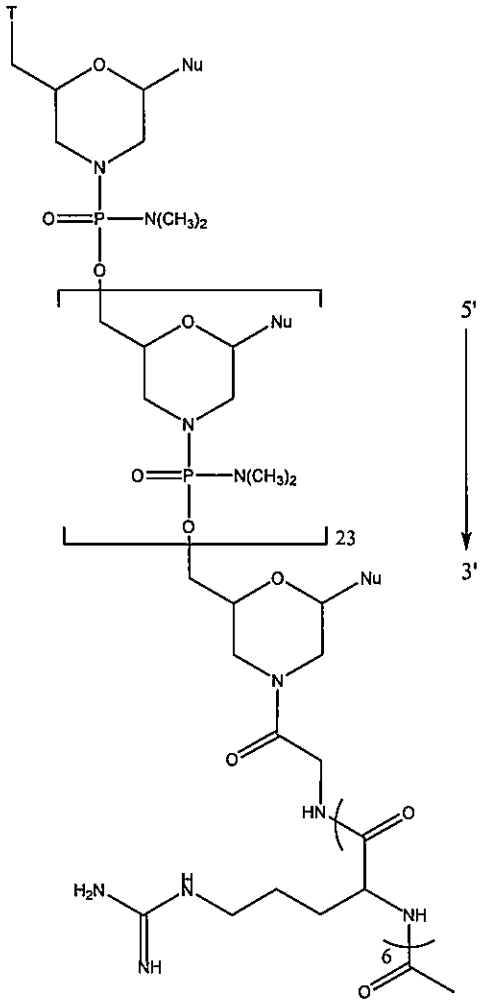
Claims

1. An antisense oligomer conjugate of Formula (I):

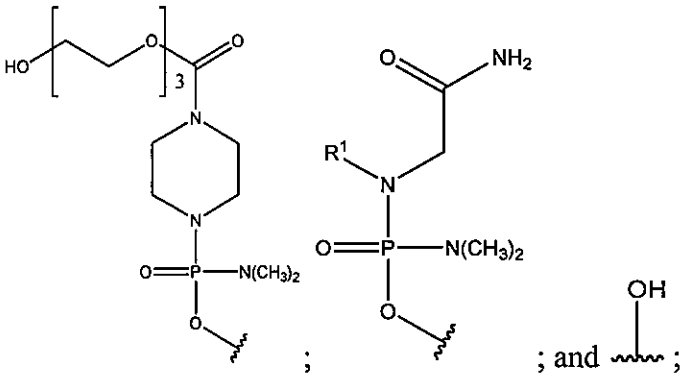


(I)

or a pharmaceutically acceptable salt thereof, wherein:

each Nu is a nucleobase which taken together form a targeting sequence; and

T is a moiety selected from:



; ; and ;

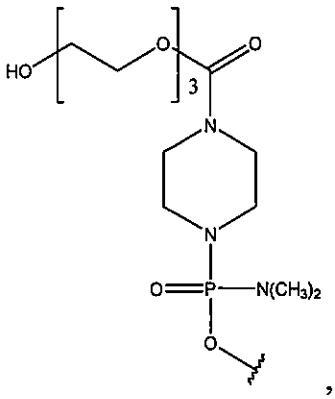
R^1 is C_1-C_6 alkyl;

wherein the targeting sequence is complementary to an exon 53 annealing site in the dystrophin pre-mRNA designated as H53A(+36+60).

2. The antisense oligomer conjugate of claim 1, or the pharmaceutically acceptable salt thereof, wherein each Nu is independently selected from cytosine (C), guanine (G), thymine (T), adenine (A), 5-methylcytosine (5mC), uracil (U), and hypoxanthine (I).

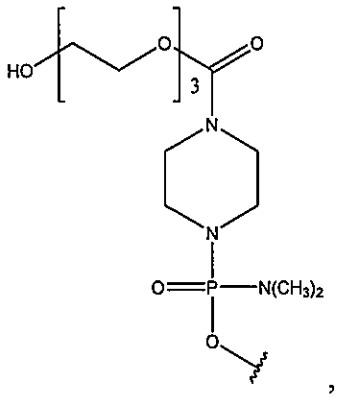
3. The antisense oligomer conjugate of claim 1, or the pharmaceutically acceptable salt thereof, wherein the targeting sequence is SEQ ID NO: 1 (5'-GTTGCCTCCGGTTCTGAAGGTGTTC-3'), wherein each thymine (T) is optionally uracil (U).

