTSEQ-ID-NO-142	A-96138.1	AuAUGUcAUuAAUUUGCCdTsdTSEQ-ID-NO-204
AD-45884.1	A-96189.1	cGAAuuGAGuuGGAAGAcudTsdTSEQ-ID-NO-143	A-96190.1	AGUCUUCcAACUcAAUUCGdTsdTSEQ-ID-NO-205
AD-45892.1	A-96129.1	ccuccuucAGuuGGGAcAudTsdTSEQ-ID-NO-144	A-96130.1	AUGUCCcAACUGAAGGAGdTsdTSEQ-ID-NO-206
AD-45899.1	A-96147.1	cAcuuGAAcucAAcucAAAAdTsdTSEQ-ID-NO-145	A-96148.1	UUUGAGUUGAGUUCaAGUGdTsdTSEQ-ID-NO-207
AD-45915.1	A-96231.1	GuccAuGGAcAuAAuucAdTsdTSEQ-ID-NO-146	A-96232.1	UGAAUuAAUGUCcAUGGACdTsdTSEQ-ID-NO-208
AD-45924.1	A-96219.1	AAucAAGAuuuGcuAuGuudTsdTSEQ-ID-NO-147	A-96220.1	AAcAuAGcAAAUUCUUGAUUdTsdTSEQ-ID-NO-209
AD-45860.1	A-96181.1	cuAGAGAAGAuAuAcuccAdTsdTSEQ-ID-NO-148	A-96182.1	UGGAGuAuAUCUUCUCuAGdTsdTSEQ-ID-NO-210
AD-45870.1	A-96153.1	cuAAcuAAcuuAAuucAAAAdTsdTSEQ-ID-NO-149	A-96154.1	UUUGAAUuAAGUuAGUuAGdTsdTSEQ-ID-NO-211
AD-45870.2	A-96153.2	cuAAcuAAcuuAAuucAAAAdTsdTSEQ-ID-NO-150	A-96154.2	UUUGAAUuAAGUuAGUuAGdTsdTSEQ-ID-NO-212
AD-45877.1	A-96171.1	cAuuAAuucAAcAucGAAdTsdTSEQ-ID-NO-151	A-96172.1	AUUCGAUGUUGAAUuAAUGdTsdTSEQ-ID-NO-213

AD-45885.1	A-96205.1	<u>cAAAAuGuuGAuccAuccAdTsdTSEQ-ID-NO-152</u>	A-96206.1	<u>UGGAUGGAUcAAcAUUUUGdTsdTSEQ-ID-NO-214</u>
AD-45893.1	A-96145.1	<u>cAuAuAAAcuAcAAGucAAdTsdTSEQ-ID-NO-153</u>	A-96146.1	<u>UUGACUUGuAGUuuAuAUGdTsdTSEQ-ID-NO-215</u>
AD-45900.1	A-96163.1	<u>GAcccAGcAAcucucAAGudTsdTSEQ-ID-NO-154</u>	A-96164.1	<u>ACUUGAGAGUUGCUGGGUCdTsdTSEQ-ID-NO-216</u>
AD-45925.1	A-96235.1	<u>GGuuGGGccuAGAGAAGAudTsdTSEQ-ID-NO-155</u>	A-96236.1	<u>AUCUUCUCuAGGCCcAACdTsdTSEQ-ID-NO-217</u>
AD-45861.1	A-96197.1	<u>GuGuGGAGAAAAcAAccuAdTsdTSEQ-ID-NO-156</u>	A-96198.1	<u>uAGGUUGUUUUCUCcAcACdTsdTSEQ-ID-NO-218</u>
AD-45871.1	A-96169.1	<u>GAcuuAAuucAAcAucGAdTsdTSEQ-ID-NO-157</u>	A-96170.1	<u>UCGAUGUUGAAUuAAUGUCdTsdTSEQ-ID-NO-219</u>
AD-45878.1	A-96187.1	<u>cAuAGuGAAGcAAucuAAudTsdTSEQ-ID-NO-158</u>	A-96188.1	<u>AUuAGAUUGCUUcACuAUGdTsdTSEQ-ID-NO-220</u>
AD-45886.1	A-96127.1	<u>cuAuGuuAGAcGAuGuAAAdTsdTSEQ-ID-NO-159</u>	A-96128.1	<u>UUuAcAUCGUCuAAcAuAGdTsdTSEQ-ID-NO-221</u>
AD-45894.1	A-96161.1	<u>cAcAGAAuuucucuAucdTsdTSEQ-ID-NO-160</u>	A-96162.1	<u>AGAuAGAGAAAUUUCUGdTsdTSEQ-ID-NO-222</u>
AD-45901.1	A-96179.1	<u>GuuGGGccuAGAGAAGAuAdTsdTSEQ-ID-NO-161</u>	A-96180.1	<u>uAUCUUCUCuAGGCCcAACdTsdTSEQ-ID-NO-223</u>
AD-45909.1	A-96213.1	<u>GccAAAAucAAGAuuuGcudTsdTSEQ-ID-NO-162</u>	A-96214.1	<u>AGcAAAUCUUGAUUUUGGCdTsdTSEQ-ID-NO-224</u>
AD-45934.1	A-96223.1	<u>AcAuAuuuGAucAGucuuudTsdTSEQ-ID-NO-163</u>	A-96224.1	<u>AAAGACUGAUcAAAUuAUGUdTsdTSEQ-ID-NO-225</u>
AD-45934.2	A-96223.2	<u>AcAuAuuuGAucAGucuuudTsdTSEQ-ID-NO-164</u>	A-96224.2	<u>AAAGACUGAUcAAAUuAUGUdTsdTSEQ-ID-NO-226</u>
AD-45863.1	A-96135.1	<u>cuuAAAGAcuuuGuccAuAdTsdTSEQ-ID-NO-165</u>	A-96136.1	<u>uAUGGAcAAAGUCUuAAGdTsdTSEQ-ID-NO-227</u>
AD-45872.1	A-96185.1	<u>ccAuAGuGAAGcAAucuAAdTsdTSEQ-ID-NO-166</u>	A-96186.1	<u>UuAGAUUGCUUcACuAUGGdTsdTSEQ-ID-NO-228</u>
AD-45879.1	A-96203.1	<u>cAAccAAAAuGuuGAuccAdTsdTSEQ-ID-NO-167</u>	A-96204.1	<u>UGGAUcAAcAUUUUGGUUGdTsdTSEQ-ID-NO-229</u>
AD-45887.1	A-96143.1	<u>cuAcAuAuAAAcuAcAAGudTsdTSEQ-ID-NO-168</u>	A-96144.1	<u>ACUUGuAGUuuAuAUGuAGdTsdTSEQ-ID-NO-230</u>
AD-45895.1	A-96177.1	<u>GGGAGGcuuGAuGGAGAAudTsdTSEQ-ID-NO-169</u>	A-96178.1	<u>AUUCUCcAUcAAGCCUCCcTsdTSEQ-ID-NO-231</u>
AD-45902.1	A-96195.1	<u>GGuGuuuuucuAcuuGGGAudTsdTSEQ-ID-NO-170</u>	A-96196.1	<u>AUCCcAAGuAGAAAAcACcTsdTSEQ-ID-NO-232</u>
AD-45910.1	A-96229.1	<u>AAGAGcAccAAGAAcuAcudTsdTSEQ-ID-NO-171</u>	A-96230.1	<u>AGuAGUUCUUGGUGCUCUdTsdTSEQ-ID-NO-233</u>

AD-45935.1	A-96239.1	<u>uGGAGAAAACAAccuAAAudTsdTSEQ-ID-NO-172</u>	A-96240.1	<u>AUUuAGGUUGUUUCUCcAdTsdTSEQ-ID-NO-234</u>
AD-45864.1	A-96151.1	<u>GcAAcuAAcuAAcuuAAudTsdTSEQ-ID-NO-173</u>	A-96152.1	<u>AAUuAGUuAGUuAGUUGCdTsdTSEQ-ID-NO-235</u>
AD-45873.1	A-96201.1	<u>cAAccuAAAuGGuAAuAudTsdTSEQ-ID-NO-174</u>	A-96202.1	<u>AuAUUuACcAUUuAGGUUGdTsdTSEQ-ID-NO-236</u>
AD-45880.1	A-96125.1	<u>GcuAuGuuAGAcGAuGuAAdTsdTSEQ-ID-NO-175</u>	A-96126.1	<u>UuAcAUCGUCuAAcAuAGCdTsdTSEQ-ID-NO-237</u>
AD-45888.1	A-96159.1	<u>cccAcAGAAAuuucucuAudTsdTSEQ-ID-NO-176</u>	A-96160.1	<u>AuAGAGAAUUUCUGUGGGdTsdTSEQ-ID-NO-238</u>
AD-45896.1	A-96193.1	<u>GAuuuGGuGuuuucuAcuudTsdTSEQ-ID-NO-177</u>	A-96194.1	<u>AAGuAGAAAACcAAAUCdTsdTSEQ-ID-NO-239</u>
AD-45903.1	A-96211.1	<u>cAGAGccAAAAucAAGAuudTsdTSEQ-ID-NO-178</u>	A-96212.1	<u>AAUCUUGAUUUUGGCUCUGdTsdTSEQ-ID-NO-240</u>
AD-45919.1	A-96217.1	<u>AAAuAAGAuuuGcuAuGudTsdTSEQ-ID-NO-179</u>	A-96218.1	<u>AcAuAGcAAAUCUUGAUUdTsdTSEQ-ID-NO-241</u>
AD-45865.1	A-96167.1	<u>cAuGGAcAuAAuucAAcAdTsdTSEQ-ID-NO-180</u>	A-96168.1	<u>UGUUGAAUuAAUGUCcAUGdTsdTSEQ-ID-NO-242</u>
AD-45874.1	A-96123.1	<u>GAuuuGcuAuGuuAGAcGAdTsdTSEQ-ID-NO-181</u>	A-96124.1	<u>UCGUCuAAcAuAGcAAAUCdTsdTSEQ-ID-NO-243</u>
AD-45881.1	A-96141.1	<u>GAAcuAcAuAuAAcuAcAdTsdTSEQ-ID-NO-182</u>	A-96142.1	<u>UGuAGUuAuAUGuAGUUCdTsdTSEQ-ID-NO-244</u>
AD-45889.1	A-96175.1	<u>cGAAuAGAuGGAucAcAAAdTsdTSEQ-ID-NO-183</u>	A-96176.1	<u>UUUGUGAUCcAUCuAUUCGdTsdTSEQ-ID-NO-245</u>
AD-45897.1	A-96209.1	<u>cuuGuuAAAAcucuAAAcudTsdTSEQ-ID-NO-184</u>	A-96210.1	<u>AGUUuAGAGUUUuAAcAAGdTsdTSEQ-ID-NO-246</u>
AD-45904.1	A-96227.1	<u>AuuuGAucAGucuuuuuAudTsdTSEQ-ID-NO-185</u>	A-96228.1	<u>AuAAAAAGACUGAUcAAAUdTsdTSEQ-ID-NO-247</u>
AD-45920.1	A-96233.1	<u>uccAuGGAcAuAAuucAAAdTsdTSEQ-ID-NO-186</u>	A-96234.1	<u>UUGAAUuAAUGUCcAUGGAdTsdTSEQ-ID-NO-248</u>
AD-45856.1	A-96117.1	<u>cAcAAuuAAGcuccuucuudTsdTSEQ-ID-NO-187</u>	A-96118.1	<u>AAGAAGGAGCUuAAUUGUGdTsdTSEQ-ID-NO-249</u>
AD-45929.1	A-96221.1	<u>cAAcAuAuuuGAucAGucudTsdTSEQ-ID-NO-188</u>	A-96222.1	<u>AGACUGAUcAAAUUGUUGdTsdTSEQ-ID-NO-250</u>
AD-45866.1	A-96183.1	<u>cuccAuAGuGAAGcAAucudTsdTSEQ-ID-NO-189</u>	A-96184.1	<u>AGAUGCUUcAcuAUGGAGdTsdTSEQ-ID-NO-251</u>
AD-45875.1	A-96139.1	<u>GccAAAuuAAuGAcAuAuudTsdTSEQ-ID-NO-190</u>	A-96140.1	<u>AAuAUGUCAUuAAUUUGGCdTsdTSEQ-ID-NO-252</u>
AD-45882.1	A-96157.1	<u>cAAcAGcAuAGucAAuAAdTsdTSEQ-ID-NO-191</u>	A-96158.1	<u>UuAUUUGACuAUGCUGUUGdTsdTSEQ-ID-NO-253</u>

AD-45890.1	A-96191.1	<u>GGAUAucAcGAAAccAAcudTsdTSEQ-ID-NO-192</u>	A-96192.1	<u>AGUUGGUUUCGUGAUUUCCdTsdTSEQ-ID-NO-254</u>
AD-45898.1	A-96131.1	<u>cAGuuGGGAcAuGGucuuAdTsdTSEQ-ID-NO-193</u>	A-96132.1	<u>uAAGACcAUGUCCcAACUGdTsdTSEQ-ID-NO-255</u>
AD-45857.1	A-96133.1	<u>GAcAuGGucuuAAAGAcuudTsdTSEQ-ID-NO-194</u>	A-96134.1	<u>AAGUCUuAAGACcAUGUCdTsdTSEQ-ID-NO-256</u>
AD-45930.1	A-96237.1	<u>uGuGGAGAAAAcAAccuAAdTsdTSEQ-ID-NO-195</u>	A-96238.1	<u>UuAGGUUGUUUUCUCcAcAdTsdTSEQ-ID-NO-257</u>
AD-45867.1	A-96199.1	<u>GuGGAGAAAAcAAccuAAAAdTsdTSEQ-ID-NO-196</u>	A-96200.1	<u>UUuAGGUUGUUUUCUCcACdTsdTSEQ-ID-NO-258</u>
AD-45876.1	A-96155.1	<u>ccAAcAGcAuAGucAAuAdTsdTSEQ-ID-NO-197</u>	A-96156.1	<u>uAUUUGACuAUGCUGUUGdTsdTSEQ-ID-NO-259</u>
AD-45883.1	A-96173.1	<u>cAAcAucGAuAGAuGGAudTsdTSEQ-ID-NO-198</u>	A-96174.1	<u>AUCcAUCuAUUCGAUGUUGdTsdTSEQ-ID-NO-260</u>
AD-45891.1	A-96207.1	<u>GcAAAuuuAAAAGGcAAuAdTsdTSEQ-ID-NO-199</u>	A-96208.1	<u>uAUUGCCUUuAAAUUUGCdTsdTSEQ-ID-NO-261</u>
AD-45914.1	A-96215.1	<u>cAAAAucAAGAuuuGcuAudTsdTSEQ-ID-NO-200</u>	A-96216.1	<u>AuAGcAAUCUUGAUUUUGdTsdTSEQ-ID-NO-262</u>
AD-15838.1	A-26242.1	<u>AGAGccAAAAucAAGAuudTsdTSEQ-ID-NO-201</u>	A-26243.2	<u>AAAUCUuGAUUUuGGCUCuDsdTSEQ-ID-NO-263</u>

Lowercase nucleotides (a, u, g, c) are 2'-O-methyl nucleotides; s is a phosphothiorate linkage.

Table 7. Unmodified sense and antisense strand sequences of ANGPTL3 GalNac-conjugated dsRNAs

Duplex ID	Sense Name	Sense Sequence (SEQ ID NOS 264-448, respectively, in order of appearance)	Position in NM_014495.2	Antisense Name	Antisense Sequence (SEQ ID NOS 449-633, respectively, in order of appearance)	Position in NM_014495.2
AD-53063.1	A-108558.1	AAAGACAACAAACAUUAUUAUxSEQ-ID NO-264	1066-1086	A-108559.1	AAUAUAAUGUUUGUUGUCUUCCSEQ ID-NO-449	1064-1086
AD-52965.1	A-108310.1	ACAAUUAAGCUCCUUCUUUUUxSEQ-ID NO-265	58-78	A-108311.1	AAAAAGAAGGAGCUAAUUGUGASEQ ID-NO-450	56-78
AD-53030.1	A-108410.1	UGUCACUUGAACUCAACUAAxSEQ-ID NO-266	398-418	A-108411.1	UUGAGUUGAGUUCAGUGACAUASEQ ID-NO-451	396-418
AD-52953.1	A-108306.1	UCACAAUUAAGCUCCUUCUUUxSEQ-ID NO-267	56-76	A-108307.1	AAAGAAGGAGCUAAUUGUGAACSEQ ID-NO-452	54-76
AD-53001.1	A-108416.1	CUUGAACUCAACUCAAACUxSEQ-ID NO-268	403-423	A-108417.1	AAGUUUUGAGUUGAGUUAAGUGSEQ ID-NO-453	401-423
AD-53080.1	A-108548.1	CUCCAUGUGAAGCAAUCUAAxSEQ-ID NO-269	1014-1034	A-108549.1	UUAGAUUGCUUCACUAUGGAGUASEQ ID-NO-454	1012-1034
AD-52971.1	A-108312.1	CAUUAAGCUCCUUCUUUUUxSEQ-ID NO-270	59-79	A-108313.1	UAAAAAGAAGGAGCUAAUUGUGSEQ ID-NO-455	57-79
AD-53071.1	A-108498.1	ACCCAGCAACUCUAGUUUUUxSEQ-ID NO-271	840-860	A-108499.1	AAAACUUGAGAGUUGCUGGGUCUSEQ ID-NO-456	838-860
AD-53024.1	A-108408.1	GAAUUAUGUCACUUGAACUCAxSEQ-ID NO-272	393-413	A-108409.1	UUGAGUUAAGUGACAUAAUUCUSEQ ID-NO-457	391-413
AD-52977.1	A-108314.1	AAUUAAGCUCCUUCUUUUUxSEQ-ID NO-273	60-80	A-108315.1	AUAAAAAGAAGGAGCUAAUUGUSEQ ID-NO-458	58-80
AD-53064.1	A-108574.1	CAUUAUUAUGAAUUAUUCUUUxSEQ-ID NO-274	1078-1098	A-108575.1	AAAAGAAUUAUUAUUAUUGUSEQ ID-NO-459	1076-1098
AD-53033.1	A-108458.1	ACUAAACUAAUUAUUAUAAxSEQ-ID NO-275	483-503	A-108459.1	UUUUGAAUUAAGUUAAGUUAUGSE Q-ID-NO-460	481-503
AD-52954.1	A-108322.1	UUAUUGUCCUCUAGUUAUUUxSEQ-ID NO-276	77-97	A-108323.1	AAAUACUAGAGGAACAUAUAASEQ ID-NO-461	75-97
AD-53098.1	A-108554.1	CAUAGUGAAGCAAUCUAAUUAxSEQ-ID NO-277	1017-1037	A-108555.1	UAAUUAAGUUGCUUCACUAUGGASEQ ID-NO-462	1015-1037
AD-53092.1	A-108552.1	CCAUAGUGAAGCAAUCUAAUUAxSEQ-ID NO-278	1016-1036	A-108553.1	AAUUAAGUUGCUUCACUAUGGAGSEQ ID-NO-463	1014-1036
AD-53073.1	A-108530.1	GAUCACAAAACUCAAUGAAxSEQ-ID NO-279	923-943	A-108531.1	UUUCAUUGAAGUUUUGUGAUCCASEQ ID-NO-464	921-943
AD-53132.1	A-108628.1	AUGGAAGGUUAUACUCUAUAxSEQ-ID NO-280	1364-1384	A-108629.1	UUUAAGAGUAUAACCUCCAUUUSEQ ID-NO-465	1362-1384

AD-53086.1	A-108550.1	UCCAUAGUGAAGCAAUCUAAUxSEQ-ID NO-281	1015-1035	A-108551.1	AUUAGAUUGCUUCACUAUGGAGUSEQ-ID NO-466	1013-1035
AD-52961.1	A-108340.1	CUAUGUUGACGAUGUAAAAxSEQ-ID NO-282	164-184	A-108341.1	UUUUUACAUUCGUCUAAUAGCAGSEQ-ID NO-467	162-184
AD-52983.1	A-108316.1	AUUAAGCUCCUUCUUUUUAAUxSEQ-ID NO-283	61-81	A-108317.1	AAUAAAAAGAGGAGCUAAUUGSEQ-ID NO-468	59-81
AD-53027.1	A-108456.1	AACUAACUAAUAAUCAAAXSEQ-ID NO-284	482-502	A-108457.1	UUUGAAUUAAGUUAGUUAGUUGCSEQ-ID NO-469	480-502
AD-52986.1	A-108364.1	GGCCAAUUAUUGACAUUUUxSEQ-ID NO-285	247-267	A-108365.1	AAAUAGUCAUUAAUUGGCCUSEQ-ID NO-470	245-267
AD-52989.1	A-108318.1	UUUUUUGUUCUCUAGUUUxSEQ-ID NO-286	75-95	A-108319.1	AUAACUAGAGGAACAAUAAAAAGSEQ-ID NO-471	73-95
AD-52981.1	A-108378.1	ACAUAUUUGAUCAGUCUUUUxSEQ-ID NO-287	278-298	A-108379.1	AAAAAGACUGAUCAAUUAUGUUGSEQ-ID NO-472	276-298
AD-53077.1	A-108500.1	CCCAGCAACUCUCAAUUUUUxSEQ-ID NO-288	841-861	A-108501.1	AAAAACUUGAGAGUUGCUGGGUCSEQ-ID NO-473	839-861
AD-53095.1	A-108506.1	CAGGUAGUCCAUGGACAUUAAxSEQ-ID NO-289	884-904	A-108507.1	UUAAUGUCCAUGGACUACCUGAUSEQ-ID NO-474	882-904
AD-52970.1	A-108390.1	ACUGAGAAGACUACAUAUAAxSEQ-ID NO-290	345-365	A-108391.1	UUUAUAGUAGUUCUUCAGUUCSEQ-ID NO-475	343-365
AD-53015.1	A-108452.1	GAGCAACUAAACUAAUUAUxSEQ-ID NO-291	478-498	A-108453.1	AAUUAAGUUAGUUAGUUGCUUUEQ-ID NO-476	476-498
AD-53147.1	A-108618.1	AACCAACUAAUUGUAAAUUxSEQ-ID NO-292	1282-1302	A-108619.1	AUUUUUACCAUUUAGGUUGUUUUEQ-ID NO-477	1280-1302
AD-53103.1	A-108540.1	CCUAGAGAAGAUUACUCCAUXSEQ-ID NO-293	999-1019	A-108541.1	AUGGAGUAUUCUUCUCUAGGCCSEQ-ID NO-478	997-1019
AD-52969.1	A-108374.1	CAACAUUUUGAUCAGUCUUUxSEQ-ID NO-294	276-296	A-108375.1	AAAGACUGAUCAAUAUGUUGAGSEQ-ID NO-479	274-296
AD-53075.1	A-108562.1	ACAACAAAUUAUUAUUGAAUxSEQ-ID NO-295	1070-1090	A-108563.1	AUUCAAUAAUUGUUUGUUGUCUSEQ-ID NO-480	1068-1090
AD-52994.1	A-108398.1	ACAUUAAACUACAAGUCAAAxSEQ-ID NO-296	358-378	A-108399.1	UUUGACUUGUAGUUUAUAGUAGSEQ-ID NO-481	356-378
AD-52960.1	A-108324.1	CUAGUUAUUUCCUCCAGAAUxSEQ-ID NO-297	88-108	A-108325.1	AAUUCUGGAGGAAUAACUAGAGSEQ-ID NO-482	86-108
AD-53003.1	A-108448.1	AAGAGCAACUAAACUAAUAAxSEQ-ID NO-298	476-496	A-108449.1	UUAAGUAGUUAGUUGCUCUUCUSEQ-ID NO-483	474-496
AD-52995.1	A-108320.1	UUUAUUGUUCUCUAGUUAAUxSEQ-ID NO-299	76-96	A-108321.1	AAUAACUAGAGGACAAUAAAASEQ-ID NO-484	74-96
AD-53037.1	A-108428.1	CUCCUAGAAGAAAAAUUCUAXSEQ-ID NO-300	430-450	A-108429.1	UAGAAUUUUUUCUUCUAGGAGGCSEQ-ID NO-485	428-450

AD-53087.1	A-108566.1	AACAAACAUUAUUAUGAAUUX\$SEQ-ID NO-301	1072-1092	A-108567.1	AUUUUCAAUAUUAUGUUUGUUGU\$SEQ ID-NO-486	1070-1092
AD-53076.1	A-108578.1	GGAAAUACACGAAACCAUAUX\$SEQ-ID NO-302	1105-1125	A-108579.1	AUAGUUGGUUUCGUGAUUUCCCA\$SEQ ID-NO-487	1103-1125
AD-52975.1	A-108376.1	AACAUUUUUGAUCAGUCUUUX\$SEQ-ID NO-303	277-297	A-108377.1	AAAAGACUGAUCAAAUAUGUUGA\$SEQ ID-NO-488	275-297
AD-53138.1	A-108630.1	UGGAAGGUUAUACUCUAUAAA\$SEQ-ID NO-304	1365-1385	A-108631.1	UUUAUAGAGUAUAACCUUCCAUX\$SEQ ID-NO-489	1363-1385
AD-53091.1	A-108536.1	GGAGAACUACAAUAUGGUUUX\$SEQ-ID NO-305	948-968	A-108537.1	AAACCAUUAUUUGUAGUUCUCCCA\$SEQ ID-NO-490	946-968
AD-53124.1	A-108594.1	GAAACAAAGAUUUGGUGUUUX\$SEQ-ID NO-306	1174-1194	A-108595.1	AAACACCAAUUCUUGUUUUCG\$SEQ ID-NO-491	1172-1194
AD-53125.1	A-108610.1	AGUGUGGAGAAAACAACCUAA\$SEQ-ID NO-307	1271-1291	A-108611.1	UUAGGUUGUUUCUCCACACUCASE\$SEQ ID-NO-492	1269-1291
AD-53036.1	A-108412.1	GUCACUUGAACUCAACUCAA\$SEQ-ID NO-308	399-419	A-108413.1	UUUGAGUUGAGUUCAGUGACAU\$SEQ ID-NO-493	397-419
AD-53061.1	A-108526.1	GAUGGAUCACAAAACUCAAUX\$SEQ-ID NO-309	919-939	A-108527.1	AUUGAAGUUUUGUGAUCCAUCUASE\$SEQ ID-NO-494	917-939
AD-53093.1	A-108568.1	ACAAACAUUAUUAUGAAUUX\$SEQ-ID NO-310	1073-1093	A-108569.1	AAUAUCAAUAUUAUGUUUGUUG\$SEQ ID-NO-495	1071-1093
AD-53137.1	A-108614.1	UGUGGAGAAAACAACCUAAUX\$SEQ-ID NO-311	1273-1293	A-108615.1	AUUUAGGUUGUUUCUCCACACU\$SEQ ID-NO-496	1271-1293
AD-52999.1	A-108384.1	AUCAGUCUUUUUAUGAUCUAUX\$SEQ-ID NO-312	287-307	A-108385.1	AUAGAUCAUAAAAGACUGAUCA\$SEQ ID-NO-497	285-307
AD-53069.1	A-108560.1	GACAACAAACAUUAUUAUGAA\$SEQ-ID NO-313	1069-1089	A-108561.1	UUCAAUAUUAUGUUUGUUGUCU\$SEQ ID-NO-498	1067-1089
AD-53034.1	A-108474.1	CAACAGCAUAGUCAAAUAAA\$SEQ-ID NO-314	622-642	A-108475.1	UUUUUUUUGACUAUGCUGUUGGU\$SEQ ID-NO-499	620-642
AD-52976.1	A-108392.1	CUGAGAAGAACUACAUUAAA\$SEQ-ID NO-315	346-366	A-108393.1	UUUAUAUGUAGUUCUUCUCAGU\$SEQ ID-NO-500	344-366
AD-52996.1	A-108336.1	UGCUAUGUUAGACGAUGUAAA\$SEQ-ID NO-316	162-182	A-108337.1	UUUACAUCGUCUACAUAGCAA\$SEQ ID-NO-501	160-182
AD-53029.1	A-108488.1	AACCACAGAAUUUCUCUAUX\$SEQ-ID NO-317	680-700	A-108489.1	AUAGAGAAUUUCUGUGGUUCU\$SEQ ID-NO-502	678-700
AD-53020.1	A-108438.1	CUUCAACAAAAGUGAAUAUX\$SEQ-ID NO-318	451-471	A-108439.1	AUUUUUCACUUUUUGUUGAAGUA\$SEQ ID-NO-503	449-471
AD-53042.1	A-108414.1	UCACUUGAACUCAACUAAA\$SEQ-ID NO-319	400-420	A-108415.1	UUUUGAGUUGAGUUAAGUGACA\$SEQ ID-NO-504	398-420
AD-53011.1	A-108482.1	CAUAGUCAAAUAAAAGAAUAUX\$SEQ-ID NO-320	628-648	A-108483.1	UAUUUCUUUUUAUUGACUAUGC\$SEQ ID-NO-505	626-648

AD-52957.1	A-108370.1	CAAAACUCAACAUUUUGAUxSEQ-ID NO-321	268-288	A-108371.1	AUCAAAUAUGUUGAGUUUUUGAASEQ-ID NO-506	266-288
AD-53008.1	A-108434.1	UACUUCACAAAAAGUGAAUxSEQ-ID NO-322	449-469	A-108435.1	AUUUCACUUUUUGUUGAAGUAGASEQ-ID NO-507	447-469
AD-53065.1	A-108496.1	GACCCAGCAACUCUCAAGUUUxSEQ-ID NO-323	839-859	A-108497.1	AAACUUGAGAGUUGCUGGGUCUGSEQ-ID NO-508	837-859
AD-53115.1	A-108638.1	UUGAAUGAACUGAGGCAAAUxSEQ-ID NO-324	1427-1447	A-108639.1	AAUUUGCCUCAGUUCAUUCAAGSEQ-ID NO-509	1425-1447
AD-53012.1	A-108404.1	UAUAAACUACAAGUCAAAAAUxSEQ-ID NO-325	361-381	A-108405.1	AUUUUUGACUUGUAGUUUAUUGSEQ-ID NO-510	359-381
AD-53004.1	A-108464.1	AAACAAGAUAAUAGCAUCAAxSEQ-ID NO-326	559-579	A-108465.1	UUUGAUGCUAUUAUCUUGUUUUUxSEQ-ID NO-511	557-579
AD-53021.1	A-108454.1	CAACUAAACUAAUUAUCAAxSEQ-ID NO-327	481-501	A-108455.1	UUGAAUUAAGUUAGUUGUUGCUSEQ-ID NO-512	479-501
AD-52955.1	A-108338.1	GCUAUGUUGACGAUGUAAAAxSEQ-ID NO-328	163-183	A-108339.1	UUUUACAUCGUCUACAUAAGCAASEQ-ID NO-513	161-183
AD-53119.1	A-108608.1	ACUUGGGAUCAACAAGCAAAxSEQ-ID NO-329	1198-1218	A-108609.1	UUUUGCUUUGUGAUCCCAAGUAGSEQ-ID NO-514	1196-1218
AD-52990.1	A-108334.1	UUGCUAUGUUGACGAUGUAAXSEQ-ID NO-330	161-181	A-108335.1	UUACAUCGUCUACAUAAGCAAAUxSEQ-ID NO-515	159-181
AD-52964.1	A-108388.1	AACUGAGAAGAACUACAUUAUxSEQ-ID NO-331	344-364	A-108389.1	UAUAUGUAGUUCUUCUAGUUCSEQ-ID NO-516	342-364
AD-52973.1	A-108344.1	GAUGUAAAAUUUUGCCAAUxSEQ-ID NO-332	175-195	A-108345.1	AUUGGCUAAAAUUUUACAUCGUSEQ-ID NO-517	173-195
AD-53074.1	A-108546.1	ACUCCAUGUGAAGCAAUCUAxSEQ-ID NO-333	1013-1033	A-108547.1	UAGAUUGCUUCACUAUGGAGUAUxSEQ-ID NO-518	1011-1033
AD-53026.1	A-108440.1	UUCAACAAAAAGUGAAAUUUxSEQ-ID NO-334	452-472	A-108441.1	AAUAAUUCACUUUUUGUUGAAGUxSEQ-ID NO-519	450-472
AD-53062.1	A-108542.1	CUAGAGAAGAUUACUCCAUAxSEQ-ID NO-335	1000-1020	A-108543.1	UAUGGAGUAUAUCUUCUCUAGGCSEQ-ID NO-520	998-1020
AD-53114.1	A-108622.1	CAACCUAAUUGGUAAAUUAAXSEQ-ID NO-336	1284-1304	A-108623.1	UUAAUUAUACCAUUUAGGUUGUxSEQ-ID NO-521	1282-1304
AD-53082.1	A-108580.1	GAAAUACGAAACCAUAUAUxSEQ-ID NO-337	1106-1126	A-108581.1	UAUAGUUGGUUUCGUGAUUUCCSEQ-ID NO-522	1104-1126
AD-53035.1	A-108490.1	CCACAGAAAUUUCUCUAUCUxSEQ-ID NO-338	683-703	A-108491.1	AAGAUAGAGAAAUUUCUGUGGGUxSEQ-ID NO-523	681-703
AD-52978.1	A-108330.1	AAAUCAAGAUUUGCUAUGUUAxSEQ-ID NO-339	151-171	A-108331.1	UAACAUAGCAAUCUUGAUUUUGSEQ-ID NO-524	149-171
AD-53084.1	A-108518.1	ACAUUAAUUAACAUCGAAUAxSEQ-ID NO-340	898-918	A-108519.1	UAUUCGAUGUUGAAUUAUUGCCSEQ-ID NO-525	896-918

AD-52972.1	A-108328.1	CCAGAGCCAAAAUCAAGAUUUxSEQ-ID NO-341	142-162	A-108329.1	AAAUCUUGAUUUUGGCUCUGGAGSEQ-ID NO-526	140-162
AD-53002.1	A-108432.1	CUACUUAACAAAAAGUGAAAxSEQ-ID NO-342	448-468	A-108433.1	UUUCACUUUUUGUUGAAGUAGAASEQ-ID NO-527	446-468
AD-53078.1	A-108516.1	GACAUUAAUUAACAUCGAUxSEQ-ID NO-343	897-917	A-108517.1	AUUCGAUGUUGAAUUAUGUCCASEQ-ID NO-528	895-917
AD-53072.1	A-108514.1	GGACAUUAAUUAACAUCGAAxSEQ-ID NO-344	896-916	A-108515.1	UUCGAUGUUGAAUUAUGUCCAUSEQ-ID NO-529	894-916
AD-53005.1	A-108480.1	GCAUAGUCAAAUAAAAGAAUxSEQ-ID NO-345	627-647	A-108481.1	AUUUCUUUUUUUUGACUAUGCUGSEQ-ID NO-530	625-647
AD-53083.1	A-108502.1	CUCUCAAGUUUUUCAUGCUAxSEQ-ID NO-346	849-869	A-108503.1	UAGACAUGAAAACUUGAGAGUUSEQ-ID NO-531	847-869
AD-53102.1	A-108524.1	AUCGAAUAGAUGGAUCACAAxSEQ-ID NO-347	911-931	A-108525.1	UUUGUGAUCCAUCUAUUCGAUGUSEQ-ID NO-532	909-931
AD-53105.1	A-108572.1	ACAUAUAUUGAAUUAUUCUUxSEQ-ID NO-348	1077-1097	A-108573.1	AAAGAAUAUUCAAUAUAUGUUUSEQ-ID NO-533	1075-1097
AD-53090.1	A-108520.1	UUAAUUAACAUCGAUAUGAUxSEQ-ID NO-349	901-921	A-108521.1	AUCUAUUCGAUGUUGAAUUAUGSEQ-ID NO-534	899-921
AD-53010.1	A-108466.1	GAUAAUAGCAUCAAAGACCUUxSEQ-ID NO-350	565-585	A-108467.1	AAGGUCUUUGAUGCUAUUAUCUUSEQ-ID NO-535	563-585
AD-52998.1	A-108368.1	UGACAUUUUCAAACUCAAxSEQ-ID NO-351	258-278	A-108369.1	UUGAGUUUUUGAAAAUAGUCAUUSEQ-ID NO-536	256-278
AD-52992.1	A-108366.1	AAAUUAAUGACAUUUUCAAxSEQ-ID NO-352	251-271	A-108367.1	UUUGAAUAUGUCAUUAUUUGGSEQ-ID NO-537	249-271
AD-53068.1	A-108544.1	GAAGAUUACUCCAUGAGAAxSEQ-ID NO-353	1005-1025	A-108545.1	UUCACUAUGGAGUAUAUCUUCSEQ-ID NO-538	1003-1025
AD-53032.1	A-108442.1	AAUAAUUAGAAGAGCAACUAxSEQ-ID NO-354	467-487	A-108443.1	UUAGUUGCUCUUCUAAAUAUUUCSEQ-ID NO-539	465-487
AD-52967.1	A-108342.1	CGAUGUAAAAUUUAGCCAxSEQ-ID NO-355	174-194	A-108343.1	UUGGCUAAAAUUUUACAUCGUCSEQ-ID NO-540	172-194
AD-53096.1	A-108522.1	UUCAACUUCGAUAGAUGGAUxSEQ-ID NO-356	905-925	A-108523.1	AUCCAUCUAUUCGAUGUUGAAUUSEQ-ID NO-541	903-925
AD-53131.1	A-108612.1	GUGUGGAGAAAACAACUAAxSEQ-ID NO-357	1272-1292	A-108613.1	UUUAGGUUGUUUUUCCACACUCSEQ-ID NO-542	1270-1292
AD-52963.1	A-108372.1	UCAACAUUUUUGAUCAGUCUxSEQ-ID NO-358	275-295	A-108373.1	AAGACUGAUCAAUAUGUUGAGUSEQ-ID NO-543	273-295
AD-53089.1	A-108504.1	UCAGGUAGUCCAUGGACAUUxSEQ-ID NO-359	883-903	A-108505.1	UAAUGUCCAUGGACUACCUGAUASEQ-ID NO-544	881-903
AD-53044.1	A-108446.1	UUUAGAAGAGCAACUAACUAAxSEQ-ID NO-360	471-491	A-108447.1	UUAGUUAGUUGCUCUUCUAAUASEQ-ID NO-545	469-491

AD-52988.1	A-108396.1	UACAUAUAAACUACAAGUCAAxSEQ-ID NO-361	357-377	A-108397.1	UUGACUUGUAGUUUAUUGUAGUSe Q-ID NO-546	355-377
AD-53067.1	A-108528.1	GGAUCACAAAACUUCAAGAAxSEQ-ID NO-362	922-942	A-108529.1	UUCAUUGAAGUUUUGUGAUCCAUSEQ ID NO-547	920-942
AD-53009.1	A-108450.1	AGAGCAACUAAACUAAUUAUxSEQ-ID NO-363	477-497	A-108451.1	AUUAAGUUAGUUAGUUGCUCUUCSEQ ID NO-548	475-497
AD-53022.1	A-108470.1	ACCAACAGCAUAGUCAAAUAxSEQ-ID NO-364	620-640	A-108471.1	UUUUUUGACUAGCUGUUGGUUUSe Q-ID NO-549	618-640
AD-53016.1	A-108468.1	AACCAACAGCAUAGUCAAAUAxSEQ-ID NO-365	619-639	A-108469.1	UAUUUGACUAGCUGUUGGUUUASE Q-ID NO-550	617-639
AD-53007.1	A-108418.1	GAACUCAACUCAAACUUGAAxSEQ-ID NO-366	406-426	A-108419.1	UUCAAGUUUUGAGUUGAGUUAASEQ ID NO-551	404-426
AD-53148.1	A-108634.1	UACUCUAUAAAAUCAACCAAxSEQ-ID NO-367	1375-1395	A-108635.1	UUUGGUUGAUUUUAUAGAGUAUASE Q-ID NO-552	1373-1395
AD-53040.1	A-108476.1	CAGCAUAGUCAAAUAAAAGAAxSEQ-ID NO-368	625-645	A-108477.1	UUCUUUUAUUUGACUAGCUGUUSEQ ID NO-553	623-645
AD-53041.1	A-108492.1	GAAAUAAAGAAUUGUAAAACAUxSEQ-ID NO-369	748-768	A-108493.1	AUGUUUUAUUUUUUUAUUUCAUSEQ ID NO-554	746-768
AD-53039.1	A-108460.1	CUAACUAACUUAUUUCAAUAxSEQ-ID NO-370	484-504	A-108461.1	AUUUUGAAUUAAGUUAGUUAGUUSE Q-ID NO-555	482-504
AD-53139.1	A-108646.1	AUGAACUGAGGCAAAUUUAxSEQ-ID NO-371	1431-1451	A-108647.1	UUUAAAAUUGCCUCAGUUAUUCSEQ ID NO-556	1429-1451
AD-53144.1	A-108648.1	UGAACUGAGGCAAAUUUAxSEQ-ID NO-372	1432-1452	A-108649.1	UUUAAAAUUGCCUCAGUUAUUSEQ ID NO-557	1430-1452
AD-53142.1	A-108616.1	AAACAACCUAAAUGGUAAAUAxSEQ-ID NO-373	1281-1301	A-108617.1	UAUUUACCAUUUAGGUUGUUUCSEQ ID NO-558	1279-1301
AD-53108.1	A-108620.1	ACAACCUAAAUGGUAAAUAUxSEQ-ID NO-374	1283-1303	A-108621.1	UAUAUUUACCAUUUAGGUUGUUUSEQ ID NO-559	1281-1303
AD-53079.1	A-108532.1	AACGUGGGAGAAUACAUAxSEQ-ID NO-375	942-962	A-108533.1	UAUUUGUAGUUCUCCACGUUUCSEQ ID NO-560	940-962
AD-53133.1	A-108644.1	AAUGAACUGAGGCAAAUUUAxSEQ-ID NO-376	1430-1450	A-108645.1	UUAAAAUUGCCUCAGUUAUUCASEQ ID NO-561	1428-1450
AD-53104.1	A-108556.1	GUUGGAAGACUGGAAAGACAxSEQ-ID NO-377	1053-1073	A-108557.1	UUGUCUUUCCAGUCUCCAACUCSEQ ID NO-562	1051-1073
AD-53088.1	A-108582.1	UGGCAAUGUCCCAAUGCAAUxSEQ-ID NO-378	1149-1169	A-108583.1	AUUGCAUUGGGGACAUUGCCAGUSeQ ID NO-563	1147-1169
AD-53101.1	A-108508.1	GGUAGUCCAUGGACAUAAUUAxSEQ-ID NO-379	886-906	A-108509.1	AAUUAUUGUCCAUGGACUACCUGSEQ ID NO-564	884-906
AD-53000.1	A-108400.1	CAUAUAAACUACAAGUCAAAxSEQ-ID NO-380	359-379	A-108401.1	UUUUGACUUGUAGUUUAUAGUASE Q-ID NO-565	357-379

AD-53112.1	A-108590.1	AAUCCCGGAAACAAAGAUUUxSEQ-ID NO-381	1167-1187	A-108591.1	AAAUUUUUUUUCCGGGAUUGCSEQ-ID NO-566	1165-1187
AD-53107.1	A-108604.1	CUACUUGGGAUCACAAAGCAAxSEQ-ID NO-382	1196-1216	A-108605.1	UUGCUUUUGUGAUCCCAAGUAGAASEQ-ID NO-567	1194-1216
AD-53121.1	A-108640.1	UGAAUGAACUGAGGCAAAUUUxSEQ-ID NO-383	1428-1448	A-108641.1	AAAAUUUCCUCAGUUCAUUCAAASEQ-ID NO-568	1426-1448
AD-53046.1	A-108478.1	AGCAUAGUCAAAUAAAAGAAAxSEQ-ID NO-384	626-646	A-108479.1	UUUCUUUUUUUUGACUAGCUGUSEQ-ID NO-569	624-646
AD-53038.1	A-108444.1	AUUUAGAAGAGCAACUAACUAXSEQ-ID NO-385	470-490	A-108445.1	UAGUUAGUUGCUCUUCUAAAUAUSEQ-ID NO-570	468-490
AD-53140.1	A-108662.1	AGGCAAAUUUAAAAGGCAAUAXSEQ-ID NO-386	1439-1459	A-108663.1	UAUUGCCUUUUAAAUUUGCCUCASEQ-ID NO-571	1437-1459
AD-52987.1	A-108380.1	CAUAAUUUGAUCAGUCUUUUUAXSEQ-ID NO-387	279-299	A-108381.1	UAAAAAGACUGAUCAAUAUGUUSEQ-ID NO-572	277-299
AD-53130.1	A-108596.1	AAAACAAAGAUUUGGUGUUUxSEQ-ID NO-388	1175-1195	A-108597.1	AAAACACCAAAUCUUUGUUUCCSEQ-ID NO-573	1173-1195
AD-53106.1	A-108588.1	CAUCCCGGAAACAAAGAUUxSEQ-ID NO-389	1166-1186	A-108589.1	AAUCUUUUUUUCCGGGAUUGCASEQ-ID NO-574	1164-1186
AD-53081.1	A-108564.1	CAACAAACUUAUUAUUGAAUAXSEQ-ID NO-390	1071-1091	A-108565.1	UAUUCAAUAUAAUGUUUGUUGCSEQ-ID NO-575	1069-1091
AD-53118.1	A-108592.1	GGAAACAAAGAUUUGGUGUUxSEQ-ID NO-391	1173-1193	A-108593.1	AACACCAAAUCUUUGUUUCCGGSEQ-ID NO-576	1171-1193
AD-53136.1	A-108598.1	ACAAAGAUUUGGUGUUUUCUAXSEQ-ID NO-392	1178-1198	A-108599.1	UAGAAACACCAAAUCUUUGUUUSEQ-ID NO-577	1176-1198
AD-53127.1	A-108642.1	GAAUGAACUGAGGCAAAUUUAXSEQ-ID NO-393	1429-1449	A-108643.1	UAAAUUUGCCUCAGUUCAUUCAASEQ-ID NO-578	1427-1449
AD-53066.1	A-108512.1	CCAUGGACAUAAUUCACAUxSEQ-ID NO-394	892-912	A-108513.1	AUGUUGAAUUAUUGUCCAUGGACSEQ-ID NO-579	890-912
AD-53013.1	A-108420.1	AACUCAACUAAAACUUGAAAxSEQ-ID NO-395	407-427	A-108421.1	UUUCAAGUUUUUGAGUUGAGUUCASEQ-ID NO-580	405-427
AD-52991.1	A-108350.1	CAGUUGGGCAUGGUCUUAAAAXSEQ-ID NO-396	205-225	A-108351.1	UUUAAGACCAUGUCCCAACUGAASEQ-ID NO-581	203-225
AD-53099.1	A-108570.1	AACAUUAUUAUUGAAUUAUUCUxSEQ-ID NO-397	1076-1096	A-108571.1	AAGAAUAUUCAAUAUAAUGUUUGSEQ-ID NO-582	1074-1096
AD-52958.1	A-108386.1	ACCAGUGAAAUCAAAGAAGAAxSEQ-ID NO-398	316-336	A-108387.1	UUCUUCUUUGAUUUCACUGGUUUSEQ-ID NO-583	314-336
AD-53097.1	A-108538.1	GUUGGCCUAGAGAAGAUUAUAXSEQ-ID NO-399	993-1013	A-108539.1	UAUAUCUUCUCUAGGCCCAACCASEQ-ID NO-584	991-1013
AD-52966.1	A-108326.1	CUCCAGAGCCAAAUAAGAUxSEQ-ID NO-400	140-160	A-108327.1	AUCUUGAUUUUGGCUCUGGAGAUSEQ-ID NO-585	138-160

AD-53145.1	A-108664.1	GGCAAAUUUAAAAGGCAUAAxSEQ-ID NO-401	1440-1460	A-108665.1	UUUUGCCUUUUAAAUUUGCCUCSEQ-ID NO-586	1438-1460
AD-53113.1	A-108606.1	UACUUGGGGAUCACAAAGCAAAxSEQ-ID NO-402	1197-1217	A-108607.1	UUUGCUUUGUGAUCCCAAGUAGASEQ-ID NO-587	1195-1217
AD-52993.1	A-108382.1	GAUCAGUCUUUUUAUGAUCUAXSEQ-ID NO-403	286-306	A-108383.1	UAGAUCAUAAAAAGACUGAUCAASEQ-ID NO-588	284-306
AD-53031.1	A-108426.1	GAAAGCCUCCUAGAAGAAAAxSEQ-ID NO-404	424-444	A-108427.1	UUUUUCUUCUAGGAGGCUUUCAASEQ-ID NO-589	422-444
AD-53017.1	A-108484.1	AGUCAAAUAAAAGAAUAGAAxSEQ-ID NO-405	631-651	A-108485.1	UUCUAUUUCUUUUUUUUGACUAUSEQ-ID NO-590	629-651
AD-53143.1	A-108632.1	AUACUCUAUAAAAUCAACCAxSEQ-ID NO-406	1374-1394	A-108633.1	UUGGUUGAUUUUAUAGAGUAUAASEQ-ID NO-591	1372-1394
AD-53149.1	A-108650.1	GAACUGAGGCAAAUUUAAAAxSEQ-ID NO-407	1433-1453	A-108651.1	UUUUUAAAAUUUGCCUCAGUUCAUSEQ-ID NO-592	1431-1453_G21A
AD-53059.1	A-108494.1	AGACCCAGCAACUCUCAAGUUXSEQ-ID NO-408	838-858	A-108495.1	AACUUGAGAGUUGCUGGGUCUGASEQ-ID NO-593	836-858
AD-53006.1	A-108402.1	AUUAAACUACAAGUCAAAAAxSEQ-ID NO-409	360-380	A-108403.1	UUUUUGACUUGUAGUUUAUUGUSEQ-ID NO-594	358-380
AD-53025.1	A-108424.1	UGAAAGCCUCCUAGAAGAAAAxSEQ-ID NO-410	423-443	A-108425.1	UUUUCUUCUAGGAGGCUUUCAGSEQ-ID NO-595	421-443
AD-53085.1	A-108534.1	GGGAGAACUACAAUUAUGGUUXSEQ-ID NO-411	947-967	A-108535.1	AACCAUUAUUGUAGUUCUCCACSEQ-ID NO-596	945-967
AD-52984.1	A-108332.1	AGAUUUGCUAUGUUAGACGAUXSEQ-ID NO-412	157-177	A-108333.1	AUCGUCUAACAUAGCAAUCUUGSEQ-ID NO-597	155-177
AD-53023.1	A-108486.1	GAACCCACAGAAUUUUCUCUAXSEQ-ID NO-413	679-699	A-108487.1	UAGAGAAUUUUCUGUGGUUCUUSEQ-ID NO-598	677-699
AD-53014.1	A-108436.1	ACUUCAACAAAAGUGAAUAxSEQ-ID NO-414	450-470	A-108437.1	UAUUUCACUUUUUGUUGAAGUAGSEQ-ID NO-599	448-470
AD-53060.1	A-108510.1	AGUCCAUGGACAUUAUUCAAXSEQ-ID NO-415	889-909	A-108511.1	UUGAAUUAUUGUCCAUGGACUACSEQ-ID NO-600	887-909
AD-53110.1	A-108652.1	AACUGAGGCAAAUUUAAAAGAxSEQ-ID NO-416	1434-1454	A-108653.1	UCUUUUAAAAUUUGCCUCAGUUCASEQ-ID NO-601	1432-1454_G21A
AD-52980.1	A-108362.1	GGGCCAAAUUAUUGACAUUUXSEQ-ID NO-417	246-266	A-108363.1	AAUAUGUCAUUAUUUUGGCCUUSEQ-ID NO-602	244-266
AD-53109.1	A-108636.1	AUCCAUCCAACAGAUUCAGAAxSEQ-ID NO-418	1402-1422	A-108637.1	UUCUGAAUCUGUUGGAUGGAUCASEQ-ID NO-603	1400-1422
AD-53141.1	A-108600.1	AAGAUUUGGUGUUUUCUACUUXSEQ-ID NO-419	1181-1201	A-108601.1	AAGUAGAAAACACCAAUCUUUGSEQ-ID NO-604	1179-1201
AD-53126.1	A-108626.1	GUCUCAAAAUUGGAAGGUUAUAXSEQ-ID NO-420	1356-1376	A-108627.1	UAUAACCUCCAUUUUGAGACUUSEQ-ID NO-605	1354-1376

AD-53116.1	A-108654.1	ACUGAGGCCAAUUUAAAAGGAxSEQ-ID NO-421	1435-1455	A-108655.1	UCCUUUUAAAUUUGCCUCAGUUCSEQ-ID NO-606	1433-1455_C21A
AD-52997.1	A-108352.1	GGGACAUGGUCUUAAAGACUUXSEQ-ID NO-422	210-230	A-108353.1	AAGUCUUUAAGACCAUGUCCCASEQ-ID NO-607	208-230
AD-53120.1	A-108624.1	AUGGUAAAUAACAACCAxSEQ-ID NO-423	1292-1312	A-108625.1	UUGGUUUUUUAUUUACCAUUUUFQ-ID NO-608	1290-1312
AD-53070.1	A-108576.1	GGGAAUACACGAAACCAUAxSEQ-ID NO-424	1104-1124	A-108577.1	UAGUUGGUUUCGUGAUUCCCASEQ-ID NO-609	1102-1124
AD-53028.1	A-108472.1	CCAACAGCAUAGUCAAAUAAxSEQ-ID NO-425	621-641	A-108473.1	UUUAAUUUGACUAUGCUGUUGGUUFQ-ID NO-610	619-641
AD-53146.1	A-108602.1	UUUUCUACUUGGGAUCACAAxSEQ-ID NO-426	1192-1212	A-108603.1	UUUGUGAUCCCAAGUAGAAAACASEQ-ID NO-611	1190-1212
AD-52982.1	A-108394.1	AGAACUACAUUAUAACUACAaxSEQ-ID NO-427	352-372	A-108395.1	UUGUAGUUUAUAGUAGUUCUUCFQ-ID NO-612	350-372
AD-53111.1	A-108668.1	AGAGUAUGUGUAAAAUCUGUXSEQ-ID NO-428	1915-1935	A-108669.1	ACAGAUUUUUACACAUACUCUGUSEQ-ID NO-613	1913-1935
AD-53045.1	A-108462.1	AAAACAAGAUAAUAGCAUCAaxSEQ-ID NO-429	558-578	A-108463.1	UUGAUGCUAAUUAUCUUGUUUUUCSEQ-ID NO-614	556-578
AD-53123.1	A-108672.1	AGUAUGUGUAAAAUCUGUAAxSEQ-ID NO-430	1917-1937	A-108673.1	UUACAGAUUUUUACACAUACUCUSEQ-ID NO-615	1915-1937
AD-53018.1	A-108406.1	AGUCAAAAAUGAAGAGGUAAAaxSEQ-ID NO-431	372-392	A-108407.1	UUUACCUCUUCAUUUUUGACUUGSEQ-ID NO-616	370-392
AD-52956.1	A-108354.1	GGACAUGGUCUUAAGACUUUXSEQ-ID NO-432	211-231	A-108355.1	AAAGUCUUUAAGACCAUGUCCCASEQ-ID NO-617	209-231
AD-53134.1	A-108660.1	GAGGCAAAUUUAAAAGGCAUxSEQ-ID NO-433	1438-1458	A-108661.1	AUUGCCUUUUAAAUUUGCCUCAGSEQ-ID NO-618	1436-1458
AD-52968.1	A-108358.1	GUCUUAAAGACUUUGUCCAUAxSEQ-ID NO-434	218-238	A-108359.1	UAUGGACAAAGUCUUUAAGACCASEQ-ID NO-619	216-238
AD-53122.1	A-108656.1	CUGAGGCAAAUUUAAAAGGCAxSEQ-ID NO-435	1436-1456	A-108657.1	UGCCUUUUAAAUUUGCCUCAGUUSEQ-ID NO-620	1434-1456
AD-53100.1	A-108586.1	GCAAUCCCGGAAAAACAAGAUxSEQ-ID NO-436	1165-1185	A-108587.1	AUCUUUGUUUCCGGGAUUGCAUSEQ-ID NO-621	1163-1185
AD-53128.1	A-108658.1	UGAGGCAAAUUUAAAAGGCAaxSEQ-ID NO-437	1437-1457	A-108659.1	UUGCCUUUUAAAUUUGCCUCAGUSEQ-ID NO-622	1435-1457
AD-53043.1	A-108430.1	UCUACUUAACAAAAAGUGAAxSEQ-ID NO-438	447-467	A-108431.1	UUCACUUUUUGUUGAAGUAGAAUSEQ-ID NO-623	445-467
AD-53135.1	A-108676.1	UAUGUGUAAAAUCUGUAAUAXSEQ-ID NO-439	1919-1939	A-108677.1	UAUUACAGAUUUUUACACAUACUSEQ-ID NO-624	1917-1939
AD-53094.1	A-108584.1	AAUGCAAUCCCGGAAAAACAAxSEQ-ID NO-440	1162-1182	A-108585.1	UUUGUUUUCGGGAUUGCAUUGGUFQ-ID NO-625	1160-1182

AD-53019.1	A-108422.1	CUUGAAAGCCUCCUAGAAGAAxSEQ-ID NO-441	421-441	A-108423.1	UUCUUCUAGGAGGCUUUCAGUUSEQ-ID NO-626	419-441
AD-53129.1	A-108674.1	GUAUGUGUAAAAUCUGUAAUxSEQ-ID NO-442	1918-1938	A-108675.1	AUUACAGAUUUUUACACAUACUCSEQ-ID NO-627	1916-1938
AD-53150.1	A-108666.1	CAGAGUAUGUGUAAAAUCUUXSEQ-ID NO-443	1914-1934	A-108667.1	AAGAUUUUUACACAUACUCUGSEQ-ID NO-628	1912-1934_G21U
AD-53117.1	A-108670.1	GAGUAUGUGUAAAAUCUGUAXSEQ-ID NO-444	1916-1936	A-108671.1	UACAGAUUUUUACACAUACUCUGSEQ-ID NO-629	1914-1936
AD-52985.1	A-108348.1	UCAGUUGGGACAUGGUCUUAAXSEQ-ID NO-445	204-224	A-108349.1	UUAAGACCAUGUCCCAACUGAAGSEQ-ID NO-630	202-224
AD-52962.1	A-108356.1	GGUCUUAAGACUUGUCCAUXSEQ-ID NO-446	217-237	A-108357.1	AUGGACAAAGUCUUUAAGACCAUSEQ-ID NO-631	215-237
AD-52974.1	A-108360.1	UCUUAAGACUUGUCCAUAAXSEQ-ID NO-447	219-239	A-108361.1	UUAUGGACAAAGUCUUUAAGACCSEQ-ID NO-632	217-239
AD-52979.1	A-108346.1	UUCAGUUGGGACAUGGUCUUAxSEQ-ID NO-448	203-223	A-108347.1	UAAGACCAUGUCCCAACUGAAGGSEQ-ID NO-633	201-223

The symbol “x” indicates that the sequence contains a GalNAc conjugate.