4. The antisense oligomer conjugate of claim 1, or the pharmaceutically acceptable salt thereof, wherein T is



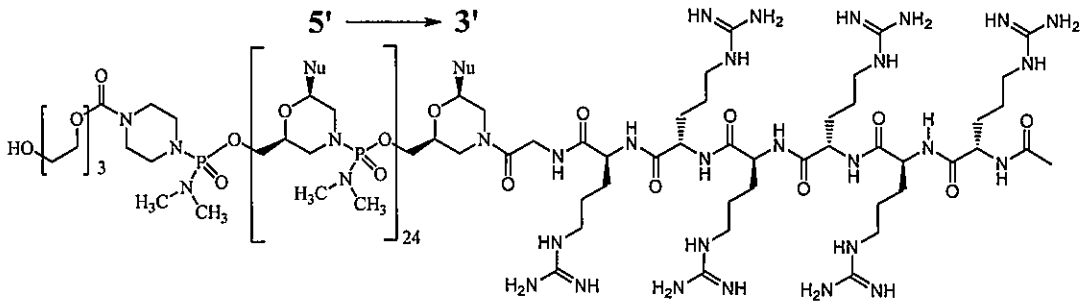
, and the targeting sequence is SEQ ID NO: 1 (5'-GTTGCCTCCGGTTCTGAAGGTGTTC-3'), wherein each thymine (T) is optionally uracil (U).

5. The antisense oligomer conjugate of claim 1, or the pharmaceutically acceptable salt thereof, wherein T is



, and the targeting sequence is SEQ ID NO: 1 (5'-GTTGCCTCCGGTTCTGAAGGTGTTC-3').

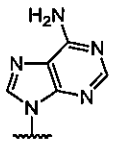
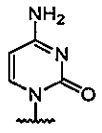
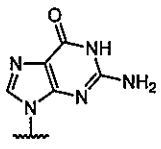
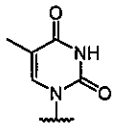
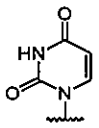
6. An antisense oligomer conjugate of Formula (II):

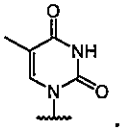


(II)

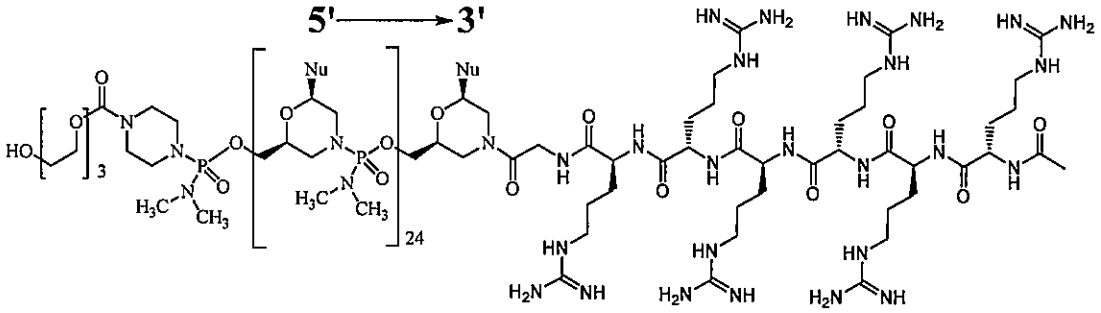
or a pharmaceutically acceptable salt thereof, wherein each Nu from 1 to 25 and 5' to 3' is:

Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu
1	G	6	C	11	G	16	G	21	X
2	X	7	X	12	X	17	A	22	G
3	X	8	C	13	X	18	A	23	X
4	G	9	C	14	C	19	G	24	X
5	C	10	G	15	X	20	G	25	C

and wherein A is , C is , G is , and each X is independently  or .