Table 8. Modified sense and antisense strand sequences of ANGPTL3 GalNac-conjugated dsRNAs

Duplex ID	Sense OligoName	Sense Sequence (SEQ ID NOS 634-818, respectively, in order of appearance)	Antisense OligoName	Antisense Sequence (SEQ ID NOS 819-1003, respectively, in order of appearance)
AD-53063.1	A-108558.1	AfaAfgAfcAfaCfAfaCfaUfuAfuAfuUfL96SEQ-ID-NO-634	A-108559.1	aAfuAfuAfaUfgUfuugUfuGfuCfuUfusCfscSEQ-ID-NO-819
AD-52965.1	A-108310.1	AfcAfaUfuAfaGfCfUfcCfuUfcUfuUfuUfL96SEQ-ID-NO-635	A-108311.1	aAfaAfaGfaAfgGfagcUfuAfaUfuGfusGfscSEQ-ID-NO-820
AD-53030.1	A-108410.1	UfgUfcAfcUfuGfAfaAfcUfcAfaCfuCfaAfl96SEQ-ID-NO-636	A-108411.1	uUfgAfgUfuGfaGfuucAfaGfuGfaCfasUfsaSEQ-ID-NO-821
AD-52953.1	A-108306.1	UfcAfcAfaUfuAfaGfCfUfcCfuUfcUfuUfL96SEQ-ID-NO-637	A-108307.1	aAfaGfaAfgGfaGfcuuAfaUfuGfuGfasAfsaSEQ-ID-NO-822
AD-53001.1	A-108416.1	CfuUfgAfaCfuCfAfaAfcUfcAfaAfaCfuUfL96SEQ-ID-NO-638	A-108417.1	aAfgUfuUfuGfaGfuugAfgUfuCfaAfgsUfsgSEQ-ID-NO-823
AD-53080.1	A-108548.1	CfuCfcAfuAfgUfGfAfaGfcAfaUfcUfaAfl96SEQ-ID-NO-639	A-108549.1	uUfaGfaUfuGfcUfucaCfuAfuGfgAfgsUfsaSEQ-ID-NO-824
AD-52971.1	A-108312.1	CfaAfuUfaAfgCfUfcCfuCfuUfuUfuAfl96SEQ-ID-NO-640	A-108313.1	uAfaAfaAfgAfaGfgagCfuUfaAfuUfgsUfsgSEQ-ID-NO-825
AD-53071.1	A-108498.1	AfcCfcAfgCfaAfcUfcUfcAfaGfuUfuUfL96SEQ-ID-NO-641	A-108499.1	aAfaAfcUfuGfaGfaguUfgCfuGfgGfusCfsuSEQ-ID-NO-826
AD-53024.1	A-108408.1	GfaAfuAfuGfuCfAfcUfuUfgAfaCfuCfaAfl96SEQ-ID-NO-642	A-108409.1	uUfgAfgUfuCfaAfgugAfcAfuAfuUfcsUfsuSEQ-ID-NO-827
AD-52977.1	A-108314.1	AfaUfuAfaGfcUfCfCfuUfcUfuUfuUfaUfL96SEQ-ID-NO-643	A-108315.1	aUfaAfaAfaGfaAfggaGfcUfuAfaUfusGfsuSEQ-ID-NO-828
AD-53064.1	A-108574.1	CfaUfuAfuAfuUfGfAfaUfaUfuCfuUfuUfL96SEQ-ID-NO-644	A-108575.1	aAfaAfgAfaUfaUfucaAfuAfuAfuUfgsUfsuSEQ-ID-NO-829
AD-53033.1	A-108458.1	AfcUfaAfcUfaAfcUfuAfaUfuCfaAfaAfl96SEQ-ID-NO-645	A-108459.1	uUfuUfgAfaUfuAfguUfaGfuUfaGfusUfsgSEQ-ID-NO-830
AD-52954.1	A-108322.1	UfuAfuUfgUfuCfCfUfcUfaGfuUfaUfuUfL96SEQ-ID-NO-646	A-108323.1	aAfaUfaAfcUfaGfaggAfaCfaAfuAfasAfsaSEQ-ID-NO-831
AD-53098.1	A-108554.1	CfaUfaGfuGfaAfgCfaAfuCfuAfaUfuAfl96SEQ-ID-NO-647	A-108555.1	uAfaUfuAfgAfuUfgcuUfcAfcUfaUfgsGfsaSEQ-ID-NO-832
AD-53092.1	A-108552.1	CfcAfuAfgUfgAfaGfCfaAfuCfuAfaUfuUfL96SEQ-ID-NO-648	A-108553.1	aAfuUfaGfaUfuGfcuuCfaCfuAfuGfgsAfsaSEQ-ID-NO-833
AD-53073.1	A-108530.1	GfaUfcAfcAfaAfcUfcUfaUfgAfaAfl96SEQ-ID-NO-649	A-108531.1	uUfuCfaUfuGfaAfguuUfuGfuGfaUfcsCfsaSEQ-ID-NO-834
AD-53132.1	A-108628.1	AfuGfgAfaGfgUfuAfuAfcUfcUfaUfaAfl96SEQ-ID-NO-650	A-108629.1	uUfaUfaGfaGfuAfuuaCfcUfuCfcAfuUfsuSEQ-ID-NO-835

AD-53086.1	A-108550.1	UfcCfaUfaGfuGfAfAfgCfaAfuCfuAfaUfL96SEQ-ID-NO-651	A-108551.1	aUfuAfgAfuUfgCfuucAfcUfaUfgGfasGfsuSEQ-ID-NO-836
AD-52961.1	A-108340.1	CfuAfuGfuUfaGfAfCfGfuGfuAfaAfaAfl96SEQ-ID-NO-652	A-108341.1	uUfuUfuAfcAfuCfGucUfaAfcAfuAfgsCfsaSEQ-ID-NO-837
AD-52983.1	A-108316.1	AfuUfaAfgCfuCfCfUfuCfuUfuUfuAfuUfL96SEQ-ID-NO-653	A-108317.1	aAfuAfaAfaAfgAfggAfgCfuUfaAfusUfsgSEQ-ID-NO-838
AD-53027.1	A-108456.1	AfaCfuAfaCfuAfAfCfuUfaAfuUfcAfaAfl96SEQ-ID-NO-654	A-108457.1	uUfuGfaAfuUfaAfguuAfgUfuAfgUfusGfscSEQ-ID-NO-839
AD-52986.1	A-108364.1	GfgCfcAfaAfuUfAfAfuGfaCfaUfaUfuUfL96SEQ-ID-NO-655	A-108365.1	aAfaUfaUfgUfcAfuuaAfuUfuGfgCfcsCfsuSEQ-ID-NO-840
AD-52989.1	A-108318.1	UfuUfuAfuUfgUfUfCfcUfcUfaGfuUfaUfL96SEQ-ID-NO-656	A-108319.1	aUfaAfcUfaGfaGfgaaCfaAfuAfaAfasAfgsSEQ-ID-NO-841
AD-52981.1	A-108378.1	AfcAfuAfuUfuGfAfUfcAfgUfcUfuUfuUfL96SEQ-ID-NO-657	A-108379.1	aAfaAfaGfaCfuGfaucAfaAfuAfuGfusUfsgSEQ-ID-NO-842
AD-53077.1	A-108500.1	CfcCfaGfcAfaCfUfCfuCfaAfgUfuUfuUfL96SEQ-ID-NO-658	A-108501.1	aAfaAfaCfuUfgAfgagUfuGfcUfgGfgsUfscSEQ-ID-NO-843
AD-53095.1	A-108506.1	CfaGfgUfaGfuCfCfAfuGfgAfcAfuUfaAfl96SEQ-ID-NO-659	A-108507.1	uUfaAfuGfuCfcAfuggAfcUfaCfcUfgsAfsuSEQ-ID-NO-844
AD-52970.1	A-108390.1	AfcUfgAfgAfaGfAfAfcUfaCfaUfaUfaAfl96SEQ-ID-NO-660	A-108391.1	uUfaUfaUfgUfaGfuucUfuCfuCfaGfusUfscSEQ-ID-NO-845
AD-53015.1	A-108452.1	GfaGfcAfaCfuAfAfCfuAfaCfuUfaAfuUfL96SEQ-ID-NO-661	A-108453.1	aAfuUfaAfgUfuAfguuAfgUfuGfcUfcsUfsuSEQ-ID-NO-846
AD-53147.1	A-108618.1	AfaCfaAfcCfuAfAfAfuGfgUfaAfaUfaUfL96SEQ-ID-NO-662	A-108619.1	aUfaUfuUfaCfcAfuuuAfgGfuUfgUfusUfsuSEQ-ID-NO-847
AD-53103.1	A-108540.1	CfcUfaGfaGfaAfGfAfuAfuAfcUfcCfaUfL96SEQ-ID-NO-663	A-108541.1	aUfgGfaGfuAfuAfucuUfcUfcUfaGfgsCfscSEQ-ID-NO-848
AD-52969.1	A-108374.1	CfaAfcAfuAfuUfUfGfaUfcAfgUfcUfuUfL96SEQ-ID-NO-664	A-108375.1	aAfaGfaCfuGfaUfcaaAfuAfuGfuUfgsAfgsSEQ-ID-NO-849
AD-53075.1	A-108562.1	AfcAfaCfaAfaCfAfUfuAfuAfuUfgAfaUfL96SEQ-ID-NO-665	A-108563.1	aUfuCfaAfuAfuAfaugUfuUfgUfuGfusCfsuSEQ-ID-NO-850
AD-52994.1	A-108398.1	AfcAfuAfuAfaAfCfUfaCfaAfgUfcAfaAfl96SEQ-ID-NO-666	A-108399.1	uUfuGfaCfuUfgUfaguUfuAfuAfuGfusAfgsSEQ-ID-NO-851
AD-52960.1	A-108324.1	CfuAfgUfuAfuUfUfCfcUfcCfaGfaAfuUfL96SEQ-ID-NO-667	A-108325.1	aAfuUfcUfgGfaGfgaaAfuAfaCfuAfgsAfgsSEQ-ID-NO-852
AD-53003.1	A-108448.1	AfaGfaGfcAfaCfUfAfaCfuAfaCfuUfaAfl96SEQ-ID-NO-668	A-108449.1	uUfaAfgUfuAfgUfuagUfuGfcUfcUfusCfsuSEQ-ID-NO-853
AD-52995.1	A-108320.1	UfuUfaUfuGfuUfCfCfuCfuAfgUfuAfuUfL96SEQ-ID-NO-669	A-108321.1	aAfuAfaCfuAfgAfggaAfcAfaUfaAfasAfsaSEQ-ID-NO-854
AD-53037.1	A-108428.1	CfuCfcUfaGfaAfGfAfaAfaAfuCfuAfl96SEQ-ID-NO-670	A-108429.1	uAfgAfaUfuUfuUfucuUfcUfaGfgAfgsGfscSEQ-ID-NO-855

AD-53087.1	A-108566.1	AfaCfaAfaCfaUfUfAfuAfuUfgAfaUfaUfL96SEQ-ID-NO-671	A-108567.1	aUfaUfuCfaAfuAfuaaUfgUfuUfgUfusGfsuSEQ-ID-NO-856
AD-53076.1	A-108578.1	GfgAfaAfuCfaCfGfAfaAfcCfaAfcUfaUfL96SEQ-ID-NO-672	A-108579.1	aUfaGfuUfgGfuUfucgUfgAfuUfuCfcsCfsaSEQ-ID-NO-857
AD-52975.1	A-108376.1	AfaCfaUfaUfuUfGfAfuCfaGfuCfuUfuUfL96SEQ-ID-NO-673	A-108377.1	aAfaAfgAfcUfgAfuaAfaUfaUfgUfusGfsaSEQ-ID-NO-858
AD-53138.1	A-108630.1	UfgGfaAfgGfuUfAfUfaCfuCfuAfuAfaAfl96SEQ-ID-NO-674	A-108631.1	uUfuAfuAfgAfgUfaaaAfcCfuUfcCfasUfsuSEQ-ID-NO-859
AD-53091.1	A-108536.1	GfgAfgAfaCfuAfcAfaAfuAfuGfgUfuUfL96SEQ-ID-NO-675	A-108537.1	aAfaCfcAfuAfuUfuguAfgUfuCfuCfcsCfsaSEQ-ID-NO-860
AD-53124.1	A-108594.1	GfaAfaAfcAfaAfGfAfuUfuGfgUfgUfuUfL96SEQ-ID-NO-676	A-108595.1	aAfaCfaCfcAfaAfucuUfuGfuUfuUfcsCfsgSEQ-ID-NO-861
AD-53125.1	A-108610.1	AfgUfgUfgGfaGfAfAfaAfcAfaCfcUfaAfl96SEQ-ID-NO-677	A-108611.1	uUfaGfgUfuGfuUfuucUfcCfaCfaCfusCfsaSEQ-ID-NO-862
AD-53036.1	A-108412.1	GfuCfaCfuUfgAfAfcfuCfaAfcUfcAfaAfl96SEQ-ID-NO-678	A-108413.1	uUfuGfaGfuUfgAfguuCfaAfgUfgAfcsAfsuSEQ-ID-NO-863
AD-53061.1	A-108526.1	GfaUfgGfaUfcAfcAfaAfaCfuUfcAfaUfL96SEQ-ID-NO-679	A-108527.1	aUfuGfaAfgUfuUfuguGfaUfcCfaUfcsUfsaSEQ-ID-NO-864
AD-53093.1	A-108568.1	AfcAfaAfcAfuUfAfUfaUfuGfaAfuAfuUfL96SEQ-ID-NO-680	A-108569.1	aAfuAfuUfcAfaUfaaaAfuGfuUfuGfusUfsgSEQ-ID-NO-865
AD-53137.1	A-108614.1	UfgUfgGfaGfaAfAfAfcAfaCfcUfaAfaUfL96SEQ-ID-NO-681	A-108615.1	aUfuUfaGfgUfuGfuuuUfcUfcCfaCfasCfsuSEQ-ID-NO-866
AD-52999.1	A-108384.1	AfuCfaGfuCfuUfUfUfuAfuGfaUfcUfaUfL96SEQ-ID-NO-682	A-108385.1	aUfaGfaUfcAfuAfaaaAfgAfcUfgAfusCfsaSEQ-ID-NO-867
AD-53069.1	A-108560.1	GfaCfaAfcAfaAfcAfuUfaUfaUfuGfaAfl96SEQ-ID-NO-683	A-108561.1	uUfcAfaUfaUfaAfuguUfuGfuUfgUfcsUfsuSEQ-ID-NO-868
AD-53034.1	A-108474.1	CfaAfcAfgCfaUfAfGfuCfaAfaUfaAfaAfl96SEQ-ID-NO-684	A-108475.1	uUfuUfaUfuUfgAfcuaUfgCfuGfuUfgsGfsuSEQ-ID-NO-869
AD-52976.1	A-108392.1	CfuGfaGfaAfgAfAfcfuAfcAfuAfuAfaAfl96SEQ-ID-NO-685	A-108393.1	uUfuAfuAfuGfuAfguuCfuUfcUfcAfgsUfsuSEQ-ID-NO-870
AD-52996.1	A-108336.1	UfgCfuAfuGfuUfAfGfaCfGfuGfuAfaAfl96SEQ-ID-NO-686	A-108337.1	uUfuAfcAfuCfGufcuaAfcAfuAfgCfasAfsaSEQ-ID-NO-871
AD-53029.1	A-108488.1	AfaCfcCfaCfaGfAfAfaUfuUfcUfcUfaUfL96SEQ-ID-NO-687	A-108489.1	aUfaGfaGfaAfaUfuucUfgUfgGfgUfusCfsuSEQ-ID-NO-872
AD-53020.1	A-108438.1	CfuUfcAfaCfaAfAfAfaGfuGfaAfaUfaUfL96SEQ-ID-NO-688	A-108439.1	aUfaUfuUfcAfcUfuuuUfgUfuGfaAfgsUfsaSEQ-ID-NO-873
AD-53042.1	A-108414.1	UfcAfcUfuGfaAfcUfcAfaCfuCfaAfaAfl96SEQ-ID-NO-689	A-108415.1	uUfuUfgAfgUfuGfaguUfcAfaGfuGfasCfsaSEQ-ID-NO-874
AD-53011.1	A-108482.1	CfaUfaGfuCfaAfaUfaAfaAfgAfaAfuAfl96SEQ-ID-NO-690	A-108483.1	uAfuUfuCfuUfuUfauuUfgAfcUfaUfgsCfsuSEQ-ID-NO-875

AD-52957.1	A-108370.1	CfaAfaAfaCfuCfAfAfcAfuAfuUfuGfaUfL96SEQ-ID-NO-691	A-108371.1	aUfcAfaAfuAfuGfuugAfgUfuUfuUfsgAfsaSEQ-ID-NO-876
AD-53008.1	A-108434.1	UfaCfuUfcAfaCfAfAfaAfaGfuGfaAfaUfL96SEQ-ID-NO-692	A-108435.1	aUfuUfcAfcUfuUfuugUfuGfaAfgUfasGfsaSEQ-ID-NO-877
AD-53065.1	A-108496.1	GfaCfcCfaGfcAfAfCfuCfuCfaAfgUfuUfL96SEQ-ID-NO-693	A-108497.1	aAfaCfuUfgAfgAfguuGfcUfgGfgUfcsUfsgSEQ-ID-NO-878
AD-53115.1	A-108638.1	UfuGfaAfuGfaAfCfUfgAfgGfcAfaAfuUfL96SEQ-ID-NO-694	A-108639.1	aAfuUfuGfcCfuCfaguUfcAfuUfcAfasAfsGSEQ-ID-NO-879
AD-53012.1	A-108404.1	UfaUfaAfaCfuAfCfAfaGfuCfaAfaAfaUfL96SEQ-ID-NO-695	A-108405.1	aUfuUfuUfgAfcUfuguAfgUfuUfaUfasUfsgSEQ-ID-NO-880
AD-53004.1	A-108464.1	AfaAfcAfaGfaUfAfAfuAfgCfaUfcAfaAfl96SEQ-ID-NO-696	A-108465.1	uUfuGfaUfgCfuAfuuaUfcUfuGfuUfusUfsuSEQ-ID-NO-881
AD-53021.1	A-108454.1	CfaAfcUfaAfcUfAfAfcUfuAfaUfuCfaAfl96SEQ-ID-NO-697	A-108455.1	uUfgAfaUfuAfaGfuuaGfuUfaGfuUfsgCfsuSEQ-ID-NO-882
AD-52955.1	A-108338.1	GfcUfaUfgUfuAfGfAfcGfaUfgUfaAfaAfl96SEQ-ID-NO-698	A-108339.1	uUfuUfaCfaUfcGfucuAfaCfaUfaGfcsAfsaSEQ-ID-NO-883
AD-53119.1	A-108608.1	AfcUfuGfgGfaUfCfAfcAfaAfgCfaAfaAfl96SEQ-ID-NO-699	A-108609.1	uUfuUfgCfuUfuGfugaUfcCfcAfaGfusAfsGSEQ-ID-NO-884
AD-52990.1	A-108334.1	UfuGfcUfaUfgUfUfAfgAfcGfaUfgUfaAfl96SEQ-ID-NO-700	A-108335.1	uUfaCfaUfcGfuCfuuaCfaUfaGfcAfasAfsuSEQ-ID-NO-885
AD-52964.1	A-108388.1	AfaCfuGfaGfaAfGfAfaCfuAfcAfuAfuAfl96SEQ-ID-NO-701	A-108389.1	uAfuAfuGfuAfgUfucuUfcUfcAfgUfusCfscSEQ-ID-NO-886
AD-52973.1	A-108344.1	GfaUfgUfaAfaAfAfUfuUfuAfgCfcAfaUfL96SEQ-ID-NO-702	A-108345.1	aUfuGfgCfuAfaAfauuUfuUfaCfaUfcsGfsuSEQ-ID-NO-887
AD-53074.1	A-108546.1	AfcUfcCfaUfaGfUfGfaAfgCfaAfuCfuAfl96SEQ-ID-NO-703	A-108547.1	uAfgAfuUfgCfuUfcacUfaUfgGfaGfusAfsuSEQ-ID-NO-888
AD-53026.1	A-108440.1	UfuCfaAfcAfaAfAfAfgUfgAfaAfuAfuUfL96SEQ-ID-NO-704	A-108441.1	aAfuAfuUfuCfaCfuuuUfuGfuUfgAfasGfsuSEQ-ID-NO-889
AD-53062.1	A-108542.1	CfuAfgAfgAfaGfAfUfaUfaCfuCfcAfuAfl96SEQ-ID-NO-705	A-108543.1	uAfuGfgAfgUfaUfaucUfuCfuCfuAfgsGfscSEQ-ID-NO-890
AD-53114.1	A-108622.1	CfaAfcCfuAfaAfUfGfgUfaAfaUfaUfaAfl96SEQ-ID-NO-706	A-108623.1	uUfaUfaUfuUfaCfcauUfuAfgGfuUfsgUfsuSEQ-ID-NO-891
AD-53082.1	A-108580.1	GfaAfaUfcAfcGfAfAfaCfcAfaCfuAfuAfl96SEQ-ID-NO-707	A-108581.1	uAfuAfgUfuGfgUfuucGfuGfaUfuUfcsCfscSEQ-ID-NO-892
AD-53035.1	A-108490.1	CfcAfcAfgAfaAfUfUfuCfuCfuAfuCfuUfL96SEQ-ID-NO-708	A-108491.1	aAfgAfuAfgAfgAfaauUfuCfuGfuGfgsGfsuSEQ-ID-NO-893
AD-52978.1	A-108330.1	AfaAfuCfaAfgAfUfUfuGfcUfaUfgUfuAfl96SEQ-ID-NO-709	A-108331.1	uAfaCfaUfaGfcAfaauCfuUfgAfuUfusUfsgSEQ-ID-NO-894
AD-53084.1	A-108518.1	AfcAfuUfaAfuUfCfAfaCfaUfcGfaAfuAfl96SEQ-ID-NO-710	A-108519.1	uAfuUfcGfaUfgUfugaAfuUfaAfuGfusCfscSEQ-ID-NO-895

AD-52972.1	A-108328.1	CfcAfgAfgCfcAfAfAfaUfcAfaGfaUfuUfL96SEQ-ID-NO-711	A-108329.1	aAfaUfcUfuGfaUfuuuGfgCfuCfuGfgsAfsGSEQ-ID-NO-896
AD-53002.1	A-108432.1	CfuAfcUfuCfaAfCfAfaAfaAfgUfgAfaAfl96SEQ-ID-NO-712	A-108433.1	uUfuCfaCfuUfuUfuguUfgAfaGfuAfgsAfsaSEQ-ID-NO-897
AD-53078.1	A-108516.1	GfaCfaUfuAfaUfUfCfaAfcAfuCfGfaUfL96SEQ-ID-NO-713	A-108517.1	aUfuCfGafuGfuUfgaaUfuAfaUfgUfcsCfsaSEQ-ID-NO-898
AD-53072.1	A-108514.1	GfgAfcAfuUfaAfUfUfcAfaCfaUfcGfaAfl96SEQ-ID-NO-714	A-108515.1	uUfcGfaUfgUfuGfaauUfaAfuGfuCfcsAfsuSEQ-ID-NO-899
AD-53005.1	A-108480.1	GfcAfuAfgUfcAfAfAfuAfaAfaGfaAfaUfL96SEQ-ID-NO-715	A-108481.1	aUfuUfcUfuUfuAfuuuGfaCfuAfuGfcsUfsgSEQ-ID-NO-900
AD-53083.1	A-108502.1	CfuCfuCfaAfgUfUfUfuUfcAfuGfuCfuAfl96SEQ-ID-NO-716	A-108503.1	uAfgAfcAfuGfaAfaaaCfuUfgAfgAfgsUfsuSEQ-ID-NO-901
AD-53102.1	A-108524.1	AfuCfGfaUfaGfAfUfgGfaUfcAfcAfaAfl96SEQ-ID-NO-717	A-108525.1	uUfuGfuGfaUfcCfaucUfaUfuCfGafusGfsuSEQ-ID-NO-902
AD-53105.1	A-108572.1	AfcAfuUfaUfaUfUfGfaAfuAfuUfcUfuUfL96SEQ-ID-NO-718	A-108573.1	aAfaGfaAfuAfuUfcaaUfaUfaAfuGfusUfsuSEQ-ID-NO-903
AD-53090.1	A-108520.1	UfuAfaUfuCfaAfCfAfuCfGfaUfaGfaUfL96SEQ-ID-NO-719	A-108521.1	aUfcUfaUfuCfGafuguUfgAfaUfuAfasUfsgSEQ-ID-NO-904
AD-53010.1	A-108466.1	GfaUfaAfuAfgCfAfUfcAfaAfgAfcCfuUfL96SEQ-ID-NO-720	A-108467.1	aAfgGfuCfuUfuGfaugCfuAfuUfaUfcsUfsuSEQ-ID-NO-905
AD-52998.1	A-108368.1	UfgAfcAfuAfuUfUfCfaAfaAfaCfuCfaAfl96SEQ-ID-NO-721	A-108369.1	uUfgAfgUfuUfuUfgaaAfuAfuGfuCfasUfsuSEQ-ID-NO-906
AD-52992.1	A-108366.1	AfaAfuUfaAfuGfAfCfaUfaUfuUfcAfaAfl96SEQ-ID-NO-722	A-108367.1	uUfuGfaAfaUfaUfgucAfuUfaAfuUfusGfsgSEQ-ID-NO-907
AD-53068.1	A-108544.1	GfaAfgAfuAfuAfCfUfcCfaUfaGfuGfaAfl96SEQ-ID-NO-723	A-108545.1	uUfcAfcUfaUfgGfaguAfuAfuCfuUfcsUfscSEQ-ID-NO-908
AD-53032.1	A-108442.1	AfaUfaUfuUfaGfAfAfgAfgCfaAfcUfaAfl96SEQ-ID-NO-724	A-108443.1	uUfaGfuUfgCfuCfuucUfaAfaUfaUfusUfscSEQ-ID-NO-909
AD-52967.1	A-108342.1	CfGafuGfuAfaAfAfAfuUfuUfaGfcCfaAfl96SEQ-ID-NO-725	A-108343.1	uUfgGfcUfaAfaAfuuuUfuAfcAfuCfGfUfscSEQ-ID-NO-910
AD-53096.1	A-108522.1	UfuCfaAfcAfuCfGfAfaUfaGfaUfgGfaUfL96SEQ-ID-NO-726	A-108523.1	aUfcCfaUfcUfaUfucgAfuGfuUfgAfasUfsuSEQ-ID-NO-911
AD-53131.1	A-108612.1	GfuGfuGfgAfgAfAfAfaCfaAfcCfuAfaAfl96SEQ-ID-NO-727	A-108613.1	uUfuAfgGfuUfgUfuuuCfuCfcAfcAfcUfscSEQ-ID-NO-912
AD-52963.1	A-108372.1	UfcAfaCfaUfaUfUfUfgAfuCfaGfuCfuUfL96SEQ-ID-NO-728	A-108373.1	aAfgAfcUfgAfuCfaaaUfaUfgUfuGfasGfsuSEQ-ID-NO-913
AD-53089.1	A-108504.1	UfcAfgGfuAfgUfCfCfaUfgGfaCfaUfuAfl96SEQ-ID-NO-729	A-108505.1	uAfaUfgUfcCfaUfggaCfuAfcCfuGfasUfsaSEQ-ID-NO-914
AD-53044.1	A-108446.1	UfuUfaGfaAfgAfGfCfaAfcUfaAfcUfaAfl96SEQ-ID-NO-730	A-108447.1	uUfaGfuUfaGfuUfgcuCfuUfcUfaAfasUfsaSEQ-ID-NO-915

AD-52988.1	A-108396.1	UfaCfaUfaUfaAfAfCfuAfcAfaGfuCfaAfl96SEQ-ID-NO-731	A-108397.1	uUfgAfcUfuGfuAfguuUfaUfaUfgUfasGfsuSEQ-ID-NO-916
AD-53067.1	A-108528.1	GfgAfuCfaCfaAfAfAfcUfuCfaAfuGfaAfl96SEQ-ID-NO-732	A-108529.1	uUfcAfuUfgAfaGfuuuUfgUfgAfuCfcsAfsuSEQ-ID-NO-917
AD-53009.1	A-108450.1	AfgAfgCfaAfcUfAfAfcUfaAfcUfuAfaUfl96SEQ-ID-NO-733	A-108451.1	aUfuAfaGfuUfaGfuuaGfuUfgCfuCfusUfscSEQ-ID-NO-918
AD-53022.1	A-108470.1	AfcCfaAfcAfgCfAfUfaGfuCfaAfaUfaAfl96SEQ-ID-NO-734	A-108471.1	uUfaUfuUfgAfcUfaugCfuGfuUfgGfusUfsuSEQ-ID-NO-919
AD-53016.1	A-108468.1	AfaCfcAfaCfaGfCfAfuAfgUfcAfaAfuAfl96SEQ-ID-NO-735	A-108469.1	uAfuUfuGfaCfuAfugcUfgUfuGfgUfusUfsaSEQ-ID-NO-920
AD-53007.1	A-108418.1	GfaAfcUfcAfaCfUfCfaAfaAfcUfuGfaAfl96SEQ-ID-NO-736	A-108419.1	uUfcAfaGfuUfuUfgagUfuGfaGfuUfcsAfsaSEQ-ID-NO-921
AD-53148.1	A-108634.1	UfaCfuCfuAfuAfAfAfaUfcAfaCfcAfaAfl96SEQ-ID-NO-737	A-108635.1	uUfuGfgUfuGfaUfuuuAfuAfgAfgUfasUfsaSEQ-ID-NO-922
AD-53040.1	A-108476.1	CfaGfcAfuAfgUfCfAfaAfuAfaAfaGfaAfl96SEQ-ID-NO-738	A-108477.1	uUfcUfuUfuAfuUfugaCfuAfuGfcUfgsUfsuSEQ-ID-NO-923
AD-53041.1	A-108492.1	GfaAfaUfaAfgAfAfAfuGfuAfaAfaCfaUfl96SEQ-ID-NO-739	A-108493.1	aUfgUfuUfuAfcAfuuuCfuUfaUfuUfcsAfsuSEQ-ID-NO-924
AD-53039.1	A-108460.1	CfuAfaCfuAfaCfUfUfaAfuUfcAfaAfaUfl96SEQ-ID-NO-740	A-108461.1	aUfuUfuGfaAfuUfaagUfuAfgUfuAfgsUfsuSEQ-ID-NO-925
AD-53139.1	A-108646.1	AfuGfaAfcUfgAfGfGfcAfaAfuUfuAfaAfl96SEQ-ID-NO-741	A-108647.1	uUfuAfaAfuUfuGfccuCfaGfuUfcAfusUfscSEQ-ID-NO-926
AD-53144.1	A-108648.1	UfgAfaCfuGfaGfGfCfaAfaUfuUfaAfaAfl96SEQ-ID-NO-742	A-108649.1	uUfuUfaAfaUfuUfgccUfcAfgUfuCfasUfsuSEQ-ID-NO-927
AD-53142.1	A-108616.1	AfaAfcAfaCfcUfAfAfaUfgGfuAfaAfuAfl96SEQ-ID-NO-743	A-108617.1	uAfuUfuAfcCfaUfuuaGfgUfuGfuUfusUfscSEQ-ID-NO-928
AD-53108.1	A-108620.1	AfcAfaCfcUfaAfAfUfgGfuAfaAfuAfuAfl96SEQ-ID-NO-744	A-108621.1	uAfuAfuUfuAfcCfauuUfaGfgUfuGfusUfsuSEQ-ID-NO-929
AD-53079.1	A-108532.1	AfaCfgUfgGfgAfGfAfaCfuAfcAfaAfuAfl96SEQ-ID-NO-745	A-108533.1	uAfuUfuGfuAfgUfucuCfcCfaCfgUfusUfscSEQ-ID-NO-930
AD-53133.1	A-108644.1	AfaUfgAfaCfuGfAfGfgCfaAfaUfuUfaAfl96SEQ-ID-NO-746	A-108645.1	uUfaAfaUfuUfgCfcucAfgUfuCfaUfusCfsaSEQ-ID-NO-931
AD-53104.1	A-108556.1	GfuUfgGfaAfgAfCfUfgGfaAfaGfaCfaAfl96SEQ-ID-NO-747	A-108557.1	uUfgUfcUfuUfcCfaguCfuUfcCfaAfcUfscSEQ-ID-NO-932
AD-53088.1	A-108582.1	UfgGfcAfaUfgUfCfCfcAfaUfuGfcAfaUfl96SEQ-ID-NO-748	A-108583.1	aUfuGfcAfuUfgGfggaCfaUfuGfcCfasGfsuSEQ-ID-NO-933
AD-53101.1	A-108508.1	GfgUfaGfuCfcAfUfGfgAfcAfuUfaAfuUfl96SEQ-ID-NO-749	A-108509.1	aAfuUfaAfuGfuCfcauGfgAfcUfaCfcsUfsgSEQ-ID-NO-934
AD-53000.1	A-108400.1	CfaUfaUfaAfaCfUfAfcAfaGfuCfaAfaAfl96SEQ-ID-NO-750	A-108401.1	uUfuUfgAfcUfuGfuagUfuUfaUfaUfgsUfsaSEQ-ID-NO-935

AD-53112.1	A-108590.1	AfaUfcCfcGfgAfAfAfaCfaAfaGfaUfuUfL96SEQ-ID-NO-751	A-108591.1	aAfaUfcUfuUfgUfuuuCfcGfgGfaUfusGfscSEQ-ID-NO-936
AD-53107.1	A-108604.1	CfuAfcUfuGfgGfAfUfcAfaAfgCfaAfl96SEQ-ID-NO-752	A-108605.1	uUfgCfuUfuGfuGfaucCfcAfaGfuAfgsAfsaSEQ-ID-NO-937
AD-53121.1	A-108640.1	UfgAfaUfgAfaCfUfGfaGfgCfaAfaUfuUfL96SEQ-ID-NO-753	A-108641.1	aAfaUfuUfgCfcUfcagUfuCfaUfuCfasAfsaSEQ-ID-NO-938
AD-53046.1	A-108478.1	AfgCfaUfaGfuCfAfAfaUfaAfaAfgAfaAfl96SEQ-ID-NO-754	A-108479.1	uUfuCfuUfuUfaUfuugAfcUfaUfgCfusGfsuSEQ-ID-NO-939
AD-53038.1	A-108444.1	AfuUfuAfgAfaGfAfGfcAfaCfuAfaCfuAfl96SEQ-ID-NO-755	A-108445.1	uAfgUfuAfgUfuGfcucUfuCfuAfaAfusAfsuSEQ-ID-NO-940
AD-53140.1	A-108662.1	AfgGfcAfaAfuUfUfAfaAfaGfgCfaAfuAfl96SEQ-ID-NO-756	A-108663.1	uAfuUfgCfcUfuUfuuaAfuUfuGfcCfusCfsaSEQ-ID-NO-941
AD-52987.1	A-108380.1	CfaUfaUfuUfgAfUfCfaGfuCfuUfuUfuAfl96SEQ-ID-NO-757	A-108381.1	uAfaAfaAfgAfcUfgauCfaAfaUfaUfsgUfsuSEQ-ID-NO-942
AD-53130.1	A-108596.1	AfaAfaCfaAfaGfAfUfuUfgGfuGfuUfuUfL96SEQ-ID-NO-758	A-108597.1	aAfaAfcAfcCfaAfaucUfuUfgUfuUfusCfscSEQ-ID-NO-943
AD-53106.1	A-108588.1	CfaAfuCfcCfGfAfAfaAfcAfaAfgAfuUfL96SEQ-ID-NO-759	A-108589.1	aAfuCfuUfuGfuUfuucCfGfgAfuUfsgCfsaSEQ-ID-NO-944
AD-53081.1	A-108564.1	CfaAfcAfaAfcAfUfUfaUfaUfuGfaAfuAfl96SEQ-ID-NO-760	A-108565.1	uAfuUfcAfaUfaUfaauGfuUfuGfuUfsgUfscSEQ-ID-NO-945
AD-53118.1	A-108592.1	GfgAfaAfaCfaAfAfGfaUfuUfgGfuGfuUfL96SEQ-ID-NO-761	A-108593.1	aAfcAfcCfaAfaUfcuuUfgUfuUfuCfcsGfsgSEQ-ID-NO-946
AD-53136.1	A-108598.1	AfcAfaAfgAfuUfUfGfgUfgUfuUfuCfuAfl96SEQ-ID-NO-762	A-108599.1	uAfgAfaAfaCfaCfaaAfuCfuUfuGfusUfsuSEQ-ID-NO-947
AD-53127.1	A-108642.1	GfaAfuGfaAfcUfGfAfgGfcAfaAfuUfuAfl96SEQ-ID-NO-763	A-108643.1	uAfaAfuUfuGfcCfucaGfuUfcAfuUfcsAfsaSEQ-ID-NO-948
AD-53066.1	A-108512.1	CfcAfuGfgAfcAfUfUfaAfuUfcAfaCfaUfL96SEQ-ID-NO-764	A-108513.1	aUfgUfuGfaAfuUfaauGfuCfcAfuGfgsAfsaSEQ-ID-NO-949
AD-53013.1	A-108420.1	AfaCfuCfaAfcUfCfAfaAfaCfuUfgAfaAfl96SEQ-ID-NO-765	A-108421.1	uUfuCfaAfgUfuUfugaGfuUfgAfgUfusCfsaSEQ-ID-NO-950
AD-52991.1	A-108350.1	CfaGfuUfgGfgAfcAfuGfgUfcUfuAfaAfl96SEQ-ID-NO-766	A-108351.1	uUfuAfaGfaCfcAfuguCfcCfaAfcUfsgAfsaSEQ-ID-NO-951
AD-53099.1	A-108570.1	AfaCfaUfuAfuAfUfUfgAfaUfaUfuCfuUfL96SEQ-ID-NO-767	A-108571.1	aAfgAfaUfaUfuCfaauAfuAfaUfgUfusUfsgSEQ-ID-NO-952
AD-52958.1	A-108386.1	AfcCfaGfuGfaAfAfUfcAfaAfgAfaGfaAfl96SEQ-ID-NO-768	A-108387.1	uUfcUfuCfuUfuGfauuUfcAfcUfgGfusUfsuSEQ-ID-NO-953
AD-53097.1	A-108538.1	GfuUfgGfgCfcUfAfGfaGfaAfgAfuAfuAfl96SEQ-ID-NO-769	A-108539.1	uAfuAfuCfuUfcUfcuaGfgCfcCfaAfcscCfsaSEQ-ID-NO-954
AD-52966.1	A-108326.1	CfuCfcAfgAfgCfCfAfaAfaUfcAfaGfaUfL96SEQ-ID-NO-770	A-108327.1	aUfcUfuGfaUfuUfuggCfuCfuGfgAfgsAfsuSEQ-ID-NO-955

AD-53145.1	A-108664.1	GfgCfaAfaUfuUfAfAfaAfgGfcAfaUfaAfl96SEQ-ID-NO-771	A-108665.1	uUfaUfuGfcCfuUfuuaAfaUfuUfgCfcsUfscSEQ-ID-NO-956
AD-53113.1	A-108606.1	UfaCfuUfgGfgAfUfCfaCfaAfaGfcAfaAfl96SEQ-ID-NO-772	A-108607.1	uUfuGfcUfuUfgUfgauCfcCfaAfgUfasGfsaSEQ-ID-NO-957
AD-52993.1	A-108382.1	GfaUfcAfgUfcUfUfUfuUfaUfgAfuCfuAfl96SEQ-ID-NO-773	A-108383.1	uAfgAfuCfaUfaAfaaaGfaCfuGfaUfcsAfsaSEQ-ID-NO-958
AD-53031.1	A-108426.1	GfaAfaGfcCfuCfCfUfaGfaAfgAfaAfaAfl96SEQ-ID-NO-774	A-108427.1	uUfuUfuCfuUfcUfaggAfgGfcUfuUfcsAfsaSEQ-ID-NO-959
AD-53017.1	A-108484.1	AfgUfcAfaAfuAfAfAfaGfaAfaUfaGfaAfl96SEQ-ID-NO-775	A-108485.1	uUfcUfaUfuUfcUfuuuAfuUfuGfaCfusAfsuSEQ-ID-NO-960
AD-53143.1	A-108632.1	AfuAfcUfcUfaUfAfAfaAfuCfaAfcCfaAfl96SEQ-ID-NO-776	A-108633.1	uUfgGfuUfgAfuUfuuaUfaGfaGfuAfusAfsaSEQ-ID-NO-961
AD-53149.1	A-108650.1	GfaAfcUfgAfgGfCfAfaAfuUfuAfaAfaAfl96SEQ-ID-NO-777	A-108651.1	uUfuUfuAfaAfuUfugCfuCfaGfuUfcsAfsuSEQ-ID-NO-962
AD-53059.1	A-108494.1	AfgAfcCfcAfgCfAfAfcUfcUfcAfaGfuUfl96SEQ-ID-NO-778	A-108495.1	aAfcUfuGfaGfaGfuugCfuGfgGfuCfusGfsaSEQ-ID-NO-963
AD-53006.1	A-108402.1	AfuAfuAfaAfcUfAfCfaAfgUfcAfaAfaAfl96SEQ-ID-NO-779	A-108403.1	uUfuUfuGfaCfuUfguaGfuUfuAfuAfusGfsuSEQ-ID-NO-964
AD-53025.1	A-108424.1	UfgAfaAfgCfcUfCfCfuAfgAfaGfaAfaAfl96SEQ-ID-NO-780	A-108425.1	uUfuUfcUfuCfuAfggaGfgCfuUfuCfasAfsaSEQ-ID-NO-965
AD-53085.1	A-108534.1	GfgGfaGfaAfcUfAfCfaAfaUfaUfgGfuUfl96SEQ-ID-NO-781	A-108535.1	aAfcCfaUfaUfuUfguaGfuUfcUfcCfcsAfsaSEQ-ID-NO-966
AD-52984.1	A-108332.1	AfgAfuUfuGfcUfAfUfgUfuAfgAfcGfaUfl96SEQ-ID-NO-782	A-108333.1	aUfcGfuCfuAfaCfaaaGfcAfaAfuCfusUfsgSEQ-ID-NO-967
AD-53023.1	A-108486.1	GfaAfcCfcAfcAfGfAfaAfuUfuCfuCfuAfl96SEQ-ID-NO-783	A-108487.1	uAfgAfgAfaAfuUfucuGfuGfgGfuUfcsUfsuSEQ-ID-NO-968
AD-53014.1	A-108436.1	AfcUfuCfaAfcAfAfAfaAfgUfgAfaAfuAfl96SEQ-ID-NO-784	A-108437.1	uAfuUfuCfaCfuUfuuuGfuUfgAfaGfusAfsaSEQ-ID-NO-969
AD-53060.1	A-108510.1	AfgUfcCfaUfgGfAfCfaUfuAfaUfuCfaAfl96SEQ-ID-NO-785	A-108511.1	uUfgAfaUfuAfaUfgucCfaUfgGfaCfusAfsaSEQ-ID-NO-970
AD-53110.1	A-108652.1	AfaCfuGfaGfgCfAfAfaUfuUfaAfaAfgAfl96SEQ-ID-NO-786	A-108653.1	uCfuUfuUfaAfaUfuugCfcUfcAfgUfusCfsaSEQ-ID-NO-971
AD-52980.1	A-108362.1	GfgGfcCfaAfaUfUfAfaUfgAfcAfuAfuUfl96SEQ-ID-NO-787	A-108363.1	aAfuAfuGfuCfaUfuuaUfuUfgGfcCfcsUfsuSEQ-ID-NO-972
AD-53109.1	A-108636.1	AfuCfcAfuCfcAfAfCfaGfaUfuCfaGfaAfl96SEQ-ID-NO-788	A-108637.1	uUfcUfgAfaUfcUfguuGfgAfuGfgAfusCfsaSEQ-ID-NO-973
AD-53141.1	A-108600.1	AfaGfaUfuUfgGfUfgfuUfuUfcUfaCfuUfl96SEQ-ID-NO-789	A-108601.1	aAfgUfaGfaAfaAfcacCfaAfaUfcUfusUfsgSEQ-ID-NO-974
AD-53126.1	A-108626.1	GfuCfuCfaAfaAfUfGfgAfaGfgUfuAfuAfl96SEQ-ID-NO-790	A-108627.1	uAfuAfaCfcUfuCfcauUfuUfgAfgAfcUfsuSEQ-ID-NO-975

AD-53116.1	A-108654.1	AfcUfgAfgGfcAfAfAfUfuAfaAfaGfgAfl96SEQ-ID-NO-791	A-108655.1	uCfcUfuUfuAfaAfuuuGfcCfuCfaGfusUfscSEQ-ID-NO-976
AD-52997.1	A-108352.1	GfgGfaCfaUfgGfUfCfuUfaAfaGfaCfuUfl96SEQ-ID-NO-792	A-108353.1	aAfgUfcUfuUfaAfgacCfaUfgUfcCfcsAfsaSEQ-ID-NO-977
AD-53120.1	A-108624.1	AfuGfgUfaAfaUfAfUfaAfcAfaAfcCfaAfl96SEQ-ID-NO-793	A-108625.1	uUfgGfuUfuGfuUfaUfuUfaCfcAfusUfsuSEQ-ID-NO-978
AD-53070.1	A-108576.1	GfgGfaAfaUfcAfCfGfaAfaCfcAfaCfuAfl96SEQ-ID-NO-794	A-108577.1	uAfgUfuGfgUfuUfcguGfaUfuUfcCfcsAfsaSEQ-ID-NO-979
AD-53028.1	A-108472.1	CfcAfaCfaGfcAfUfAfgUfcAfaAfuAfaAfl96SEQ-ID-NO-795	A-108473.1	uUfuAfuUfuGfaCfuauGfcUfgUfuGfgsUfsuSEQ-ID-NO-980
AD-53146.1	A-108602.1	UfuUfuCfuAfcUfUfGfgGfaUfcAfcAfaAfl96SEQ-ID-NO-796	A-108603.1	uUfuGfuGfaUfcCfcaaGfuAfgAfaAfasCfsaSEQ-ID-NO-981
AD-52982.1	A-108394.1	AfgAfaCfuAfcAfUfAfuAfaAfcUfaCfaAfl96SEQ-ID-NO-797	A-108395.1	uUfgUfaGfuUfuAfuauGfuAfgUfuCfusUfscSEQ-ID-NO-982
AD-53111.1	A-108668.1	AfgAfgUfaUfgUfGfUfaAfaAfaUfcUfgUfl96SEQ-ID-NO-798	A-108669.1	aCfaGfaUfuUfuUfacaCfaUfaCfuCfusGfsuSEQ-ID-NO-983
AD-53045.1	A-108462.1	AfaAfaCfaAfgAfUfAfaUfaGfcAfuCfaAfl96SEQ-ID-NO-799	A-108463.1	uUfgAfuGfcUfaUfuauCfuUfgUfuUfusUfscSEQ-ID-NO-984
AD-53123.1	A-108672.1	AfgUfaUfgUfgUfAfAfaAfaUfcUfgUfaAfl96SEQ-ID-NO-800	A-108673.1	uUfaCfaGfaUfuUfuuaCfaCfaUfaCfusCfsuSEQ-ID-NO-985
AD-53018.1	A-108406.1	AfgUfcAfaAfaAfUfGfaAfgAfgGfuAfaAfl96SEQ-ID-NO-801	A-108407.1	uUfuAfcCfuCfuUfcauUfuUfuGfaCfusUfsgSEQ-ID-NO-986
AD-52956.1	A-108354.1	GfgAfcAfuGfgUfCfUfuAfaAfgAfcUfuUfl96SEQ-ID-NO-802	A-108355.1	aAfaGfuCfuUfuAfgaCfcAfuGfuCfcsCfsaSEQ-ID-NO-987
AD-53134.1	A-108660.1	GfaGfgCfaAfaUfUfUfaAfaAfgGfcAfaUfl96SEQ-ID-NO-803	A-108661.1	aUfuGfcCfuUfuUfaaaUfuUfgCfcUfcsAfsaSEQ-ID-NO-988
AD-52968.1	A-108358.1	GfuCfuUfaAfaGfAfCfuUfuGfuCfcAfuAfl96SEQ-ID-NO-804	A-108359.1	uAfuGfgAfcAfaAfgucUfuUfaAfgAfcCfsaSEQ-ID-NO-989
AD-53122.1	A-108656.1	CfuGfaGfgCfaAfAfUfuUfaAfaAfgGfcAfl96SEQ-ID-NO-805	A-108657.1	uGfcCfuUfuUfaAfaauUfgCfcUfcAfgsUfsuSEQ-ID-NO-990
AD-53100.1	A-108586.1	GfcAfaUfcCfcGfGfAfaAfaCfaAfaGfaUfl96SEQ-ID-NO-806	A-108587.1	aUfcUfuUfgUfuUfuccGfgGfaUfuGfcsAfsuSEQ-ID-NO-991
AD-53128.1	A-108658.1	UfgAfgGfcAfaAfUfUfuAfaAfaGfgCfaAfl96SEQ-ID-NO-807	A-108659.1	uUfgCfcUfuUfuAfaauUfuGfcCfuCfasGfsuSEQ-ID-NO-992
AD-53043.1	A-108430.1	UfcUfaCfuUfcAfAfCfaAfaAfaGfuGfaAfl96SEQ-ID-NO-808	A-108431.1	uUfcAfcUfuUfuUfguuGfaAfgUfaGfasAfsuSEQ-ID-NO-993
AD-53135.1	A-108676.1	UfaUfgUfgUfaAfAfAfaUfcUfgUfaAfuAfl96SEQ-ID-NO-809	A-108677.1	uAfuUfaCfaGfaUfuuuUfaCfaCfaUfasCfsuSEQ-ID-NO-994
AD-53094.1	A-108584.1	AfaUfgCfaAfuCfCfGfgGfaAfaAfcAfaAfl96SEQ-ID-NO-810	A-108585.1	uUfuGfuUfuUfcCfgggAfuUfgCfaUfusGfsgSEQ-ID-NO-995

AD-53019.1	A-108422.1	<u>CfuUfgAfaAfgCfCfUfcCfuAfgAfaGfaAfl96SEQ-ID-NO-811</u>	A-108423.1	<u>uUfcUfuCfuAfgGfaggCfuUfuCfaAfgsUfsuSEQ-ID-NO-996</u>
AD-53129.1	A-108674.1	<u>GfuAfuGfuGfuAfaAfaAfuCfuGfuAfaUfl96SEQ-ID-NO-812</u>	A-108675.1	<u>aUfuAfcAfgAfuUfuuuAfcAfcAfuAfcUfscSEQ-ID-NO-997</u>
AD-53150.1	A-108666.1	<u>CfaGfaGfuAfuGfUfGfuAfaAfaAfuCfuUfl96SEQ-ID-NO-813</u>	A-108667.1	<u>aAfgAfuUfuUfuAfcacAfuAfcUfcUfgsUfsgSEQ-ID-NO-998</u>
AD-53117.1	A-108670.1	<u>GfaGfuAfuGfuGfUfAfaAfaAfuCfuGfuAfl96SEQ-ID-NO-814</u>	A-108671.1	<u>uAfcAfgAfuUfuUfuacAfcAfuAfcUfcsUfsgSEQ-ID-NO-999</u>
AD-52985.1	A-108348.1	<u>UfcAfgUfuGfgGfAfCfaUfgGfuCfuUfaAfl96SEQ-ID-NO-815</u>	A-108349.1	<u>uUfaAfgAfcCfaUfgucCfcAfaCfuGfasAfsGSEQ-ID-NO-1000</u>
AD-52962.1	A-108356.1	<u>GfgUfcUfuAfaAfGfAfcUfuUfgUfcCfaUfl96SEQ-ID-NO-816</u>	A-108357.1	<u>aUfgGfaCfaAfaGfucuUfuAfaGfaCfcsAfsuSEQ-ID-NO-1001</u>
AD-52974.1	A-108360.1	<u>UfcUfuAfaAfgAfCfUfuUfgUfcCfaUfaAfl96SEQ-ID-NO-817</u>	A-108361.1	<u>uUfaUfgGfaCfaAfaGuCfuUfuAfaGfasCfscSEQ-ID-NO-1002</u>
AD-52979.1	A-108346.1	<u>UfuCfaGfuUfgGfGfAfcAfuGfgUfcUfuAfl96SEQ-ID-NO-818</u>	A-108347.1	<u>uAfaGfaCfcAfuGfuCCfaAfcUfgAfasGfsgSEQ-ID-NO-1003</u>

Lowercase nucleotides (a, u, g, c) are 2'-O-methyl nucleotides; Nf (e.g., Af) is a 2'-fluoro nucleotide; s is a phosphothiorate linkage; L96 indicates a GalNAc ligand.