7. The antisense oligomer conjugate of claim 6, or the pharmaceutically acceptable salt thereof, wherein each X is .

8. The antisense oligomer conjugate of claim 6, or the pharmaceutically acceptable salt thereof, wherein the antisense oligomer is of Formula (IIA):

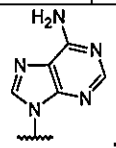
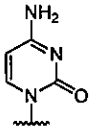
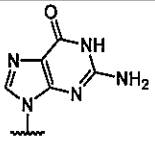
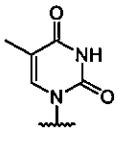
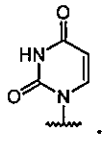


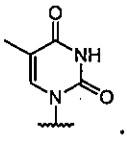
.6HCl

(IIA)

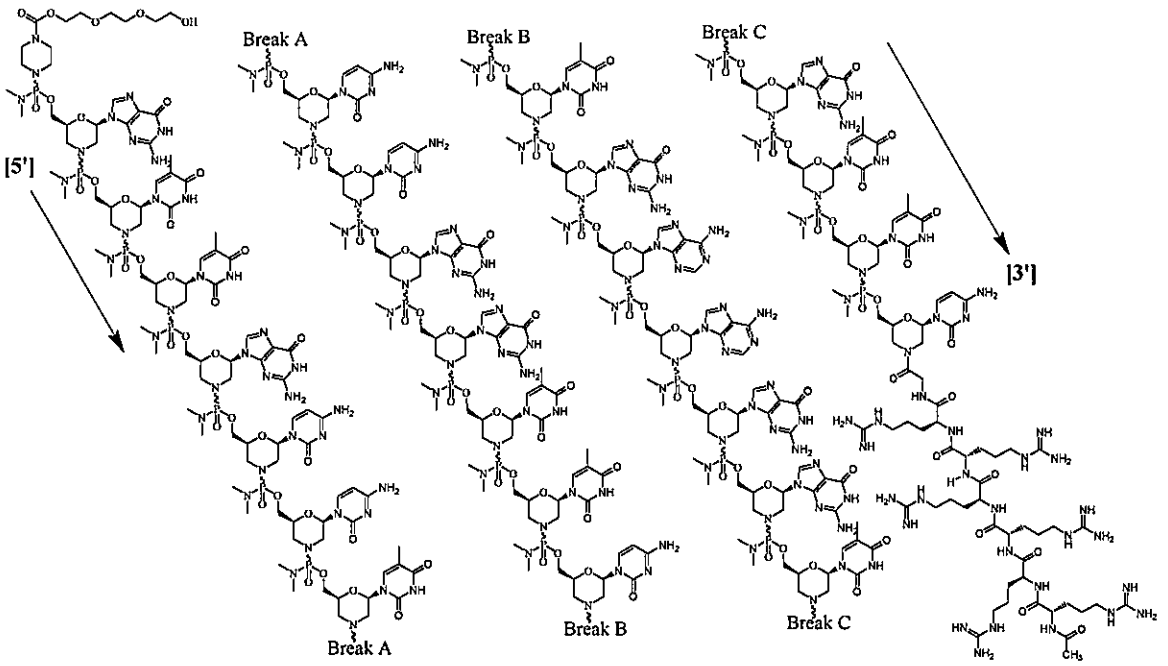
wherein each Nu from 1 to 25 and 5' to 3' is:

Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu	Position No. 5' to 3'	Nu
1	G	6	C	11	G	16	G	21	X
2	X	7	X	12	X	17	A	22	G
3	X	8	C	13	X	18	A	23	X
4	G	9	C	14	C	19	G	24	X
5	C	10	G	15	X	20	G	25	C

and wherein A is , C is , G is , and each X is independently  or .