Table 9. Unmodified Sense and antisense strand sequences of ANGPTL3 dsRNAs without GalNal conjugation

These sequences are the same as the sequences listed in Table 7 except that they do not contain GalNal conjugation.

Duplex Name	Sense OligoName	Sense Sequence (SEQ ID NOS 1004-1184, respectively, in order of appearance)	Antisense OligoName	Antisense Sequence (SEQ ID NOS 1185-1365, respectively, in order of appearance)	Position in NM_014495.2
AD-52637.1	A-108817.1	<u>UCACAAUUAAGCUCCUUCUUU</u> ~~SEQ ID NO 1004~~	A-108307.2	<u>AAAGAAGGAGCUUAAUUGUGAAC</u> ~~SEQ ID NO 1185~~	54-76
AD-52638.1	A-108825.1	<u>UUUUUGUUCUCUAGUUUUU</u> ~~SEQ ID NO 1005~~	A-108323.2	<u>AAUAACUAGAGGAACAAUAAA</u> ~~SEQ ID NO 1186~~	75-97
AD-52639.1	A-108833.1	<u>GCUAUGUUAGACGAUGUAAA</u> ~~SEQ ID NO 1006~~	A-108339.2	<u>UUUUACAUCGUCUACAUAGCA</u> ~~SEQ ID NO 1187~~	161-183
AD-52640.1	A-108841.1	<u>GGACAUGGUCUAAAAGACUU</u> ~~SEQ ID NO 1007~~	A-108355.2	<u>AAAGUCUUAAAGACCAUGUCC</u> ~~SEQ ID NO 1188~~	209-231
AD-52641.1	A-108849.1	<u>CAAAAACUCAACAUUUUGAU</u> ~~SEQ ID NO 1008~~	A-108371.2	<u>AUCAAUAUGUUGAGUUUUUGAA</u> ~~SEQ ID NO 1189~~	266-288
AD-52642.1	A-108857.1	<u>ACCAGUGAAAUCAAAGAAGAA</u> ~~SEQ ID NO 1009~~	A-108387.2	<u>UUCUUCUUUGAUUUUCACUGGUU</u> ~~SEQ ID NO 1190~~	314-336
AD-52643.1	A-108818.1	<u>CACAAUUAAGCUCCUUCUUU</u> ~~SEQ ID NO 1010~~	A-108309.2	<u>AAAAGAAGGAGCUUAAUUGUGAA</u> ~~SEQ ID NO 1191~~	55-77
AD-52645.1	A-108834.1	<u>CUAUGUUAGACGAUGUAAA</u> ~~SEQ ID NO 1011~~	A-108341.2	<u>UUUUUACAUCGUCUACAUAGCA</u> ~~SEQ ID NO 1192~~	162-184
AD-52647.1	A-108850.1	<u>UCAACAUUUUGAUCAGUCUU</u> ~~SEQ ID NO 1012~~	A-108373.2	<u>AAGACUGAUCAAAUUGUUGAGU</u> ~~SEQ ID NO 1193~~	273-295
AD-52648.1	A-108858.1	<u>AACUGAGAAGACUACAUUA</u> ~~SEQ ID NO 1013~~	A-108389.2	<u>UAUAUGUAGUUCUCAGUUC</u> ~~SEQ ID NO 1194~~	342-364
AD-52649.1	A-108819.1	<u>ACAAUUAAGCUCCUUCUUU</u> ~~SEQ ID NO 1014~~	A-108311.2	<u>AAAAGAAGGAGCUUAAUUGUGA</u> ~~SEQ ID NO 1195~~	56-78
AD-52650.1	A-108827.1	<u>CUCCAGAGCCAAAUAAGA</u> ~~SEQ ID NO 1015~~	A-108327.2	<u>AUCUUGAUUUUGGCUCUGGAGAU</u> ~~SEQ ID NO 1196~~	138-160
AD-52651.1	A-108835.1	<u>CGAUGUAAAAUUUAGCCA</u> ~~SEQ ID NO 1016~~	A-108343.2	<u>UUGGCUAAAAUUUACAUCGUC</u> ~~SEQ ID NO 1197~~	172-194
AD-52652.1	A-108843.1	<u>GUCUAAAAGACUUUGUCCA</u> ~~SEQ ID NO 1017~~	A-108359.2	<u>UAUGGACAAAGUCUUUAAGACCA</u> ~~SEQ ID NO 1198~~	216-238
AD-52653.1	A-108851.1	<u>CAACAUUUUGAUCAGUCUU</u> ~~SEQ ID NO 1018~~	A-108375.2	<u>AAAGACUGAUCAAAUUGUUGAG</u> ~~SEQ ID NO 1199~~	274-296

AD-52654.1	A-108859.1	<u>ACUGAGAAGAACUACAUUAASEQ-ID-NO-1019</u>	A-108391.2	<u>UUUAUGUAGUUCUUCUCAGUUCSEQ-ID-NO-1200</u>	343-365
AD-52656.1	A-108828.1	<u>CCAGAGCCAAAAUCAAGAUUUSEQ-ID-NO-1020</u>	A-108329.2	<u>AAAUUCUUGAUUUUGGCUCUGGAGSEQ-ID-NO-1201</u>	140-162
AD-52657.1	A-108836.1	<u>GAUGUAAAAUUUUAGCCAAUSEQ-ID-NO-1021</u>	A-108345.2	<u>AUUGGCUAAAAUUUUUACAUCGUSEQ-ID-NO-1202</u>	173-195
AD-52658.1	A-108844.1	<u>UCUUAAGACUUUGUCCAUAASEQ-ID-NO-1022</u>	A-108361.2	<u>UUUUGGACAAAGUCUUUAAGACCSEQ-ID-NO-1203</u>	217-239
AD-52659.1	A-108852.1	<u>AACAUUUUGAUCAGUCUUUUSEQ-ID-NO-1023</u>	A-108377.2	<u>AAAAGACUGAUCAAUAUGUUGASEQ-ID-NO-1204</u>	275-297
AD-52660.1	A-108860.1	<u>CUGAGAAGAACUACAUUAAAASEQ-ID-NO-1024</u>	A-108393.2	<u>UUUAUUGUAGUUCUUCUCAGUUSEQ-ID-NO-1205</u>	344-366
AD-52661.1	A-108821.1	<u>AAUUAAGCUCCUUCUUUUUAUSEQ-ID-NO-1025</u>	A-108315.2	<u>AUAAAAAGAAGGAGCUUAAUUGUSEQ-ID-NO-1206</u>	58-80
AD-52662.1	A-108829.1	<u>AAUCAAGAUUUGCUAUGUUAASEQ-ID-NO-1026</u>	A-108331.2	<u>UAAUAGCAAAUCUUGAUUUUGSEQ-ID-NO-1207</u>	149-171
AD-52663.1	A-108837.1	<u>UUCAGUUGGGACAUGGUCUUAASEQ-ID-NO-1027</u>	A-108347.2	<u>UAGACCAUGUCCCAACUGAAGGSEQ-ID-NO-1208</u>	201-223
AD-52664.1	A-108845.1	<u>GGGCCAAAUAAUGACAUUUUSEQ-ID-NO-1028</u>	A-108363.2	<u>AAUUGUCAUUAUUUUGGCCCUUSEQ-ID-NO-1209</u>	244-266
AD-52665.1	A-108853.1	<u>ACAUUUUGAUCAGUCUUUUUSEQ-ID-NO-1029</u>	A-108379.2	<u>AAAAAGACUGAUCAAUAUGUUGSEQ-ID-NO-1210</u>	276-298
AD-52666.1	A-108861.1	<u>AGAACUACAUUAAACUACAAASEQ-ID-NO-1030</u>	A-108395.2	<u>UUGUAGUUUAUUGUAGUUCUUCSEQ-ID-NO-1211</u>	350-372
AD-52667.1	A-108822.1	<u>AUUAAGCUCCUUCUUUUUAUSEQ-ID-NO-1031</u>	A-108317.2	<u>AAUAAAAAGAAGGAGCUUAAUUGSEQ-ID-NO-1212</u>	59-81
AD-52668.1	A-108830.1	<u>AGAUUUGCUAUGUUGACGAUUSEQ-ID-NO-1032</u>	A-108333.2	<u>AUCGUCUACAUAGCAAUCUUGSEQ-ID-NO-1213</u>	155-177
AD-52669.1	A-108838.1	<u>UCAGUUGGGACAUGGUCUUAASEQ-ID-NO-1033</u>	A-108349.2	<u>UUAAGACCAUGUCCCAACUGAAGSEQ-ID-NO-1214</u>	202-224
AD-52670.1	A-108846.1	<u>GGCCAAAUAAUGACAUUUUSEQ-ID-NO-1034</u>	A-108365.2	<u>AAAUUGUCAUUAUUUUGGCCCUSEQ-ID-NO-1215</u>	245-267
AD-52671.1	A-108854.1	<u>CAUUAUUUGAUCAGUCUUUUUAASEQ-ID-NO-1035</u>	A-108381.2	<u>UAAAAAGACUGAUCAAUAUGUUGSEQ-ID-NO-1216</u>	277-299
AD-52672.1	A-108862.1	<u>UACAUUAAACUACAAGUCAASEQ-ID-NO-1036</u>	A-108397.2	<u>UUGACUUGUAGUUUAUUGUAGUUSEQ-ID-NO-1217</u>	355-377
AD-52673.1	A-108823.1	<u>UUUUUAUUGUCCUCUAGUUAUSEQ-ID-NO-1037</u>	A-108319.2	<u>AUAACUAGAGGAACAAUAAAAAGSEQ-ID-NO-1218</u>	73-95
AD-52674.1	A-108831.1	<u>UUGCUAUGUUGACGAUGUAASEQ-ID-NO-1038</u>	A-108335.2	<u>UUACAUCGUCUAAUAGCAAUUSEQ-ID-NO-1219</u>	159-181

AD-52675.1	A-108839.1	CAGUUGGGACAUGGUCUAAASEQ-ID-NO-1039	A-108351.2	UUUAAGACCAUGUCCCAACUGAASEQ-ID-NO-1220	203-225
AD-52676.1	A-108847.1	AAAUUAAUGACAUUUUCAASEQ-ID-NO-1040	A-108367.2	UUUGAAAUAUGUCAUUAAUUUGGSEQ-ID-NO-1221	249-271
AD-52677.1	A-108855.1	GAUCAGUCUUUUUAUGAUCUASEQ-ID-NO-1041	A-108383.2	UAGAUCAUAAAAGACUGAUCAASEQ-ID-NO-1222	284-306
AD-52678.1	A-108863.1	ACAUAUAAACUACAAGUCAASEQ-ID-NO-1042	A-108399.2	UUUGACUUGUAGUUUAUUGUAGSEQ-ID-NO-1223	356-378
AD-52679.1	A-108824.1	UUUAUUGUUCUCUAGUUUUUASEQ-ID-NO-1043	A-108321.2	AAUAACUAGAGGAACAUAUAAAASEQ-ID-NO-1224	74-96
AD-52680.1	A-108832.1	UGCUAUGUUAGACGAUGUAAAASEQ-ID-NO-1044	A-108337.2	UUUACAUCGUCUAAAUAGCAAASEQ-ID-NO-1225	160-182
AD-52681.1	A-108840.1	GGGACAUGGUCUAAAAGACUUSEQ-ID-NO-1045	A-108353.2	AAGUCUUUAAGACCAUGUCCCAASEQ-ID-NO-1226	208-230
AD-52682.1	A-108848.1	UGACAUUUUUCAAAAACUCAASEQ-ID-NO-1046	A-108369.2	UUGAGUUUUUGAAAUAUGUCAUUSEQ-ID-NO-1227	256-278
AD-52683.1	A-108856.1	AUCAGUCUUUUUAUGAUCUASEQ-ID-NO-1047	A-108385.2	AUAGAUCAUAAAAGACUGAUCAASEQ-ID-NO-1228	285-307
AD-52684.1	A-108864.1	CAUAUAAACUACAAGUCAAAASEQ-ID-NO-1048	A-108401.2	UUUUGACUUGUAGUUUAUUGUASEQ-ID-NO-1229	357-379
AD-52685.1	A-108872.1	CUUGAACUCAACUAAAACUUSEQ-ID-NO-1049	A-108417.2	AAGUUUUGAGUUGAGUUAAGUGSEQ-ID-NO-1230	401-423
AD-52686.1	A-108880.1	CUACUUAACAAAAAGUGAAAASEQ-ID-NO-1050	A-108433.2	UUUCACUUUUUGUUGAAGUAGAASEQ-ID-NO-1231	446-468
AD-52687.1	A-108888.1	AAGAGCAACUAACUAAUUAASEQ-ID-NO-1051	A-108449.2	UUAAGUUAGUUAGUUGCUCUUCUSEQ-ID-NO-1232	474-496
AD-52688.1	A-108896.1	AAACAAGAUAAUAGCAUCAAASEQ-ID-NO-1052	A-108465.2	UUUGAUGCUAAUUCUUGUUUUUSEQ-ID-NO-1233	557-579
AD-52689.1	A-108904.1	GCAUAGUCAAAUAAAAGAAUASEQ-ID-NO-1053	A-108481.2	AUUUUCUUUUUAUUUGACUAGCUGSEQ-ID-NO-1234	625-647
AD-52690.1	A-108865.1	AUUAUAAACUACAAGUCAAAAASEQ-ID-NO-1054	A-108403.2	UUUUUUGACUUGUAGUUUAUUGUASEQ-ID-NO-1235	358-380
AD-52691.1	A-108873.1	GAACUCAACUAAAACUUGAAASEQ-ID-NO-1055	A-108419.2	UUCAAGUUUUGAGUUGAGUUAASEQ-ID-NO-1236	404-426
AD-52692.1	A-108881.1	UACUUAACAAAAAGUGAAUASEQ-ID-NO-1056	A-108435.2	AUUUUCACUUUUUGUUGAAGUAGASEQ-ID-NO-1237	447-469
AD-52693.1	A-108889.1	AGAGCAACUAACUAAUUAASEQ-ID-NO-1057	A-108451.2	AUUAAGUUAGUUAGUUGCUCUUCSEQ-ID-NO-1238	475-497
AD-52694.1	A-108897.1	GAUAAUAGCAUCAAAGACCUUASEQ-ID-NO-1058	A-108467.2	AAGGUCUUUGAUGCUAAUUAUCUUASEQ-ID-NO-1239	563-585

AD-52695.1	A-108905.1	CAUAGUCAAAUAAAAGAAUASEQ-ID-NO-1059	A-108483.2	UAUUUCUUUUUAUUUGACUAUGCUSEQ-ID-NO-1240	626-648
AD-52696.1	A-108866.1	UAUAAACUACAAGUCAAAAASEQ-ID-NO-1060	A-108405.2	AUUUUUGACUUGUAGUUUAUUGSEQ-ID-NO-1241	359-381
AD-52697.1	A-108874.1	AACUCAACUCAAACUUGAAASEQ-ID-NO-1061	A-108421.2	UUUCAAGUUUUUGAGUUGAGUUCASEQ-ID-NO-1242	405-427
AD-52698.1	A-108882.1	ACUUCAACAAAAGUGAAUASEQ-ID-NO-1062	A-108437.2	UAUUUCACUUUUUGUUGAAGUAGSEQ-ID-NO-1243	448-470
AD-52699.1	A-108890.1	GAGCAACUAACUAACUUAUUASEQ-ID-NO-1063	A-108453.2	AAUUAAGUUAGUUAGUUGCUCUUSEQ-ID-NO-1244	476-498
AD-52700.1	A-108898.1	AACCAACAGCAUAGUCAAAUASEQ-ID-NO-1064	A-108469.2	UAUUUGACUAUGCUGUUGGUUUASEQ-ID-NO-1245	617-639
AD-52701.1	A-108906.1	AGUCAAAUAAAAGAAUAGAASEQ-ID-NO-1065	A-108485.2	UUCUAUUUCUUUUUAUUUGACUAUASEQ-ID-NO-1246	629-651
AD-52702.1	A-108867.1	AGUCAAAAAUGAAGAGGUAAAASEQ-ID-NO-1066	A-108407.2	UUUACCUCUUCAUUUUUUGACUUGSEQ-ID-NO-1247	370-392
AD-52703.1	A-108875.1	CUUGAAAGCCUCCUAGAAGAAASEQ-ID-NO-1067	A-108423.2	UUCUUCUAGGAGGCUUUCAAGUUSEQ-ID-NO-1248	419-441
AD-52704.1	A-108883.1	CUUCAACAAAAAGUGAAUUAUSEQ-ID-NO-1068	A-108439.2	AUUUUUCACUUUUUGUUGAAGUASEQ-ID-NO-1249	449-471
AD-52705.1	A-108891.1	CAACUAACUAACUUAUUCAASEQ-ID-NO-1069	A-108455.2	UUGAAUUAAGUUAGUUAGUUGCUSEQ-ID-NO-1250	479-501
AD-52706.1	A-108899.1	ACCAACAGCAUAGUCAAAUAAASEQ-ID-NO-1070	A-108471.2	UUAUUUGACUAUGCUGUUGGUUUSEQ-ID-NO-1251	618-640
AD-52707.1	A-108907.1	GAACCCACAGAAAUUCUCUASEQ-ID-NO-1071	A-108487.2	UAGAGAAAUUCUGUGGGUUCUUSEQ-ID-NO-1252	677-699
AD-52708.1	A-108868.1	GAAUAUGUCACUUGAACUCAASEQ-ID-NO-1072	A-108409.2	UUGAGUUAAGUGACUAUUCUUSEQ-ID-NO-1253	391-413
AD-52709.1	A-108876.1	UGAAAGCCUCCUAGAAGAAAASEQ-ID-NO-1073	A-108425.2	UUUUUCUUCUAGGAGGCUUUAAGSEQ-ID-NO-1254	421-443
AD-52710.1	A-108884.1	UUCAACAAAAGUGAAUUAUUSEQ-ID-NO-1074	A-108441.2	AAUUAUUUCACUUUUUGUUGAAGUUSEQ-ID-NO-1255	450-472
AD-52711.1	A-108892.1	AACUAACUAACUUAUUCAAASEQ-ID-NO-1075	A-108457.2	UUUGAAUUAAGUUAGUUAGUUGCSEQ-ID-NO-1256	480-502
AD-52712.1	A-108900.1	CCAACAGCAUAGUCAAAUAAASEQ-ID-NO-1076	A-108473.2	UUUAUUUGACUAUGCUGUUGGUUSEQ-ID-NO-1257	619-641
AD-52713.1	A-108908.1	AACCCACAGAAAUUCUCUAUASEQ-ID-NO-1077	A-108489.2	AUAGAGAAAUUCUGUGGGUUCUUSEQ-ID-NO-1258	678-700
AD-52714.1	A-108869.1	UGUCACUUGAACUCAACUCAASEQ-ID-NO-1078	A-108411.2	UUGAGUUGAGUUAAGUGACUAUASEQ-ID-NO-1259	396-418

AD-52715.1	A-108877.1	GAAAGCCUCCUAGAAGAAAASEQ-ID-NO-1079	A-108427.2	UUUUUCUUCUAGGAGGCUUUAASEQ-ID-NO-1260	422-444
AD-52716.1	A-108885.1	AAUAUUUAGAAGAGCAACUAASEQ-ID-NO-1080	A-108443.2	UUAGUUGCUCUUCUAAAUAUUUCSEQ-ID-NO-1261	465-487
AD-52717.1	A-108893.1	ACUAACUAACUAAUUCAAAASEQ-ID-NO-1081	A-108459.2	UUUUUAGAAUAAGUUAGUUAGUUGSEQ-ID-NO-1262	481-503
AD-52718.1	A-108901.1	CAACAGCAUAGUCAAAUAAAASEQ-ID-NO-1082	A-108475.2	UUUUUAUUUGACUAGCUGUUGGUSEQ-ID-NO-1263	620-642
AD-52719.1	A-108909.1	CCACAGAAAUUCUCUAUCUUSEQ-ID-NO-1083	A-108491.2	AAGAUAGAGAAAUUCUGUGGGUSEQ-ID-NO-1264	681-703
AD-52720.1	A-108870.1	GUCACUUGAACUCAACUCAAASEQ-ID-NO-1084	A-108413.2	UUUGAGUUGAGUUAAGUGACAUSEQ-ID-NO-1265	397-419
AD-52721.1	A-108878.1	CUCCUAGAAGAAAAAUUCUASEQ-ID-NO-1085	A-108429.2	UAGAAUUUUUUCUUCUAGGAGGCSEQ-ID-NO-1266	428-450
AD-52722.1	A-108886.1	AUUUUAGAAGAGCAACUAACUASEQ-ID-NO-1086	A-108445.2	UAGUUAGUUGCUCUUCUAAAUAUSEQ-ID-NO-1267	468-490
AD-52723.1	A-108894.1	CUAACUAACUAAUUCAAAAUASEQ-ID-NO-1087	A-108461.2	AUUUUUGAAUUAAGUUAGUUAGUUSEQ-ID-NO-1268	482-504
AD-52724.1	A-108902.1	CAGCAUAGUCAAAUAAAAGAASEQ-ID-NO-1088	A-108477.2	UUCUUUUUAUUUGACUAGCUGUUSEQ-ID-NO-1269	623-645
AD-52725.1	A-108910.1	GAAAUUAGAAUUGUAAAACAUSEQ-ID-NO-1089	A-108493.2	AUGUUUUUACAUUUCUUAUUUCAUSEQ-ID-NO-1270	746-768
AD-52726.1	A-108871.1	UCACUUGAACUCAACUCAAASEQ-ID-NO-1090	A-108415.2	UUUUGAGUUGAGUUAAGUGACASEQ-ID-NO-1271	398-420
AD-52727.1	A-108879.1	UCUACUUAACAAAAAGUGAASEQ-ID-NO-1091	A-108431.2	UUCACUUUUUGUUGAAGUAGAAUASEQ-ID-NO-1272	445-467
AD-52728.1	A-108887.1	UUUAGAAGAGCAACUAACUAASEQ-ID-NO-1092	A-108447.2	UUAGUUAGUUGCUCUUCUAAAUAASEQ-ID-NO-1273	469-491
AD-52729.1	A-108895.1	AAAACAAGAUAAUAGCAUCAASEQ-ID-NO-1093	A-108463.2	UUGAUGCUAAUUAUCUUGUUUUUCSEQ-ID-NO-1274	556-578
AD-52730.1	A-108903.1	AGCAUAGUCAAAUAAAAGAAASEQ-ID-NO-1094	A-108479.2	UUUCUUUUUAUUUGACUAGCUGUUSEQ-ID-NO-1275	624-646
AD-52731.1	A-108958.1	AGACCCAGCAACUCUCAAGUUSEQ-ID-NO-1095	A-108495.2	AACUUGAGAGUUGCUGGGUCUGASEQ-ID-NO-1276	836-858
AD-52732.1	A-108966.1	AGUCCAUGGACAUAAUUCAAASEQ-ID-NO-1096	A-108511.2	UUGAAUUAAGUCCAUGGACUACSEQ-ID-NO-1277	887-909
AD-52733.1	A-108974.1	GAUGGAUCACAAAACUCAAUASEQ-ID-NO-1097	A-108527.2	AUUGAAGUUUUGUGAUCCAUCUASEQ-ID-NO-1278	917-939
AD-52734.1	A-108982.1	CUAGAGAAGAUUAUCUCCAUAASEQ-ID-NO-1098	A-108543.2	UAUGGAGUAUAUCUUCUCUAGGCSEQ-ID-NO-1279	998-1020

AD-52735.1	A-108990.1	AAAGACAACAAUUAUUAUUEQ-ID-NO-1099	A-108559.2	AAUUAUAUGUUUGUUGUCUUUCSEQ-ID-NO-1280	1064-1086
AD-52736.1	A-108998.1	CAUUAUAUUGAAUAUUCUUUEQ-ID-NO-1100	A-108575.2	AAAAGAAUAUUAUUAUUAUUEQ-ID-NO-1281	1076-1098
AD-52737.1	A-108959.1	GACCCAGCAACUCUCAAGUUUEQ-ID-NO-1101	A-108497.2	AAACUUGAGAGUUGCUGGGUCUGSEQ-ID-NO-1282	837-859
AD-52739.1	A-108975.1	GGAUCACAAACUUAUGAASEQ-ID-NO-1102	A-108529.2	UUCAUUGAAGUUUGUGAUCCAUSEQ-ID-NO-1283	920-942
AD-52740.1	A-108983.1	GAAGAUUAUCUCCAUGUGAASEQ-ID-NO-1103	A-108545.2	UUCACUAUGGAGUAUAUCUUCUUEQ-ID-NO-1284	1003-1025
AD-52741.1	A-108991.1	GACAACAAAUUAUUAUGAASEQ-ID-NO-1104	A-108561.2	UUCAAUAUAUGUUUGUUGUCUUEQ-ID-NO-1285	1067-1089
AD-52742.1	A-108999.1	GGGAAAUACGAAACCAACUASEQ-ID-NO-1105	A-108577.2	UAGUUGGUUUCGUGAUUCCCAASEQ-ID-NO-1286	1102-1124
AD-52743.1	A-108960.1	ACCCAGCAACUCUCAAGUUUEQ-ID-NO-1106	A-108499.2	AAAACUUGAGAGUUGCUGGGUCUUEQ-ID-NO-1287	838-860
AD-52744.1	A-108968.1	GGACAUUAUUAACAUCGAASEQ-ID-NO-1107	A-108515.2	UUCGAUGUUGAAUUAUGUCCAUSEQ-ID-NO-1288	894-916
AD-52745.1	A-108976.1	GAUCACAAACUUAUGAAASEQ-ID-NO-1108	A-108531.2	UUUCAUUGAAGUUUGUGAUCCAASEQ-ID-NO-1289	921-943
AD-52746.1	A-108984.1	ACUCCAUGUGAAGCAAUCUASEQ-ID-NO-1109	A-108547.2	UAGAUUGCUUCACUAUGGAGUAUUEQ-ID-NO-1290	1011-1033
AD-52747.1	A-108992.1	ACAACAAAUUAUUAUUGAAUUEQ-ID-NO-1110	A-108563.2	AUUCAAUUAUUGUUUGUUGUCUUEQ-ID-NO-1291	1068-1090
AD-52748.1	A-109000.1	GGAAAUACGAAACCAACUASEQ-ID-NO-1111	A-108579.2	AUAGUUGGUUUCGUGAUUCCCAASEQ-ID-NO-1292	1103-1125
AD-52749.1	A-108961.1	CCCAGCAACUCUCAAGUUUEQ-ID-NO-1112	A-108501.2	AAAAACUUGAGAGUUGCUGGGUCUUEQ-ID-NO-1293	839-861
AD-52750.1	A-108969.1	GACAUUAUUAACAUCGAAUUEQ-ID-NO-1113	A-108517.2	AUUCGAUGUUGAAUUAUGUCCAASEQ-ID-NO-1294	895-917
AD-52751.1	A-108977.1	AACGUGGGAGAACUACAAUASEQ-ID-NO-1114	A-108533.2	UAUUUGUAGUUCUCCACGUUUCSEQ-ID-NO-1295	940-962
AD-52752.1	A-108985.1	CUCCAUGUGAAGCAAUCUAASEQ-ID-NO-1115	A-108549.2	UUAGAUUGCUUCACUAUGGAGUAUUEQ-ID-NO-1296	1012-1034
AD-52753.1	A-108993.1	CAACAAAUUAUUAUGAAUASEQ-ID-NO-1116	A-108565.2	UAUUAUUAUUAUGUUUGUUGUCSEQ-ID-NO-1297	1069-1091
AD-52754.1	A-109001.1	GAAAUACGAAACCAACUAAUASEQ-ID-NO-1117	A-108581.2	UAUAGUUGGUUUCGUGAUUCCCAASEQ-ID-NO-1298	1104-1126
AD-52755.1	A-108962.1	CUCUCAAGUUUUAUGUCUASEQ-ID-NO-1118	A-108503.2	UAGACAUGAAAAACUUGAGAUUUEQ-ID-NO-1299	847-869

AD-52756.1	A-108970.1	ACAUUAAUCCAACUAGAAUASEQ-ID-NO-1119	A-108519.2	UAUUCGAUGUUGAAUUAUAGUCCSEQ-ID-NO-1300	896-918
AD-52757.1	A-108978.1	GGGAGAACUACAAUUAUGGUUASEQ-ID-NO-1120	A-108535.2	AACCAUAAUUGUAGUUCUCCACSEQ-ID-NO-1301	945-967
AD-52758.1	A-108986.1	UCCAUAGUGAAGCAAUCUAAUASEQ-ID-NO-1121	A-108551.2	AUUAGAUUGCUUCACUAGGAGUASEQ-ID-NO-1302	1013-1035
AD-52759.1	A-108994.1	AACAAACAUUAAUUAUGAAUASEQ-ID-NO-1122	A-108567.2	AUAAUCAAUAAUUGUUGUUGUASEQ-ID-NO-1303	1070-1092
AD-52760.1	A-109002.1	UGGCAAUGUCCCAAUGCAAUASEQ-ID-NO-1123	A-108583.2	AUUGCAUUGGGGACAUUGCCAGUASEQ-ID-NO-1304	1147-1169
AD-52761.1	A-108963.1	UCAGGUAGUCCAUGGACAUUASEQ-ID-NO-1124	A-108505.2	UAAUGUCCAUGGACUACCUGAUASEQ-ID-NO-1305	881-903
AD-52762.1	A-108971.1	UUAUUCAACAUAGAAUAGAUASEQ-ID-NO-1125	A-108521.2	AUCUAUUCGAUGUUGAAUUAUAGUASEQ-ID-NO-1306	899-921
AD-52763.1	A-108979.1	GGAGAACUACAAUUAUGGUUASEQ-ID-NO-1126	A-108537.2	AAACCAUAAUUGUAGUUCUCCASEQ-ID-NO-1307	946-968
AD-52764.1	A-108987.1	CCAUGUGAAGCAAUCUAAUASEQ-ID-NO-1127	A-108553.2	AAUUAGAUUGCUUCACUAGGAGSEQ-ID-NO-1308	1014-1036
AD-52765.1	A-108995.1	ACAAACAUUAAUUAUGAAUUAUASEQ-ID-NO-1128	A-108569.2	AAUAAUCAAUAAUUGUUGUUGUASEQ-ID-NO-1309	1071-1093
AD-52766.1	A-109003.1	AAUGCAAUCCCGGAAAACAAASEQ-ID-NO-1129	A-108585.2	UUUGUUUUCCGGGAUUGCAUUGGSEQ-ID-NO-1310	1160-1182
AD-52767.1	A-108964.1	CAGGUAGUCCAUGGACAUUAAASEQ-ID-NO-1130	A-108507.2	UUAUUGUCCAUGGACUACCUGAUASEQ-ID-NO-1311	882-904
AD-52768.1	A-108972.1	UUAACAUCGAAUAGAUGGAUASEQ-ID-NO-1131	A-108523.2	AUCCAUCUAAUUCGAUGUUGAAUASEQ-ID-NO-1312	903-925
AD-52769.1	A-108980.1	GUUGGGCCUAGAGAAGAUUAUASEQ-ID-NO-1132	A-108539.2	UAUAUCUUCUCUAGGCCCAACCASEQ-ID-NO-1313	991-1013
AD-52770.1	A-108988.1	CAUAGUGAAGCAAUCUAAUUAASEQ-ID-NO-1133	A-108555.2	UAAUUAGAUUGCUUCACUAGGASEQ-ID-NO-1314	1015-1037
AD-52771.1	A-108996.1	AACAUUAUUAUGAAUUAUUCUASEQ-ID-NO-1134	A-108571.2	AAGAAUUAUCAAUAAUUGUUUGSEQ-ID-NO-1315	1074-1096
AD-52772.1	A-109004.1	GCAAUCCCGGAAAACAAAGAUASEQ-ID-NO-1135	A-108587.2	AUCUUUGUUUCCGGGAUUGCAUASEQ-ID-NO-1316	1163-1185
AD-52773.1	A-108965.1	GGUAGUCCAUGGACAUUAAUASEQ-ID-NO-1136	A-108509.2	AAUUAUUGUCCAUGGACUACCUGSEQ-ID-NO-1317	884-906
AD-52774.1	A-108973.1	AUCGAAUAGAUGGAUCACAAASEQ-ID-NO-1137	A-108525.2	UUUGUGAUCCAUCUAAUUCGAUGUASEQ-ID-NO-1318	909-931
AD-52775.1	A-108981.1	CCUAGAGAAGAUUAUCUCCAUSEQ-ID-NO-1138	A-108541.2	AUGGAGUAUAUCUUCUCUAGGCCSEQ-ID-NO-1319	997-1019

AD-52776.1	A-108989.1	<u>GUUGGAAGACUGGAAAGACAASEQ-ID-NO-1139</u>	A-108557.2	<u>UUGUCUUUCCAGUCUCCAACUCSEQ-ID-NO-1320</u>	1051-1073
AD-52777.1	A-108997.1	<u>ACAUUAUAUUGAAUAUUCUUUUEQ-ID-NO-1140</u>	A-108573.2	<u>AAAGAAUAUUCAAUAUAUUGUUUEQ-ID-NO-1321</u>	1075-1097
AD-52778.1	A-109005.1	<u>CAAUCCCGGAAAACAAAGAUUUEQ-ID-NO-1141</u>	A-108589.2	<u>AAUCUUUGUUUUCGGGAUUGCASEQ-ID-NO-1322</u>	1164-1186
AD-52779.1	A-109013.1	<u>CUACUUGGGAUCACAAAGCAASEQ-ID-NO-1142</u>	A-108605.2	<u>UUGCUUUGUGAUCCCAAGUAGAASEQ-ID-NO-1323</u>	1194-1216
AD-52780.1	A-109021.1	<u>ACAACCUAAAUGGUAAAUAUASEQ-ID-NO-1143</u>	A-108621.2	<u>UAUAUUUACCAUUUAGGUUGUUUEQ-ID-NO-1324</u>	1281-1303
AD-52781.1	A-109029.1	<u>AUCCAUCCAACAGAUUCAGAASEQ-ID-NO-1144</u>	A-108637.2	<u>UUCUGAAUCUGUUGGAUGGAUCCASEQ-ID-NO-1325</u>	1400-1422
AD-52782.1	A-109037.1	<u>AACUGAGGC AAAUUUAAAAGASEQ-ID-NO-1145</u>	A-108653.2	<u>UCUUUUAAAAUUUGCCUCAGUUCASEQ-ID-NO-1326</u>	1432-1454_G21A
AD-52783.1	A-109045.1	<u>AGAGUAUGUGUAAAAUCUGUUEQ-ID-NO-1146</u>	A-108669.2	<u>ACAGAUUUUUACACAUACUCUGUUEQ-ID-NO-1327</u>	1913-1935
AD-52784.1	A-109006.1	<u>AAUCCCGGAAAACAAAGAUUUUEQ-ID-NO-1147</u>	A-108591.2	<u>AAAUCUUUGUUUUCGGGAUUGCSEQ-ID-NO-1328</u>	1165-1187
AD-52785.1	A-109014.1	<u>UACUUGGGAUCACAAAGCAASEQ-ID-NO-1148</u>	A-108607.2	<u>UUUGCUUUGUGAUCCCAAGUAGASEQ-ID-NO-1329</u>	1195-1217
AD-52786.1	A-109022.1	<u>CAACCUAAAUGGUAAAUAUASEQ-ID-NO-1149</u>	A-108623.2	<u>UUUAUAUUUACCAUUUAGGUUGUUEQ-ID-NO-1330</u>	1282-1304
AD-52787.1	A-109030.1	<u>UUGAAUGAACUGAGGCAAAUUEQ-ID-NO-1150</u>	A-108639.2	<u>AAUUUGCCUCAGUUAUUCAAAGSEQ-ID-NO-1331</u>	1425-1447
AD-52788.1	A-109038.1	<u>ACUGAGGCAAAUUUAAAAGGASEQ-ID-NO-1151</u>	A-108655.2	<u>UCCUUUUAAAAUUUGCCUCAGUUCSEQ-ID-NO-1332</u>	1433-1455_C21A
AD-52789.1	A-109046.1	<u>GAGUAUGUGUAAAAUCUGUASEQ-ID-NO-1152</u>	A-108671.2	<u>UACAGAUUUUUACACAUACUCUGSEQ-ID-NO-1333</u>	1914-1936
AD-52791.1	A-109015.1	<u>ACUUGGGAUCACAAAGCAAASEQ-ID-NO-1153</u>	A-108609.2	<u>UUUUGCUUUGUGAUCCCAAGUAGSEQ-ID-NO-1334</u>	1196-1218
AD-52792.1	A-109023.1	<u>AUGGUAAAUAUAACAAACCAASEQ-ID-NO-1154</u>	A-108625.2	<u>UUGGUUUUGUUAUUAUUUACCAUUUEQ-ID-NO-1335</u>	1290-1312
AD-52793.1	A-109031.1	<u>UGAAUGAACUGAGGCAAAUUEQ-ID-NO-1155</u>	A-108641.2	<u>AAAUUUGCCUCAGUUAUUCAAASEQ-ID-NO-1336</u>	1426-1448
AD-52794.1	A-109039.1	<u>CUGAGGCAAAUUUAAAAGGCASEQ-ID-NO-1156</u>	A-108657.2	<u>UGCCUUUUAAAAUUUGCCUCAGUUEQ-ID-NO-1337</u>	1434-1456
AD-52795.1	A-109047.1	<u>AGUAUGUGUAAAAUCUGUAASEQ-ID-NO-1157</u>	A-108673.2	<u>UUACAGAUUUUUACACAUACUCUUEQ-ID-NO-1338</u>	1915-1937
AD-52796.1	A-109008.1	<u>GAAAACAAAGAUUUGGUGUUUEQ-ID-NO-1158</u>	A-108595.2	<u>AAACACCAAAUCUUUGUUUUCGSEQ-ID-NO-1339</u>	1172-1194

AD-52797.1	A-109016.1	AGUGUGGAGAAAAACAACCUAASEQ-ID-NO-1159	A-108611.2	UUAGGUUGUUUUCUCCACACUCASEQ-ID-NO-1340	1269-1291
AD-52798.1	A-109024.1	GUCUCAAAAUGGAAGGUUAUASEQ-ID-NO-1160	A-108627.2	UAUAACCUUCCAUUUUGAGACUUSEQ-ID-NO-1341	1354-1376
AD-52799.1	A-109032.1	GAAUGAACUGAGGCAAAUUUASEQ-ID-NO-1161	A-108643.2	UAAUUUUGCCUCAGUUCAUUCAASEQ-ID-NO-1342	1427-1449
AD-52800.1	A-109040.1	UGAGGCAAAUUUAAAAGGCAASEQ-ID-NO-1162	A-108659.2	UUGCCUUUUAAAUUUGCCUCAGUSEQ-ID-NO-1343	1435-1457
AD-52801.1	A-109048.1	GUAUGUGUAAAAUCUGUAAUASEQ-ID-NO-1163	A-108675.2	AUUACAGAUUUUUACACAUACUCSEQ-ID-NO-1344	1916-1938
AD-52802.1	A-109009.1	AAAACAAAGAUUUGGUGUUUUSEQ-ID-NO-1164	A-108597.2	AAAACACCAAUUCUUUGUUUUCSEQ-ID-NO-1345	1173-1195
AD-52803.1	A-109017.1	GUGUGGAGAAAAACAACCUAAASEQ-ID-NO-1165	A-108613.2	UUUAGGUUGUUUUCUCCACACUCSEQ-ID-NO-1346	1270-1292
AD-52804.1	A-109025.1	AUGGAAGGUUAUACUCUAUAASEQ-ID-NO-1166	A-108629.2	UUUAUAGAGUAUAACCUCCAUUUUSEQ-ID-NO-1347	1362-1384
AD-52805.1	A-109033.1	AAUGAACUGAGGCAAAUUUAASEQ-ID-NO-1167	A-108645.2	UUAAAAUUUGCCUCAGUUCAUUCASEQ-ID-NO-1348	1428-1450
AD-52806.1	A-109041.1	GAGGCAAAUUUAAAAGGCAAUSEQ-ID-NO-1168	A-108661.2	AUUGCCUUUUAAAUUUGCCUCAGSEQ-ID-NO-1349	1436-1458
AD-52807.1	A-109049.1	UAUGUGUAAAAUCUGUAAUASEQ-ID-NO-1169	A-108677.2	UAUUACAGAUUUUUACACAUACUSEQ-ID-NO-1350	1917-1939
AD-52808.1	A-109010.1	ACAAAGAUUUGGUGUUUUCUASEQ-ID-NO-1170	A-108599.2	UAGAAAACACCAAUUCUUUGUUUUSEQ-ID-NO-1351	1176-1198
AD-52809.1	A-109018.1	UGUGGAGAAAAACAACCUAAAUSEQ-ID-NO-1171	A-108615.2	AUUUAGGUUGUUUUCUCCACACUSEQ-ID-NO-1352	1271-1293
AD-52810.1	A-109026.1	UGGAAGGUUAUACUCUAUAAASEQ-ID-NO-1172	A-108631.2	UUUAUAGAGUAUAACCUCCAUUSEQ-ID-NO-1353	1363-1385
AD-52811.1	A-109034.1	AUGAACUGAGGCAAAUUUAAASEQ-ID-NO-1173	A-108647.2	UUUAAAUUUGCCUCAGUUCAUUCSEQ-ID-NO-1354	1429-1451
AD-52812.1	A-109042.1	AGGCAAAUUUAAAAGGCAAUASEQ-ID-NO-1174	A-108663.2	UAUUGCCUUUUAAAUUUGCCUCASEQ-ID-NO-1355	1437-1459
AD-52813.1	A-109011.1	AAGAUUUGGUGUUUUCUACUUSEQ-ID-NO-1175	A-108601.2	AAGUAGAAAACACCAAUUCUUUGSEQ-ID-NO-1356	1179-1201
AD-52814.1	A-109019.1	AAACAACCUAAAUGGUAAAUASEQ-ID-NO-1176	A-108617.2	UAUUUACCAUUUAGGUUGUUUUCSEQ-ID-NO-1357	1279-1301
AD-52815.1	A-109027.1	AUACUCUAUAAAAUCAACCAASEQ-ID-NO-1177	A-108633.2	UUGGUUGAUUUUAUAGAGUAUAASEQ-ID-NO-1358	1372-1394
AD-52816.1	A-109035.1	UGAACUGAGGCAAAUUUAAAASEQ-ID-NO-1178	A-108649.2	UUUUAAAUUUGCCUCAGUUCAUUUSEQ-ID-NO-1359	1430-1452

AD-52817.1	A-109043.1	GGCAAUUUUAAAAGGCAAUA ~~SEQ ID NO 1179~~	A-108665.2	UUAUUGCCUUUUAAAUUUGCCUC ~~SEQ ID NO 1360~~	1438-1460
AD-52818.1	A-109012.1	UUUUCUACUUGGGAUCACAA ~~SEQ ID NO 1180~~	A-108603.2	UUUGUGAUCCCAAGUAGAAAAC ~~SEQ ID NO 1361~~	1190-1212
AD-52819.1	A-109020.1	AACAAACUAAAUGGUAAAAUA ~~SEQ ID NO 1181~~	A-108619.2	AUUUUUACCAUUUAGGUUUUU ~~SEQ ID NO 1362~~	1280-1302
AD-52820.1	A-109028.1	UACUCUAUAAAAUCAACCAA ~~SEQ ID NO 1182~~	A-108635.2	UUUGGUUGAUUUUAUAGAGUAU ~~SEQ ID NO 1363~~	1373-1395
AD-52821.1	A-109036.1	GAACUGAGGCAAAUUUAAAA ~~SEQ ID NO 1183~~	A-108651.2	UUUUUAAAUUUGCCUCAGUUCAU ~~SEQ ID NO 1364~~	1431-1453_G21A
AD-52822.1	A-109044.1	CAGAGUAUGUGUAAAAUCUU ~~SEQ ID NO 1184~~	A-108667.2	AAGAUUUUUACACAUACUCUG ~~SEQ ID NO 1365~~	1912-1934_G21U

Table 10. Modified Sense and antisense strand sequences of ANGPTL3 dsRNAs without GalNal conjugation

These sequences are the same as the sequences listed in Table 8 except that they do not contain GalNal conjugation.

Duplex Name	Sense Oligo Name	Sense Sequence (SEQ ID NOS 1366-1546, respectively, in order of appearance)	Antisense OligoName	Antisense Oligo Sequence (SEQ ID NOS 1547-1727, respectively, in order of appearance)
AD-52637.1	A-108817.1	UfcAfcAfaUfuAfaGfcUfcCfuUfuUf ~~SEQ ID NO 1366~~	A-108307.2	aAfaGfaAfgGfaGfcuuAfaUfuGfuGfasAfsa ~~SEQ ID NO 1547~~
AD-52638.1	A-108825.1	UfuAfuUfgUfuCfCfUfcUfaGfuUfaUfuUf ~~SEQ ID NO 1367~~	A-108323.2	aAfaUfaAfcUfaGfaggAfaCfaAfuAfasAfsa ~~SEQ ID NO 1548~~
AD-52639.1	A-108833.1	GfcUfaUfgUfuAfgGfAfcGfaUfgUfaAfaAf ~~SEQ ID NO 1368~~	A-108339.2	uUfuUfaCfaUfcGfucuAfaCfaUfaGfcsAfsa ~~SEQ ID NO 1549~~
AD-52640.1	A-108841.1	GfgAfcAfuGfgUfCfUfuAfaAfgAfcUfuUf ~~SEQ ID NO 1369~~	A-108355.2	aAfaGfuCfuUfuAfagaCfcAfuGfuCfcsCfsa ~~SEQ ID NO 1550~~
AD-52641.1	A-108849.1	CfaAfaAfaCfuCfAfaAfcAfuAfuUfuGfaUf ~~SEQ ID NO 1370~~	A-108371.2	aUfcAfaAfuAfuGfuugAfgUfuUfuUfgsAfsa ~~SEQ ID NO 1551~~
AD-52642.1	A-108857.1	AfcCfaGfuGfaAfaUfcAfaAfgAfaGfaAf ~~SEQ ID NO 1371~~	A-108387.2	uUfcUfuCfuUfuGfauuUfcAfcUfgGfusUfsu ~~SEQ ID NO 1552~~
AD-52643.1	A-108818.1	CfaCfaAfuUfaAfaGfCfCfUfuCfuUfuUf ~~SEQ ID NO 1372~~	A-108309.2	aAfaAfgAfaGfgAfgcuUfaAfuUfgUfgsAfsa ~~SEQ ID NO 1553~~
AD-52645.1	A-108834.1	CfuAfuGfuUfaGfAfcGfuGfuAfaAfaAf ~~SEQ ID NO 1373~~	A-108341.2	uUfuUfuAfcAfuCfducUfaAfcAfuAfgsCfsa ~~SEQ ID NO 1554~~

AD-52647.1	A-108850.1	UfcAfaCfaUfaUfUfUfgAfuCfaGfuCfuUfSEQ-ID-NO-1374	A-108373.2	aAfgAfcUfgAfuCfaaaUfaUfgUfuGfasGfsuSEQ-ID-NO-1555
AD-52648.1	A-108858.1	AfaCfuGfaGfaAfGfAfaCfuAfcAfuAfuAfSEQ-ID-NO-1375	A-108389.2	uAfuAfuGfuAfgUfucuUfcUfcAfgUfusCfscSEQ-ID-NO-1556
AD-52649.1	A-108819.1	AfcAfaUfuAfaGfCfUfcCfuUfcUfuUfuUfSEQ-ID-NO-1376	A-108311.2	aAfaAfaGfaAfgGfagcUfuAfaUfuGfusGfsaSEQ-ID-NO-1557
AD-52650.1	A-108827.1	CfuCfcAfgAfgCfCfAfaAfaUfcAfaGfaUfSEQ-ID-NO-1377	A-108327.2	aUfcUfuGfaUfuUfuggCfuCfuGfgAfgsAfsuSEQ-ID-NO-1558
AD-52651.1	A-108835.1	CfgAfuGfuAfaAfAfAfuUfuUfaGfcCfaAfSEQ-ID-NO-1378	A-108343.2	uUfgGfcUfaAfaAfuuuUfuAfcAfuCfcsUfscSEQ-ID-NO-1559
AD-52652.1	A-108843.1	GfuCfuUfaAfaGfAfCfuUfuGfuCfcAfuAfSEQ-ID-NO-1379	A-108359.2	uAfuGfgAfcAfaAfgucUfuUfaAfgAfcCfsaSEQ-ID-NO-1560
AD-52653.1	A-108851.1	CfaAfcAfuAfuUfUfGfaUfcAfgUfcUfuUfSEQ-ID-NO-1380	A-108375.2	aAfaGfaCfuGfaUfcaaAfuAfuGfuUfgsAfsuSEQ-ID-NO-1561
AD-52654.1	A-108859.1	AfcUfgAfgAfaGfAfAfcUfaCfaUfaUfaAfSEQ-ID-NO-1381	A-108391.2	uUfaUfaUfgUfaGfuucUfuCfuCfaGfusUfscSEQ-ID-NO-1562
AD-52656.1	A-108828.1	CfcAfgAfgCfcAfAfAfaUfcAfaGfaUfuUfSEQ-ID-NO-1382	A-108329.2	aAfaUfcUfuGfaUfuuuGfgCfuCfuGfgsAfsuSEQ-ID-NO-1563
AD-52657.1	A-108836.1	GfaUfgUfaAfaAfAfUfuUfuAfgCfcAfaUfSEQ-ID-NO-1383	A-108345.2	aUfuGfgCfuAfaAfauuUfuUfaCfaUfcsGfsuSEQ-ID-NO-1564
AD-52658.1	A-108844.1	UfcUfuAfaAfgAfcUfuUfgUfcCfaUfaAfSEQ-ID-NO-1384	A-108361.2	uUfaUfgGfaCfaAfaguCfuUfuAfaGfasCfscSEQ-ID-NO-1565
AD-52659.1	A-108852.1	AfaCfaUfaUfuUfGfAfuCfaGfuCfuUfuUfSEQ-ID-NO-1385	A-108377.2	aAfaAfgAfcUfgAfucaAfaUfaUfgUfusGfsaSEQ-ID-NO-1566
AD-52660.1	A-108860.1	CfuGfaGfaAfgAfAfCfuAfcAfuAfuAfaAfSEQ-ID-NO-1386	A-108393.2	uUfuAfuAfuGfuAfguuCfuUfcUfcAfgsUfsuSEQ-ID-NO-1567
AD-52661.1	A-108821.1	AfaUfuAfaGfcUfcCfuUfcUfuUfuUfaUfSEQ-ID-NO-1387	A-108315.2	aUfaAfaAfaGfaAfggaGfcUfuAfaUfusGfsuSEQ-ID-NO-1568
AD-52662.1	A-108829.1	AfaAfuCfaAfgAfUfUfuGfcUfaUfgUfuAfSEQ-ID-NO-1388	A-108331.2	uAfaCfaUfaGfcAfaauCfuUfgAfuUfusUfsgSEQ-ID-NO-1569
AD-52663.1	A-108837.1	UfuCfaGfuUfgGfGfAfcAfuGfgUfcUfuAfSEQ-ID-NO-1389	A-108347.2	uAfaGfaCfcAfuGfuuccCfaAfcUfgAfasGfsgSEQ-ID-NO-1570
AD-52664.1	A-108845.1	GfgGfcCfaAfaUfUfAfaUfgAfcAfuAfuUfSEQ-ID-NO-1390	A-108363.2	aAfuAfuGfuCfaUfuuaUfuUfgGfcCfcsUfsuSEQ-ID-NO-1571
AD-52665.1	A-108853.1	AfcAfuAfuUfuGfAfUfcAfgUfcUfuUfuUfSEQ-ID-NO-1391	A-108379.2	aAfaAfaGfaCfuGfaucAfaAfuAfuGfusUfsgSEQ-ID-NO-1572
AD-52666.1	A-108861.1	AfgAfaCfuAfcAfUfAfaAfaAfcUfaCfaAfSEQ-ID-NO-1392	A-108395.2	uUfgUfaGfuUfuAfuauGfuAfgUfuCfusUfscSEQ-ID-NO-1573
AD-52667.1	A-108822.1	AfuUfaAfgCfuCfCfuCfuUfuUfuAfuUfSEQ-ID-NO-1393	A-108317.2	aAfuAfaAfaAfgAfggAfgCfuUfaAfusUfsgSEQ-ID-NO-1574