9. The antisense oligomer conjugate of claim 8, or the pharmaceutically acceptable salt thereof, wherein each X is .

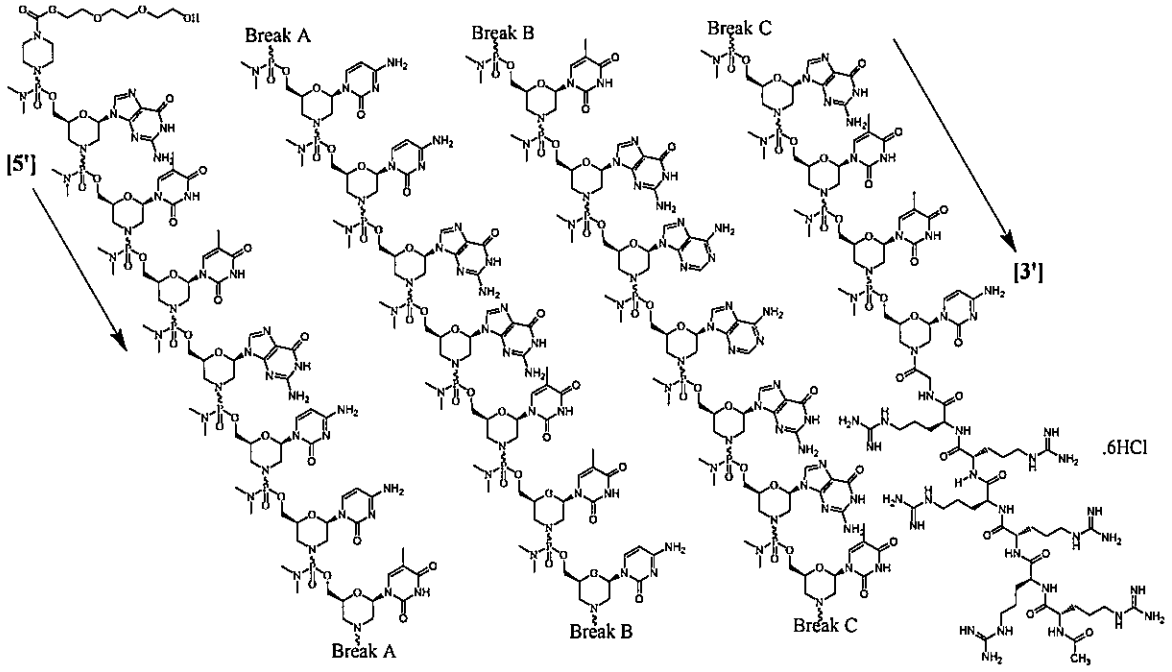
10. An antisense oligomer conjugate of Formula (IV):



(IV)

or a pharmaceutically acceptable salt thereof.

11. The antisense oligomer conjugate of claim 9, or the pharmaceutically acceptable salt thereof, wherein the antisense oligomer is of Formula (IVA):



(IVA).

12. A pharmaceutical composition, comprising an antisense oligomer conjugate of any one of claims 1 to 11, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

13. Use of the antisense oligomer conjugate of any one of claims 1 to 11, or the pharmaceutically acceptable salt thereof, in the manufacture of a medicament for the treatment of Duchenne muscular dystrophy (DMD) in a subject in need thereof, wherein the subject has a mutation of the dystrophin gene that is amenable to exon 53 skipping.

14. The use of claim 13, wherein the medicament is to be administered weekly.

15. The use of claim 13, wherein the medicament is to be administered biweekly.

16. The use of claim 13, wherein the medicament is to be administered every third week.

17. The use of claim 13, wherein the medicament is to be administered monthly.

18. Use of the antisense oligomer conjugate of any one of claims 1 to 11, or the pharmaceutically acceptable salt thereof, in the manufacture of a medicament for restoring an mRNA reading frame to induce dystrophin production in a subject having a mutation of the dystrophin gene that is amenable to exon 53 skipping.

19. The use of claim 18, wherein the medicament is to be administered weekly.

20. The use of claim 18, wherein the medicament is to be administered biweekly.

21. The use of claim 18, wherein the medicament is to be administered every third week.

22. The use of claim 18, wherein the medicament is to be administered monthly.

23. The use of any one of claims 18-22, wherein the medicament is to be administered at a dose of about 30 mg/kg.

24. The use of any one of claims 18-22, wherein the medicament is to be administered at a dose of about 40 mg/kg.

25. The use of any one of claims 18-22, wherein the medicament is to be administered at a dose of about 60 mg/kg.

26. The use of any one of claims 18-22, wherein the medicament is to be administered at a dose of about 80 mg/kg.

27. The use of any one of claims 18-22, wherein the medicament is to be administered at a dose of about 160 mg/kg.

28. Use of the pharmaceutical composition of claim 12 in the manufacture of a medicament for the treatment of Duchenne muscular dystrophy (DMD) in a subject in need thereof, wherein the subject has a mutation of the dystrophin gene that is amenable to exon 53 skipping.

29. Use of the pharmaceutical composition of claim 12 in the manufacture of a medicament for restoring an mRNA reading frame to induce dystrophin production in a subject having a mutation of the dystrophin gene that is amenable to exon 53 skipping.

30. Use of the pharmaceutical composition of claim 12 in the manufacture of a medicament for excluding exon 53 from dystrophin pre-mRNA during mRNA processing in a subject having a mutation of the dystrophin gene that is amenable to exon 53 skipping.

31. Use of the pharmaceutical composition of claim 12 in the manufacture of a medicament for binding exon 53 of dystrophin pre-mRNA in a subject having a mutation of the dystrophin gene that is amenable to exon 53 skipping.

32. The antisense oligomer conjugate of any one of claims 1 to 11, or the pharmaceutically acceptable salt thereof, for use as a medicament.