AD-52668.1	A-108830.1	AfgAfuUfuGfcUfAfUfgUfuAfgAfcGfaUfSEQ-ID-NO-1394	A-108333.2	aUfcGfuCfuAfaCfaaGfcAfaAfuCfusUfsgSEQ-ID-NO-1575
AD-52669.1	A-108838.1	UfcAfgUfuGfgGfAfCfaUfgGfuCfuUfaAfSEQ-ID-NO-1395	A-108349.2	uUfaAfgAfcCfaUfgucCfcAfaCfuGfasAfsSEQ-ID-NO-1576
AD-52670.1	A-108846.1	GfgCfcAfaAfuUfAfAfuGfaCfaUfaUfuUfSEQ-ID-NO-1396	A-108365.2	aAfaUfaUfgUfcAfuuaAfuUfuGfgCfcsCfsuSEQ-ID-NO-1577
AD-52671.1	A-108854.1	CfaUfaUfuUfgAfUfCfaGfuCfuUfuUfuAfSEQ-ID-NO-1397	A-108381.2	uAfaAfaAfgAfcUfgauCfaAfaUfaUfsgUfsuSEQ-ID-NO-1578
AD-52672.1	A-108862.1	UfaCfaUfaUfaAfAfCfuAfcAfaGfuCfaAfSEQ-ID-NO-1398	A-108397.2	uUfgAfcUfuGfuAfguuUfaUfaUfgUfasGfsuSEQ-ID-NO-1579
AD-52673.1	A-108823.1	UfuUfuAfuUfgUfUfCfcUfcUfaGfuUfaUfSEQ-ID-NO-1399	A-108319.2	aUfaAfcUfaGfaGfgaaCfaAfuAfaAfasAfsSEQ-ID-NO-1580
AD-52674.1	A-108831.1	UfuGfcUfaUfgUfUfAfgAfcGfaUfgUfaAfSEQ-ID-NO-1400	A-108335.2	uUfaCfaUfcGfuCfuuaCfaUfaGfcAfasAfsuSEQ-ID-NO-1581
AD-52675.1	A-108839.1	CfaGfuUfgGfgAfcAfuGfgUfcUfuAfaAfSEQ-ID-NO-1401	A-108351.2	uUfuAfaGfaCfcAfuguCfcCfaAfcUfsgAfsaSEQ-ID-NO-1582
AD-52676.1	A-108847.1	AfaAfuUfaAfuGfAfCfaUfaUfuUfcAfaAfSEQ-ID-NO-1402	A-108367.2	uUfuGfaAfaUfaUfgucAfuUfaAfuUfusGfsgSEQ-ID-NO-1583
AD-52677.1	A-108855.1	GfaUfcAfgUfcUfUfUfuUfaUfgAfuCfuAfSEQ-ID-NO-1403	A-108383.2	uAfgAfuCfaUfaAfaaaGfaCfuGfaUfcsAfsaSEQ-ID-NO-1584
AD-52678.1	A-108863.1	AfcAfuAfuAfaAfCfUfaCfaAfgUfcAfaAfSEQ-ID-NO-1404	A-108399.2	uUfuGfaCfuUfgUfaguUfuAfuAfuGfusAfsSEQ-ID-NO-1585
AD-52679.1	A-108824.1	UfuUfaUfuGfuUfCfcUfcUfaAfgUfuAfuUfSEQ-ID-NO-1405	A-108321.2	aAfuAfaCfuAfgAfggaAfcAfaUfaAfasAfsaSEQ-ID-NO-1586
AD-52680.1	A-108832.1	UfgCfuAfuGfuUfAfGfaCfgAfuGfuAfaAfSEQ-ID-NO-1406	A-108337.2	uUfuAfcAfuCfgUfcuaAfcAfuAfgCfasAfsaSEQ-ID-NO-1587
AD-52681.1	A-108840.1	GfgGfaCfaUfgGfUfCfuUfaAfaGfaCfuUfSEQ-ID-NO-1407	A-108353.2	aAfgUfcUfuUfaAfgacCfaUfgUfcCfcsAfsaSEQ-ID-NO-1588
AD-52682.1	A-108848.1	UfgAfcAfuAfuUfUfCfaAfaAfaCfuCfaAfSEQ-ID-NO-1408	A-108369.2	uUfgAfgUfuUfuUfgaaAfuAfuGfuCfasUfsuSEQ-ID-NO-1589
AD-52683.1	A-108856.1	AfuCfaGfuCfuUfUfUfuAfuGfaUfcUfaUfSEQ-ID-NO-1409	A-108385.2	aUfaGfaUfcAfuAfaaaAfgAfcUfgAfusCfsaSEQ-ID-NO-1590
AD-52684.1	A-108864.1	CfaUfaUfaAfaCfUfAfcAfaGfuCfaAfaAfSEQ-ID-NO-1410	A-108401.2	uUfuUfgAfcUfuGfuagUfuUfaUfaUfsgUfsaSEQ-ID-NO-1591
AD-52685.1	A-108872.1	CfuUfgAfaCfuCfAfAfcUfcAfaAfaCfuUfSEQ-ID-NO-1411	A-108417.2	aAfgUfuUfuGfaGfuugAfgUfuCfaAfgsUfsgSEQ-ID-NO-1592
AD-52686.1	A-108880.1	CfuAfcUfuCfaAfcAfaAfaAfgUfgAfaAfSEQ-ID-NO-1412	A-108433.2	uUfuCfaCfuUfuUfuguUfgAfaGfuAfgsAfsaSEQ-ID-NO-1593
AD-52687.1	A-108888.1	AfaGfaGfcAfaCfUfAfaCfuAfaCfuUfaAfSEQ-ID-NO-1413	A-108449.2	uUfaAfgUfuAfgUfuagUfuGfcUfcUfusCfsuSEQ-ID-NO-1594

AD-52688.1	A-108896.1	AfaAfcAfaGfaUfAfAfuAfgCfaUfcAfaAfSEQ-ID-NO-1414	A-108465.2	uUfuGfaUfgCfuAfuaUfcUfuGfuUfusUfsuSEQ-ID-NO-1595
AD-52689.1	A-108904.1	GfcAfuAfgUfcAfAfAfuAfaAfaGfaAfaUfSEQ-ID-NO-1415	A-108481.2	aUfuUfcUfuUfuAfuuuGfaCfuAfuGfcsUfsgSEQ-ID-NO-1596
AD-52690.1	A-108865.1	AfuAfuAfaAfcUfAfCfaAfgUfcAfaAfaAfSEQ-ID-NO-1416	A-108403.2	uUfuUfuGfaCfuUfguaGfuUfuAfuAfusGfsuSEQ-ID-NO-1597
AD-52691.1	A-108873.1	GfaAfcUfcAfaCfUfCfaAfaAfcUfuGfaAfSEQ-ID-NO-1417	A-108419.2	uUfcAfaGfuUfuUfgagUfuGfaGfuUfcsAfsaSEQ-ID-NO-1598
AD-52692.1	A-108881.1	UfaCfuUfcAfaCfAfAfaAfaGfuGfaAfaUfSEQ-ID-NO-1418	A-108435.2	aUfuUfcAfcUfuUfuugUfuGfaAfgUfasGfsaSEQ-ID-NO-1599
AD-52693.1	A-108889.1	AfgAfgCfaAfcUfAfAfcUfaAfcUfuAfaUfSEQ-ID-NO-1419	A-108451.2	aUfuAfaGfuUfaGfuuaGfuUfgCfuCfusUfscSEQ-ID-NO-1600
AD-52694.1	A-108897.1	GfaUfaAfuAfgCfAfUfcAfaAfgAfcCfuUfSEQ-ID-NO-1420	A-108467.2	aAfgGfuCfuUfuGfaugCfuAfuUfaUfcsUfsuSEQ-ID-NO-1601
AD-52695.1	A-108905.1	CfaUfaGfuCfaAfAfUfaAfaAfgAfaAfuAfSEQ-ID-NO-1421	A-108483.2	uAfuUfuCfuUfuUfauuUfgAfcUfaUfgsCfsuSEQ-ID-NO-1602
AD-52696.1	A-108866.1	UfaUfaAfaCfuAfCfAfaGfuCfaAfaAfaUfSEQ-ID-NO-1422	A-108405.2	aUfuUfuUfgAfcUfuguAfgUfuUfaUfasUfsgSEQ-ID-NO-1603
AD-52697.1	A-108874.1	AfaCfuCfaAfcUfCfAfaAfaCfuUfgAfaAfSEQ-ID-NO-1423	A-108421.2	uUfuCfaAfgUfuUfugaGfuUfgAfgUfusCfsaSEQ-ID-NO-1604
AD-52698.1	A-108882.1	AfcUfuCfaAfcAfAfAfaAfgUfgAfaAfuAfSEQ-ID-NO-1424	A-108437.2	uAfuUfuCfaCfuUfuuuGfuUfgAfaGfusAfsaSEQ-ID-NO-1605
AD-52699.1	A-108890.1	GfaGfcAfaCfuAfAfCfuAfaCfuUfaAfuUfSEQ-ID-NO-1425	A-108453.2	aAfuUfaAfgUfuAfguuAfgUfuGfcUfcsUfsuSEQ-ID-NO-1606
AD-52700.1	A-108898.1	AfaCfcAfaCfaGfCfAfuAfgUfcAfaAfuAfSEQ-ID-NO-1426	A-108469.2	uAfuUfuGfaCfuAfugcUfgUfuGfgUfusUfsaSEQ-ID-NO-1607
AD-52701.1	A-108906.1	AfgUfcAfaAfuAfAfAfaGfaAfaUfaGfaAfSEQ-ID-NO-1427	A-108485.2	uUfcUfaUfuUfcUfuuuAfuUfuGfaCfusAfsuSEQ-ID-NO-1608
AD-52702.1	A-108867.1	AfgUfcAfaAfaUfGfaAfgAfgGfuAfaAfSEQ-ID-NO-1428	A-108407.2	uUfuAfcCfuCfuUfcauUfuUfuGfaCfusUfsgSEQ-ID-NO-1609
AD-52703.1	A-108875.1	CfuUfgAfaAfgCfCfUfcCfuAfgAfaGfaAfSEQ-ID-NO-1429	A-108423.2	uUfcUfuCfuAfgGfaggCfuUfuCfaAfgsUfsuSEQ-ID-NO-1610
AD-52704.1	A-108883.1	CfuUfcAfaCfaAfAfAfaGfuGfaAfaUfaUfSEQ-ID-NO-1430	A-108439.2	aUfaUfuUfcAfcUfuuuUfgUfuGfaAfgsUfsaSEQ-ID-NO-1611
AD-52705.1	A-108891.1	CfaAfcUfaAfcUfAfAfcUfuAfaUfuCfaAfSEQ-ID-NO-1431	A-108455.2	uUfgAfaUfuAfaGfuuaGfuUfaGfuUfgsCfsuSEQ-ID-NO-1612
AD-52706.1	A-108899.1	AfcCfaAfcAfgCfAfUfaGfuCfaAfaUfaAfSEQ-ID-NO-1432	A-108471.2	uUfaUfuUfgAfcUfaugCfuGfuUfgGfusUfsuSEQ-ID-NO-1613
AD-52707.1	A-108907.1	GfaAfcCfcAfcAfGfAfaAfuUfuCfuCfuAfSEQ-ID-NO-1433	A-108487.2	uAfgAfgAfaAfuUfucuGfuGfgGfuUfcsUfsuSEQ-ID-NO-1614

AD-52708.1	A-108868.1	GfaAfuAfuGfuCfAfCfuUfgAfaCfuCfaAfSEQ-ID-NO-1434	A-108409.2	uUfgAfgUfuCfaAfgugAfcAfuAfuUfcsUfsuSEQ-ID-NO-1615
AD-52709.1	A-108876.1	UfgAfaAfgCfcUfCfCfuAfgAfaGfaAfaAfSEQ-ID-NO-1435	A-108425.2	uUfuUfcUfuCfuAfggaGfgCfuUfuCfasAfsuSEQ-ID-NO-1616
AD-52710.1	A-108884.1	UfuCfaAfcAfaAfAfAfgUfgAfaAfuAfuUfSEQ-ID-NO-1436	A-108441.2	aAfuAfuUfuCfaCfuuuUfuGfuUfgAfasGfsuSEQ-ID-NO-1617
AD-52711.1	A-108892.1	AfaCfuAfaCfuAfAfCfuUfaAfuUfcAfaAfSEQ-ID-NO-1437	A-108457.2	uUfuGfaAfuUfaAfguuAfgUfuAfgUfusGfscSEQ-ID-NO-1618
AD-52712.1	A-108900.1	CfcAfaCfaGfcAfUfAfgUfcAfaAfuAfaAfSEQ-ID-NO-1438	A-108473.2	uUfuAfuUfuGfaCfuauGfcUfgUfuGfgsUfsuSEQ-ID-NO-1619
AD-52713.1	A-108908.1	AfaCfcCfaCfaGfaAfaUfuUfcUfcUfaUfSEQ-ID-NO-1439	A-108489.2	aUfaGfaGfaAfaUfuucUfgUfgGfgUfusCfsuSEQ-ID-NO-1620
AD-52714.1	A-108869.1	UfgUfcAfcUfuGfAfAfcUfcAfaCfuCfaAfSEQ-ID-NO-1440	A-108411.2	uUfgAfgUfuGfaGfuucAfaGfuGfaCfasUfsaSEQ-ID-NO-1621
AD-52715.1	A-108877.1	GfaAfaGfcCfuCfCfUfaGfaAfgAfaAfaAfSEQ-ID-NO-1441	A-108427.2	uUfuUfuCfuUfcUfaggAfgGfcUfuUfcsAfsaSEQ-ID-NO-1622
AD-52716.1	A-108885.1	AfaUfaUfuUfaGfAfAfgAfgCfaAfcUfaAfSEQ-ID-NO-1442	A-108443.2	uUfaGfuUfgCfuCfuucUfaAfaUfaUfusUfscSEQ-ID-NO-1623
AD-52717.1	A-108893.1	AfcUfaAfcUfaAfCfUfuAfaUfuCfaAfaAfSEQ-ID-NO-1443	A-108459.2	uUfuUfgAfaUfuAfguUfaGfuUfaGfusUfsgSEQ-ID-NO-1624
AD-52718.1	A-108901.1	CfaAfcAfgCfaUfAfGfuCfaAfaUfaAfaAfSEQ-ID-NO-1444	A-108475.2	uUfuUfaUfuUfgAfcuaUfgCfuGfuUfgsGfsuSEQ-ID-NO-1625
AD-52719.1	A-108909.1	CfcAfcAfgAfaAfUfUfuCfuCfuAfuCfuUfSEQ-ID-NO-1445	A-108491.2	aAfgAfuAfgAfgAfaauUfuCfuGfuGfgsGfsuSEQ-ID-NO-1626
AD-52720.1	A-108870.1	GfuCfaCfuUfgAfAfCfuCfaAfcUfcAfaAfSEQ-ID-NO-1446	A-108413.2	uUfuGfaGfuUfgAfguuCfaAfgUfgAfcAfsuSEQ-ID-NO-1627
AD-52721.1	A-108878.1	CfuCfcUfaGfaAfgAfaAfaAfaUfuCfuAfSEQ-ID-NO-1447	A-108429.2	uAfgAfaUfuUfuUfucuUfcUfaGfgAfgsGfscSEQ-ID-NO-1628
AD-52722.1	A-108886.1	AfuUfuAfgAfaGfAfGfcAfaCfuAfaCfuAfSEQ-ID-NO-1448	A-108445.2	uAfgUfuAfgUfuGfcucUfuCfuAfaAfsAfsuSEQ-ID-NO-1629
AD-52723.1	A-108894.1	CfuAfaCfuAfaCfUfUfaAfuUfcAfaAfaUfSEQ-ID-NO-1449	A-108461.2	aUfuUfuGfaAfuUfaagUfuAfgUfuAfgsUfsuSEQ-ID-NO-1630
AD-52724.1	A-108902.1	CfaGfcAfuAfgUfCfAfaAfuAfaAfaGfaAfSEQ-ID-NO-1450	A-108477.2	uUfcUfuUfuAfuUfugaCfuAfuGfcUfgsUfsuSEQ-ID-NO-1631
AD-52725.1	A-108910.1	GfaAfaUfaAfgAfAfAfuGfuAfaAfaCfaUfSEQ-ID-NO-1451	A-108493.2	aUfgUfuUfuAfcAfuuuCfuUfaUfuUfcsAfsuSEQ-ID-NO-1632
AD-52726.1	A-108871.1	UfcAfcUfuGfaAfcUfcAfaCfuCfaAfaAfSEQ-ID-NO-1452	A-108415.2	uUfuUfgAfgUfuGfaguUfcAfaGfuGfasCfsaSEQ-ID-NO-1633
AD-52727.1	A-108879.1	UfcUfaCfuUfcAfAfCfaAfaAfaGfuGfaAfSEQ-ID-NO-1453	A-108431.2	uUfcAfcUfuUfuUfguuGfaAfgUfaGfasAfsuSEQ-ID-NO-1634

AD-52728.1	A-108887.1	UfuUfaGfaAfgAfGfCfaAfcUfaAfcUfaAfSEQ-ID-NO-1454	A-108447.2	uUfaGfuUfaGfuUfgcuCfuUfcUfaAfafUfaSEQ-ID-NO-1635
AD-52729.1	A-108895.1	AfaAfaCfaAfgAfUfAfaUfaGfcAfuCfaAfSEQ-ID-NO-1455	A-108463.2	uUfgAfuGfcUfaUfuauCfuUfgUfuUfusUfscSEQ-ID-NO-1636
AD-52730.1	A-108903.1	AfgCfaUfaGfuCfaAfAfaUfaAfaAfgAfaAfSEQ-ID-NO-1456	A-108479.2	uUfuCfuUfuUfaUfuugAfcUfaUfgCfusGfsuSEQ-ID-NO-1637
AD-52731.1	A-108958.1	AfgAfcCfaAfgCfaAfcUfcUfaAfuUfSEQ-ID-NO-1457	A-108495.2	aAfcUfuGfaGfaGfuugCfuGfgGfuCfusGfsaSEQ-ID-NO-1638
AD-52732.1	A-108966.1	AfgUfcCfaUfgGfAfCfaUfuAfaUfuCfaAfSEQ-ID-NO-1458	A-108511.2	uUfgAfaUfuAfaUfgucCfaUfgGfaCfusAfsaSEQ-ID-NO-1639
AD-52733.1	A-108974.1	GfaUfgGfaUfcAfCfaAfaAfaCfuUfcAfaUfSEQ-ID-NO-1459	A-108527.2	aUfuGfaAfgUfuUfuguGfaUfcCfaUfcsUfsaSEQ-ID-NO-1640
AD-52734.1	A-108982.1	CfuAfgAfgAfaGfAfUfaUfaCfuCfcAfuAfSEQ-ID-NO-1460	A-108543.2	uAfuGfgAfgUfaUfaucUfuCfuCfuAfgsGfscSEQ-ID-NO-1641
AD-52735.1	A-108990.1	AfaAfgAfcAfaCfaAfaCfaUfuAfuAfuUfSEQ-ID-NO-1461	A-108559.2	aAfuAfuAfaUfgUfuugUfuGfuCfuUfusCfscSEQ-ID-NO-1642
AD-52736.1	A-108998.1	CfaUfuAfuAfuUfGfAfaUfaUfuCfuUfuUfSEQ-ID-NO-1462	A-108575.2	aAfaAfgAfaUfaUfucaAfuAfuAfaUfcsUfsuSEQ-ID-NO-1643
AD-52737.1	A-108959.1	GfaCfcCfaGfcAfAfCfuCfuCfaAfgUfuUfSEQ-ID-NO-1463	A-108497.2	aAfaCfuUfgAfgAfguuGfcUfgGfgUfcsUfsgSEQ-ID-NO-1644
AD-52739.1	A-108975.1	GfgAfuCfaCfaAfAfAfcUfuCfaAfuGfaAfSEQ-ID-NO-1464	A-108529.2	uUfcAfuUfgAfaGfuuuUfgUfgAfuCfcsAfsuSEQ-ID-NO-1645
AD-52740.1	A-108983.1	GfaAfgAfuAfuAfcUfcCfaUfaGfuGfaAfSEQ-ID-NO-1465	A-108545.2	uUfcAfcUfaUfgGfaguAfuAfuCfuUfcsUfscSEQ-ID-NO-1646
AD-52741.1	A-108991.1	GfaCfaAfcAfaAfCfaUfaUfaUfuGfaAfSEQ-ID-NO-1466	A-108561.2	uUfcAfaUfaUfaAfuguUfuGfuUfgUfcsUfsuSEQ-ID-NO-1647
AD-52742.1	A-108999.1	GfgGfaAfaUfcAfCfGfaAfaCfcAfaCfuAfSEQ-ID-NO-1467	A-108577.2	uAfgUfuGfgUfuUfcguGfaUfuUfcCfcsAfsaSEQ-ID-NO-1648
AD-52743.1	A-108960.1	AfcCfcAfgCfaAfCfuUfcUfaGfuUfuUfSEQ-ID-NO-1468	A-108499.2	aAfaAfcUfuGfaGfaguUfgCfuGfgGfusCfsuSEQ-ID-NO-1649
AD-52744.1	A-108968.1	GfgAfcAfuUfaAfuUfcAfaCfaUfcGfaAfSEQ-ID-NO-1469	A-108515.2	uUfcGfaUfgUfuGfaauUfaAfuGfuCfcsAfsuSEQ-ID-NO-1650
AD-52745.1	A-108976.1	GfaUfcAfcAfaAfAfCfuUfcAfaUfgAfaAfSEQ-ID-NO-1470	A-108531.2	uUfuCfaUfuGfaAfguuUfuGfuGfaUfcsCfsaSEQ-ID-NO-1651
AD-52746.1	A-108984.1	AfcUfcCfaUfaGfUfGfaAfgCfaAfuCfuAfSEQ-ID-NO-1471	A-108547.2	uAfgAfuUfgCfuUfcacUfaUfgGfaGfusAfsuSEQ-ID-NO-1652
AD-52747.1	A-108992.1	AfcAfaCfaAfaCfaUfuAfuAfuUfgAfaUfSEQ-ID-NO-1472	A-108563.2	aUfuCfaAfuAfaAfaugUfuUfgUfuGfusCfsuSEQ-ID-NO-1653
AD-52748.1	A-109000.1	GfgAfaAfuCfaCfGfAfaAfcCfaAfcUfaUfSEQ-ID-NO-1473	A-108579.2	aUfaGfuUfgGfuUfucgUfgAfuUfuCfcsCfsaSEQ-ID-NO-1654

AD-52749.1	A-108961.1	CfcCfaGfcAfaCfUfCfuCfaAfgUfuUfuUfSEQ-ID-NO-1474	A-108501.2	aAfaAfaCfuUfgAfgagUfuGfcUfgGfgsUfscSEQ-ID-NO-1655
AD-52750.1	A-108969.1	GfaCfaUfuAfaUfUfCfaAfcAfuCfGfaUfSEQ-ID-NO-1475	A-108517.2	aUfuCfGfaUfuUfgaaUfuAfaUfgUfcsCfsaSEQ-ID-NO-1656
AD-52751.1	A-108977.1	AfaCfGfGfgAfgAfaCfuAfcAfaAfuAfSEQ-ID-NO-1476	A-108533.2	uAfuUfuGfuAfgUfucuCfcCfaCfGfUfusUfscSEQ-ID-NO-1657
AD-52752.1	A-108985.1	CfuCfcAfuAfgUfGfAfaGfcAfaUfcUfaAfSEQ-ID-NO-1477	A-108549.2	uUfaGfaUfuGfcUfucaCfuAfuGfgAfgsUfsaSEQ-ID-NO-1658
AD-52753.1	A-108993.1	CfaAfcAfaAfcAfUfUfaUfaUfuGfaAfuAfSEQ-ID-NO-1478	A-108565.2	uAfuUfcAfaUfaUfaauGfuUfuGfuUfgsUfscSEQ-ID-NO-1659
AD-52754.1	A-109001.1	GfaAfaUfcAfcGfAfaCfaCfaCfuAfuAfSEQ-ID-NO-1479	A-108581.2	uAfuAfgUfuGfgUfuucGfuGfaUfuUfcsCfscSEQ-ID-NO-1660
AD-52755.1	A-108962.1	CfuCfuCfaAfgUfUfUfuUfcAfuGfuCfuAfSEQ-ID-NO-1480	A-108503.2	uAfgAfcAfuGfaAfaaaCfuUfgAfgAfgsUfsuSEQ-ID-NO-1661
AD-52756.1	A-108970.1	AfcAfuUfaAfuUfCfAfaCfaUfcGfaAfuAfSEQ-ID-NO-1481	A-108519.2	uAfuUfcGfaUfgUfugaAfuUfaAfuGfusCfscSEQ-ID-NO-1662
AD-52757.1	A-108978.1	GfgGfaGfaAfcUfAfCfaAfaUfaUfgGfuUfSEQ-ID-NO-1482	A-108535.2	aAfcCfaUfaUfuUfguaGfuUfcUfcCfcsAfsaSEQ-ID-NO-1663
AD-52758.1	A-108986.1	UfcCfaUfaGfuGfAfaAfgCfaAfuCfuAfuUfSEQ-ID-NO-1483	A-108551.2	aUfuAfgAfuUfgCfuucAfcUfaUfgGfasGfsuSEQ-ID-NO-1664
AD-52759.1	A-108994.1	AfaCfaAfaCfaUfUfAfuAfuUfgAfaUfaUfSEQ-ID-NO-1484	A-108567.2	aUfaUfuCfaAfuAfuuaUfgUfuUfgUfusGfsuSEQ-ID-NO-1665
AD-52760.1	A-109002.1	UfgGfcAfaUfgUfCfCfcCfaAfuGfcAfuUfSEQ-ID-NO-1485	A-108583.2	aUfuGfcAfuUfgGfggaCfaUfuGfcCfasGfsuSEQ-ID-NO-1666
AD-52761.1	A-108963.1	UfcAfgGfuAfgUfCfCfaUfgGfaCfaUfuAfSEQ-ID-NO-1486	A-108505.2	uAfaUfgUfcCfaUfggaCfuAfcCfuGfasUfsaSEQ-ID-NO-1667
AD-52762.1	A-108971.1	UfuAfaUfuCfaAfcCfaCfGfaUfaGfaUfSEQ-ID-NO-1487	A-108521.2	aUfcUfaUfuCfGafuguUfgAfaUfuAfasUfsgSEQ-ID-NO-1668
AD-52763.1	A-108979.1	GfgAfgAfaCfuAfcAfaAfuAfuGfgUfuUfSEQ-ID-NO-1488	A-108537.2	aAfaCfcAfuAfuUfuguAfgUfuCfuCfcsCfsaSEQ-ID-NO-1669
AD-52764.1	A-108987.1	CfcAfuAfgUfgAfAfgCfaUfcUfaAfuUfSEQ-ID-NO-1489	A-108553.2	aAfuUfaGfaUfuGfcuuCfaCfuAfuGfgsAfsaSEQ-ID-NO-1670
AD-52765.1	A-108995.1	AfcAfaAfcAfuUfAfUfaUfuGfaAfuAfuUfSEQ-ID-NO-1490	A-108569.2	aAfuAfuUfcAfaUfaaaAfuGfuUfuGfusUfsgSEQ-ID-NO-1671
AD-52766.1	A-109003.1	AfaUfgCfaAfuCfCfGfGfaAfaAfcAfaAfSEQ-ID-NO-1491	A-108585.2	uUfuGfuUfuUfcCfgggAfuUfgCfaUfusGfsgSEQ-ID-NO-1672
AD-52767.1	A-108964.1	CfaGfgUfaGfuCfCfAfuGfgAfcAfuUfaAfSEQ-ID-NO-1492	A-108507.2	uUfaAfuGfuCfcAfuggAfcUfaCfcUfgsAfsuSEQ-ID-NO-1673
AD-52768.1	A-108972.1	UfuCfaAfcAfuCfGfAfaUfaGfaUfgGfaUfSEQ-ID-NO-1493	A-108523.2	aUfcCfaUfcUfaUfucgAfuGfuUfgAfasUfsuSEQ-ID-NO-1674

AD-52769.1	A-108980.1	GfuUfgGfgCfcUfAfGfaGfaAfgAfuAfuAfSEQ-ID-NO-1494	A-108539.2	uAfuAfuCfuUfcUfcuaGfgCfcCfaAfcCfsaSEQ-ID-NO-1675
AD-52770.1	A-108988.1	CfaUfaGfuGfaAfGfCfaAfuCfuAfaUfuAfSEQ-ID-NO-1495	A-108555.2	uAfaUfuAfgAfuUfgcuUfcAfcUfaUfgsGfsaSEQ-ID-NO-1676
AD-52771.1	A-108996.1	AfaCfaUfuAfuAfUfUfgAfaUfaUfuCfuUfSEQ-ID-NO-1496	A-108571.2	aAfgAfaUfaUfuCfaauAfuAfaUfgUfusUfsgSEQ-ID-NO-1677
AD-52772.1	A-109004.1	GfcAfaUfcCfcGfGfAfaAfaCfaAfaGfaUfSEQ-ID-NO-1497	A-108587.2	aUfcUfuUfgUfuUfuccGfgGfaUfuGfcsAfsuSEQ-ID-NO-1678
AD-52773.1	A-108965.1	GfgUfaGfuCfcAfUfGfgAfcAfuUfaAfuUfSEQ-ID-NO-1498	A-108509.2	aAfuUfaAfuGfuCfcauGfgAfcUfaCfcsUfsgSEQ-ID-NO-1679
AD-52774.1	A-108973.1	AfuCfGfaUfaGfAfUfgGfaUfcAfcAfaAfSEQ-ID-NO-1499	A-108525.2	uUfuGfuGfaUfcCfaucUfaUfuCfGafusGfsuSEQ-ID-NO-1680
AD-52775.1	A-108981.1	CfcUfaGfaGfaAfGfAfuAfuAfcUfcCfaUfSEQ-ID-NO-1500	A-108541.2	aUfgGfaGfuAfuAfucuUfcUfcUfaGfgsCfscSEQ-ID-NO-1681
AD-52776.1	A-108989.1	GfuUfgGfaAfgAfCfUfgGfaAfaGfaCfaAfSEQ-ID-NO-1501	A-108557.2	uUfgUfcUfuUfcCfaguCfuUfcCfaAfcUfscSEQ-ID-NO-1682
AD-52777.1	A-108997.1	AfcAfuUfaUfaUfUfGfaAfuAfuUfcUfuUfSEQ-ID-NO-1502	A-108573.2	aAfaGfaAfuAfuUfcaaUfaUfaAfuGfusUfsuSEQ-ID-NO-1683
AD-52778.1	A-109005.1	CfaAfuCfcCfGfAfAfaAfcAfaAfgAfuUfSEQ-ID-NO-1503	A-108589.2	aAfuCfuUfuGfuUfuucCfGfgAfuUfgsCfsaSEQ-ID-NO-1684
AD-52779.1	A-109013.1	CfuAfcUfuGfgGfAfUfcAfcAfaAfgCfaAfSEQ-ID-NO-1504	A-108605.2	uUfgCfuUfuGfuGfaucCfcAfaGfuAfgsAfsaSEQ-ID-NO-1685
AD-52780.1	A-109021.1	AfcAfaCfcUfaAfAfUfgGfuAfaAfuAfuAfSEQ-ID-NO-1505	A-108621.2	uAfuAfuUfuAfcCfaauUfaGfgUfuGfusUfsuSEQ-ID-NO-1686
AD-52781.1	A-109029.1	AfuCfcAfuCfcAfAfCfaGfaUfuCfaGfaAfSEQ-ID-NO-1506	A-108637.2	uUfcUfgAfaUfcUfguuGfgAfuGfgAfusCfsaSEQ-ID-NO-1687
AD-52782.1	A-109037.1	AfaCfuGfaGfgCfAfAfaUfuUfaAfaAfgAfSEQ-ID-NO-1507	A-108653.2	uCfuUfuUfaAfaUfuugCfcUfcAfgUfusCfsaSEQ-ID-NO-1688
AD-52783.1	A-109045.1	AfgAfgUfaUfgUfGfUfaAfaAfaUfcUfgUfSEQ-ID-NO-1508	A-108669.2	aCfaGfaUfuUfuUfacaCfaUfaCfuCfusGfsuSEQ-ID-NO-1689
AD-52784.1	A-109006.1	AfaUfcCfcGfgAfAfAfaCfaAfaGfaUfuUfSEQ-ID-NO-1509	A-108591.2	aAfaUfcUfuUfgUfuuuCfcGfgGfaUfusGfscSEQ-ID-NO-1690
AD-52785.1	A-109014.1	UfaCfuUfgGfgAfUfCfaCfaAfaGfcAfaAfSEQ-ID-NO-1510	A-108607.2	uUfuGfcUfuUfgUfgauCfcCfaAfgUfasGfsaSEQ-ID-NO-1691
AD-52786.1	A-109022.1	CfaAfcCfuAfaAfUfGfgUfaAfaUfaUfaAfSEQ-ID-NO-1511	A-108623.2	uUfaUfaUfuUfaCfcauUfuAfgGfuUfgsUfsuSEQ-ID-NO-1692
AD-52787.1	A-109030.1	UfuGfaAfuGfaAfcUfGfgAfgGfcAfaAfuUfSEQ-ID-NO-1512	A-108639.2	aAfuUfuGfcCfuCfaguUfcAfuUfcAfasAfsuSEQ-ID-NO-1693
AD-52788.1	A-109038.1	AfcUfgAfgGfcAfAfAfuUfuAfaAfaGfgAfSEQ-ID-NO-1513	A-108655.2	uCfcUfuUfuAfaAfuuuGfcCfuCfaGfusUfscSEQ-ID-NO-1694

AD-52789.1	A-109046.1	GfaGfuAfuGfuGfUfAfaAfaAfuCfuGfuAfSEQ-ID-NO-1514	A-108671.2	uAfcAfgAfuUfuUfuacAfcAfuAfcUfcsUfsgSEQ-ID-NO-1695
AD-52791.1	A-109015.1	AfcUfuGfgGfaUfCfAfaAfgCfaAfaAfSEQ-ID-NO-1515	A-108609.2	uUfuUfgCfuUfuGfugaUfcCfcAfaGfusAfsGSEQ-ID-NO-1696
AD-52792.1	A-109023.1	AfuGfgUfaAfaUfAfUfaAfcAfaAfcCfaAfSEQ-ID-NO-1516	A-108625.2	uUfgGfuUfuGfuUfaUaUfuUfaCfcAfusUfsuSEQ-ID-NO-1697
AD-52793.1	A-109031.1	UfgAfaUfgAfaCfUfGfaGfgCfaAfaUfuUfSEQ-ID-NO-1517	A-108641.2	aAfaUfuUfgCfcUfcagUfuCfaUfuCfasAfsaSEQ-ID-NO-1698
AD-52794.1	A-109039.1	CfuGfaGfgCfaAfAfUfuUfaAfaAfgGfcAfSEQ-ID-NO-1518	A-108657.2	uGfcCfuUfuUfaAfaUuUfgCfcUfcAfgsUfsuSEQ-ID-NO-1699
AD-52795.1	A-109047.1	AfgUfaUfgUfgUfAfAfaAfaUfcUfgUfaAfSEQ-ID-NO-1519	A-108673.2	uUfaCfaGfaUfuUfuuaCfaCfaUfaCfusCfsuSEQ-ID-NO-1700
AD-52796.1	A-109008.1	GfaAfaAfcAfaAfGfAfuUfuGfgUfgUfuUfSEQ-ID-NO-1520	A-108595.2	aAfaCfaCfcAfaAfucuUfuGfuUfuUfcsCfsgSEQ-ID-NO-1701
AD-52797.1	A-109016.1	AfgUfgUfgGfaGfAfAfaAfcAfaCfcUfaAfSEQ-ID-NO-1521	A-108611.2	uUfaGfgUfuGfuUfuucUfcCfaCfaCfusCfsaSEQ-ID-NO-1702
AD-52798.1	A-109024.1	GfuCfuCfaAfaAfUfGfgAfaGfgUfuAfuAfSEQ-ID-NO-1522	A-108627.2	uAfuAfaCfcUfuCfcaUfuUfgAfgAfcUfsuSEQ-ID-NO-1703
AD-52799.1	A-109032.1	GfaAfuGfaAfcUfGfAfgGfcAfaAfuUfuAfSEQ-ID-NO-1523	A-108643.2	uAfaAfuUfuGfcCfucaGfuUfcAfuUfcsAfsaSEQ-ID-NO-1704
AD-52800.1	A-109040.1	UfgAfgGfcAfaAfUfUfuAfaAfaGfgCfaAfSEQ-ID-NO-1524	A-108659.2	uUfgCfcUfuUfuAfaUuUfuGfcCfuCfasGfsuSEQ-ID-NO-1705
AD-52801.1	A-109048.1	GfuAfuGfuGfuAfAfAfaAfuCfuGfuAfaUfSEQ-ID-NO-1525	A-108675.2	aUfuAfcAfgAfuUfuuuAfcAfaAfcUfscSEQ-ID-NO-1706
AD-52802.1	A-109009.1	AfaAfaCfaAfaGfAfUfuUfgGfuGfuUfuUfSEQ-ID-NO-1526	A-108597.2	aAfaAfcAfcCfaAfaucUfuUfgUfuUfusCfscSEQ-ID-NO-1707
AD-52803.1	A-109017.1	GfuGfuGfgAfgAfAfAfaCfaAfcCfuAfaAfSEQ-ID-NO-1527	A-108613.2	uUfuAfgGfuUfgUfuuuCfuCfcAfcAfcUfscSEQ-ID-NO-1708
AD-52804.1	A-109025.1	AfuGfgAfaGfgUfUfAfuAfcUfcUfaUfaAfSEQ-ID-NO-1528	A-108629.2	uUfaUfaGfaGfuAfuuaCfcUfuCfcAfusUfsuSEQ-ID-NO-1709
AD-52805.1	A-109033.1	AfaUfgAfaCfuGfAfGfgCfaAfaUfuUfaAfSEQ-ID-NO-1529	A-108645.2	uUfaAfaUfuUfgCfcucAfgUfuCfaUfusCfsaSEQ-ID-NO-1710
AD-52806.1	A-109041.1	GfaGfgCfaAfaUfUfUfaAfaAfgGfcAfaUfSEQ-ID-NO-1530	A-108661.2	aUfuGfcCfuUfuUfaaaUfuUfgCfcUfcsAfsGSEQ-ID-NO-1711
AD-52807.1	A-109049.1	UfaUfgUfgUfaAfAfAfaUfcUfgUfaAfuAfSEQ-ID-NO-1531	A-108677.2	uAfuUfaCfaGfaUfuuuUfaCfaCfaUfasCfsuSEQ-ID-NO-1712
AD-52808.1	A-109010.1	AfcAfaAfgAfuUfUfGfgUfgUfuUfuCfuAfSEQ-ID-NO-1532	A-108599.2	uAfgAfaAfaCfaCfaaAfuCfuUfuGfusUfsuSEQ-ID-NO-1713
AD-52809.1	A-109018.1	UfgUfgGfaGfaAfAfAfcAfaCfcUfaAfaUfSEQ-ID-NO-1533	A-108615.2	aUfuUfaGfgUfuGfuuuUfcUfcCfaCfasCfsuSEQ-ID-NO-1714

AD-52810.1	A-109026.1	UfgGfaAfgGfuUfAfUfaCfuCfuAfuAfaAfSEQ-ID-NO-1534	A-108631.2	uUfuAfuAfgAfgUfaaaAfcCfuUfcCfasUfsuSEQ-ID-NO-1715
AD-52811.1	A-109034.1	AfuGfaAfcUfgAfgGfcAfaAfuUfuAfaAfSEQ-ID-NO-1535	A-108647.2	uUfuAfaAfuUfuGfccuCfaGfuUfcAfusUfscSEQ-ID-NO-1716
AD-52812.1	A-109042.1	AfgGfcAfaAfuUfUfaAfaGfgCfaAfuAfSEQ-ID-NO-1536	A-108663.2	uAfuUfgCfcUfuUfuuaAfuUfuGfcCfusCfsaSEQ-ID-NO-1717
AD-52813.1	A-109011.1	AfaGfaUfuUfgGfUfGfuUfuUfcUfaCfuUfSEQ-ID-NO-1537	A-108601.2	aAfgUfaGfaAfaAfcacCfaAfaUfcUfusUfsgSEQ-ID-NO-1718
AD-52814.1	A-109019.1	AfaAfcAfaCfcUfAfAfaUfgGfuAfaAfuAfSEQ-ID-NO-1538	A-108617.2	uAfuUfuAfcCfaUfuuaGfgUfuGfuUfusUfscSEQ-ID-NO-1719
AD-52815.1	A-109027.1	AfuAfcUfcUfaUfAfAfaAfuCfaAfcCfaAfSEQ-ID-NO-1539	A-108633.2	uUfgGfuUfgAfuUfuuaUfaGfaGfuAfusAfsaSEQ-ID-NO-1720
AD-52816.1	A-109035.1	UfgAfaCfuGfaGfGfcAfaAfuUfaAfaAfSEQ-ID-NO-1540	A-108649.2	uUfuUfaAfaUfuUfgccUfcAfgUfuCfasUfsuSEQ-ID-NO-1721
AD-52817.1	A-109043.1	GfgCfaAfaUfuUfAfAfaAfgGfcAfaUfaAfSEQ-ID-NO-1541	A-108665.2	uUfaUfuGfcCfuUfuuaAfaUfuUfgCfcsUfscSEQ-ID-NO-1722
AD-52818.1	A-109012.1	UfuUfuCfuAfcUfUfGfgGfaUfcAfcAfaAfSEQ-ID-NO-1542	A-108603.2	uUfuGfuGfaUfcCfcaaGfuAfgAfaAfasCfsaSEQ-ID-NO-1723
AD-52819.1	A-109020.1	AfaCfaAfcCfuAfAfAfuGfgUfaAfaUfaUfSEQ-ID-NO-1543	A-108619.2	aUfaUfuUfaCfcAfuuuAfgGfuUfgUfusUfsuSEQ-ID-NO-1724
AD-52820.1	A-109028.1	UfaCfuCfuAfuAfAfAfaUfcAfaCfcAfaAfSEQ-ID-NO-1544	A-108635.2	uUfuGfgUfuGfaUfuuuAfuAfgAfgUfasUfsaSEQ-ID-NO-1725
AD-52821.1	A-109036.1	GfaAfcUfgAfgGfcAfaAfuUfuAfaAfaAfSEQ-ID-NO-1545	A-108651.2	uUfuUfuAfaAfuUfugcCfuCfaGfuUfcsAfsuSEQ-ID-NO-1726
AD-52822.1	A-109044.1	CfaGfaGfuAfuGfUfGfuAfaAfaAfuCfuUfSEQ-ID-NO-1546	A-108667.2	aAfgAfuUfuUfuAfcacAfuAfcUfcUfgsUfsgSEQ-ID-NO-1727

We claim:

1. A double-stranded ribonucleic acid (dsRNA) agent for inhibiting expression of Angiopoietin-like 3 (ANGPTL3), ~~wherein said dsRNA comprises~~comprising a sense strand and an antisense strand,

~~wherein said sense strand comprises at least 15 contiguous nucleotides differing by no more than 3 nucleotides from the nucleotide sequence of SEQ ID NO:1 and said the~~ antisense strand comprises at least ~~15-17~~ contiguous nucleotides ~~which differ~~ differing by no more than ~~3~~three nucleotides from the ~~complement of nucleotides 244-307 of SEQ ID NO:1, nucleotide sequence of SEQ ID NO:5.~~

~~wherein all of the nucleotides of the sense strand and all of the nucleotides of the antisense strand are modified nucleotides,~~

~~wherein at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a 2'-fluoro modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, an abasic nucleotide, and a 2'-amino modified nucleotide, and~~

~~wherein a ligand comprising an N-acetylgalactosamine (GalNAc) derivative is conjugated to at least one strand of the dsRNA agent.~~

2. A double-stranded ribonucleic acid (dsRNA) agent for inhibiting expression of Angiopoietin-like 3 (ANGPTL3), wherein the dsRNA agent comprises a sense strand and an antisense strand,

wherein the antisense strand comprises at least 17 contiguous nucleotides which differ by no more than three nucleotides from the complement of nucleotides 256-306 of SEQ ID NO:1,

wherein all of the nucleotides of the sense strand and all of the nucleotides of the antisense strand are modified nucleotides,

wherein at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a 2'-fluoro modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, an abasic nucleotide, and a 2'-amino modified nucleotide, and

wherein a ligand comprising an N-acetylgalactosamine (GalNAc) derivative is conjugated to at least one strand of the dsRNA agent.

3. A double-stranded ribonucleic acid (dsRNA) agent for inhibiting expression of Angiopoietin-like 3 (ANGPTL3), wherein the dsRNA agent comprises a sense strand and an antisense strand,

wherein the antisense strand comprises at least 17 contiguous nucleotides which differ by no more than three nucleotides from the complement of nucleotides 266-299 of SEQ ID NO:1,

wherein all of the nucleotides of the sense strand and all of the nucleotides of the antisense strand are modified nucleotides,

wherein at least one of the modified nucleotides is selected from the group consisting of a 2'-O-methyl modified nucleotide, a 2'-fluoro modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, an abasic nucleotide, and a 2'-amino modified nucleotide, and

wherein a ligand comprising an N-acetylgalactosamine (GalNAc) derivative is conjugated to at least one strand of the dsRNA agent.

4. The dsRNA agent of claim 1, wherein each strand is independently 19-25 nucleotides in length.

5. The dsRNA agent of claim 1, wherein the dsRNA agent comprises at least one phosphorothioate or methylphosphonate internucleotide linkage.

6. The dsRNA of claim 1, wherein the GalNAc (N-acetylgalactosamine) derivative is attached through a bivalent or trivalent branched linker.

7. The dsRNA agent of claim 1, wherein the sense and antisense strands comprise nucleotide sequences selected from the group consisting of

5' - AUCAGUCUUUUUAUGAUCUAU -3' (SEQ ID NO: 312) and

5' - AUAGAUCAUAAAAAGACUGAUC -3' (SEQ ID NO: 497);

5' - GAUCAGUCUUUUUAUGAUCUA -3' (SEQ ID NO: 403) and
5' - UAGAUCAUAAAAAGACUGAUCAA -3' (SEQ ID NO: 588);
5' - AUUUGAUCAGUCUUUUUAU -3' (SEQ ID NO: 61) and
5' - AUAAAAAGACUGAUCAAU -3' (SEQ ID NO: 123);
5' - UAUUUGAUCAGUCUUUUUA -3' (SEQ ID NO: 16) and
5' - UAAAAAGACUGAUCAAUA -3' (SEQ ID NO: 78);
5' - CAUAUUUGAUCAGUCUUUUUA -3' (SEQ ID NO: 387) and
5' - UAAAAAGACUGAUCAAUAUGUU -3' (SEQ ID NO: 572);
5' - ACAUAUUUGAUCAGUCUUUUU -3' (SEQ ID NO: 287) and
5' - AAAAAGACUGAUCAAUAUGUUG -3' (SEQ ID NO: 472);
5' - ACAUAUUUGAUCAGUCUUUU -3' (SEQ ID NO: 303) and
5' - AAAAGACUGAUCAAUAUGUUGA -3' (SEQ ID NO: 488);
5' - ACAUAUUUGAUCAGUCUUU -3' (SEQ ID NO: 39) and
5' - AAAGACUGAUCAAUAUGU -3' (SEQ ID NO: 101);
5' - CAACAUAUUUGAUCAGUCUUU -3' (SEQ ID NO: 294) and
5' - AAAGACUGAUCAAUAUGUUGAG -3' (SEQ ID NO: 479);
5' - UCAACAUAUUUGAUCAGUCUU -3' (SEQ ID NO: 358) and
5' - AAGACUGAUCAAUAUGUUGAGU -3' (SEQ ID NO: 543);
5' - CAACAUAUUUGAUCAGUCU -3' (SEQ ID NO: 64) and
5' - AGACUGAUCAAUAUGUUG -3' (SEQ ID NO: 126);
5' - CAAAAACUCAACAUAUUUGAU -3' (SEQ ID NO: 321) and
5' - AUCAAAUAUGUUGAGUUUUUGAA -3' (SEQ ID NO: 506);
5' - UGACAUAUUUCAAAAACUCAA -3' (SEQ ID NO: 351) and
5' - UUGAGUUUUUGAAAUAUGUCAUU -3' (SEQ ID NO: 536);
5' - AAUUAUAUGACAUAUUUCAA -3' (SEQ ID NO: 352) and
5' - UUUGAAAUAUGUCAUUAUUUGG -3' (SEQ ID NO: 537);
5' - GGCCAAAUUAAUGACAUAUUU -3' (SEQ ID NO: 285) and
5' - AAUAUGUCAUUAUUUGGCCCU -3' (SEQ ID NO: 470); and
5' - GGGCCAAAUUAAUGACAUAUU -3' (SEQ ID NO: 417) and
5' - AAUAUGUCAUUAUUUGGCCCUU -3' (SEQ ID NO: 602) .

~~2. A double stranded ribonucleic acid (dsRNA) for inhibiting expression of ANGPTL3, wherein said dsRNA comprises a sense strand and an antisense strand, the antisense strand comprising a region of complementarity which comprises at least 15 contiguous nucleotides differing by no more than 3 nucleotides from any one of the antisense sequences listed in Tables 2, 3, 7, 8, 9 and 10.~~

~~3. The dsRNA of claim 2, wherein the sense and antisense strands comprise sequences selected from the group consisting of AD-52981.1, AD-53063.1, AD-53001.UAD-53015.1, AD-52986.1, AD-52953.1, AD-53024.1, AD-53033.1, AD-53030.1, AD-53080.1, AD-53073.1, AD-53132.1, AD-52983.1, AD-52954.1, AD-52961.1, AD-52994.1, AD-52970.1, AD-53075.1, AD-53147.1, AD-53077.1 of Tables 7 and 8.~~

~~4. The dsRNA of claim 1 or 2, wherein said dsRNA comprises at least one modified nucleotide.~~

~~5. The dsRNA of claim 4, wherein at least one of said modified nucleotides is selected from the group consisting of a 2' O-methyl modified nucleotide, a nucleotide comprising a 5'-phosphorothioate group, and a terminal nucleotide linked to a cholesteryl derivative or a dodecanoic acid bisdecylamide group.~~

~~6. The dsRNA of claim 4, wherein said modified nucleotide is selected from the group consisting of a 2'-deoxy-2' fluoro modified nucleotide, a 2'-deoxy modified nucleotide, a locked nucleotide, an abasic nucleotide, a 2' ammo modified nucleotide, a 2' alkyl modified nucleotide, a morpholino nucleotide, a phosphoramidate, and a non natural base comprising nucleotide.~~

~~7. The dsRNA of claim 2, wherein the region of complementarity is at least 17 nucleotides in length.~~

~~8. The dsRNA of claim 2, wherein the region of complementarity is between 19 and 21 nucleotides in length.~~

~~9. The dsRNA of claim 8, wherein the region of complementarity is 19 nucleotides in length.~~

~~10. The dsRNA of claim 1 or 2, wherein each strand is no more than 30 nucleotides in length.~~

~~11. The dsRNA of claim 1 or 2, wherein at least one strand comprises a 3' overhang of at least 1 nucleotide.~~

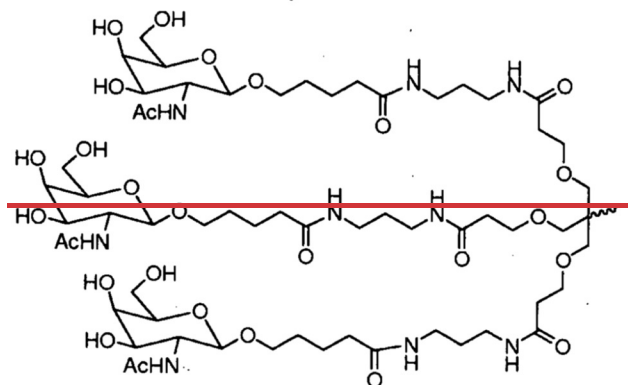
~~12. The dsRNA of claim 1 or 2, wherein at least one strand comprises a 3' overhang of at least 2 nucleotides.~~

~~13. The dsRNA of claim 1 or 2, further comprising a ligand.~~

~~14. The dsRNA of claim 13, wherein the ligand is conjugated to the 3' end of the sense strand of the dsRNA.~~

~~15. The dsRNA of claim 13, wherein the ligand is an N-acetylgalactosamine (GalNAc) derivative.~~

~~16. The dsRNA of claim 15, wherein the ligand is~~



~~17. The dsRNA of claim 2, wherein the region of complementarity consists of one of the antisense sequences of Tables 2, 3, 7, 8, 9 and 10.~~

~~18. The dsRNA of claim 1 or 2, wherein the dsRNA comprises a sense strand consisting of sense strand sequence selected from the sequence of Tables 2, 3, 9 and 10, and an antisense strand consisting of an antisense sequence selected from the sequences of Tables 2, 3, 7, 8, 9 and 10.~~

~~198.~~ A cell containing the dsRNA agent of claim 1 ~~or 2~~.

~~20. A vector encoding at least one strand of a dsRNA, wherein said dsRNA comprises a region of complementarity to at least a part of an mRNA encoding ANGPTL3, wherein said dsRNA is 30 base pairs or less in length, and wherein said dsRNA targets said mRNA for cleavage.~~

~~21. The vector of claim 20, wherein the region of complementarity is at least 15 nucleotides in length.~~

~~22. The vector of claim 20, wherein the region of complementarity is 19 to 21 nucleotides in length.~~

~~23. A cell comprising the vector of claim 20.~~

~~249.~~ A pharmaceutical composition for inhibiting expression of an ANGPTL3 gene, comprising the dsRNA agent of claim 1 ~~or 2 or the vector of claim 20~~.

~~10. The pharmaceutical composition of claim 9, wherein the dsRNA agent is present in a buffered solution.~~

~~25. The pharmaceutical composition of claim 24, further comprising a lipid formulation.~~

~~26. The pharmaceutical composition of claim 24, wherein the lipid formulation comprises a SNALP, or XTC.~~

~~27. The pharmaceutical composition of claim 24, wherein the lipid formulation comprises a MC3.~~

~~2811. An *in vitro* method of inhibiting ANGPTL3 expression in a cell, the method comprising:~~

- ~~(a) contacting the cell *in vitro* with the dsRNA agent of claim 1 ~~or 2 or the vector of claim 20~~; and~~
- ~~(b) maintaining the cell produced in step (a) for a time sufficient to obtain degradation of the mRNA transcript of an ANGPTL3 gene, thereby inhibiting expression of the ANGPTL3 gene in the cell.~~

~~29. The method of claim 28, wherein said cell is from a subject.~~

~~30. The method of claim 29, wherein the subject is a human.~~

~~3112. Use of the dsRNA agent of claim 1 in the manufacture of a medicament for treating a subject having a disorder that would benefit from reduction in ANGPTL3 expression, comprising that the dsRNA agent is to be administered to the subject~~~~The method of claim 30,~~
wherein the ~~human subject suffers from~~disorder is a disorder of lipid metabolism.

~~3213. The ~~method-use~~ of claim 3112, wherein the disorder ~~of lipid metabolism~~ is selected from the group consisting of hypertriglyceridemia, obesity, hyperlipidemia, atherosclerosis, diabetes, cardiovascular disease, and coronary artery disease ~~or hypertriglyceridemia~~.~~

~~14. The use of claim 12, further comprising that an additional therapeutic is to be administered to the subject.~~

~~15. The use of claim 14, wherein the additional therapeutic is a statin.~~

~~16. The use of claim 12, wherein the dsRNA agent is to be administered at a dose of 0.5 mg/kg to 50 mg/kg.~~

17. The use of claim 12, wherein the dsRNA agent that is to be administered to the subject causes a decrease in one or more serum lipid and/or a decrease in ANGPTL3 protein accumulation.

~~33. The method of any one of claims 28-32, wherein the ANGPTL3 expression is inhibited by at least about 30%.~~

~~34. The dsRNA of claim 1 or 2 or the vector of claim 20 for use in treating a subject having a disorder that would benefit from reduction in ANGPTL3 expression.~~

~~35. The dsRNA or the vector of claim 34, wherein the disorder is a disorder of lipid metabolism.~~

~~36. The dsRNA or the vector of claim 35, wherein the disorder of lipid metabolism is hyperlipidemia or hypertriglyceridemia.~~

~~37. The dsRNA or the vector of claim 34, wherein the dsRNA, when administered to a subject, causes a decrease in one or more serum lipid and/or a decrease in ANGPTL3 protein accumulation.~~

~~38. The dsRNA or the vector of claim 34, wherein the dsRNA is formulated for administration at a dose of about 0.01 mg/kg to about 10 mg/kg or about 5 mg/kg to about 50 mg/kg.~~

~~39. The dsRNA of claim 1 or 2 or the vector of claim 20 for use in inhibiting the expression of ANGPTL3 in a subject.~~

~~40. The dsRNA or the vector of claim 39, wherein the dsRNA is formulated for administration at a dose of about 0.01 mg/kg to about 10 mg/kg or about 5 mg/kg to about 50 mg/kg.~~