CLAIMS

1. An antisense oligomer which is selected from a group consisting of (a) to (c) below, or a pharmaceutically acceptable salt or hydrate thereof:

(a) an antisense oligomer comprising a nucleotide sequence of SEQ ID NO: 1 or 2;

(b) an antisense oligomer which consists of a nucleotide sequence having deletion, substitution, insertion and/or addition of 1 to 5 nucleotides in the nucleotide sequence of SEQ ID NO: 1 or 2, and has an activity to cause skipping of the 51st exon in the human dystrophin gene; and

(c) the antisense oligomer which has a nucleotide sequence having at least 80% identity with a nucleotide sequence of SEQ ID NO: 1 or 2 and has an activity to cause skipping of the 51st exon in the human dystrophin gene.

2. An antisense oligomer which is selected from a group consisting of (e) to (g) below, or a pharmaceutically acceptable salt or hydrate thereof:

(e) an antisense oligomer which consists of a nucleotide sequence of SEQ ID NO: 1 or 2;

(f) an antisense oligomer which consists of a nucleotide sequence having deletion, substitution, insertion and/or addition of 1 to 3 nucleotides in the nucleotide sequence of SEQ ID NO: 1 or 2, and has an activity to cause skipping of the 51st exon in the human dystrophin gene; and

(g) an antisense oligomer which consists of a nucleotide sequence having at least 80% identity with a nucleotide sequence of SEQ ID NO: 1 or 2 and has an activity to cause skipping of the 51st exon in the human dystrophin gene.

3. An antisense oligomer which is selected from a group consisting of (j) below, or a pharmaceutically acceptable salt or hydrate thereof:

(j) an antisense oligomer which has a nucleotide sequence having at least 90% identity with a nucleotide sequence of SEQ ID NO: 1 or 2 and has an activity to cause skipping of the 51st exon in the human dystrophin gene.

4. The antisense oligomer according to any one of claims 1 to 3, which is an oligonucleotide, or a pharmaceutically acceptable salt or hydrate thereof.

5. The antisense oligomer according to claim 4, or a pharmaceutically acceptable salt or hydrate thereof, wherein the sugar moiety and/or the phosphate-binding region of at least one nucleotide constituting the oligonucleotide is modified.

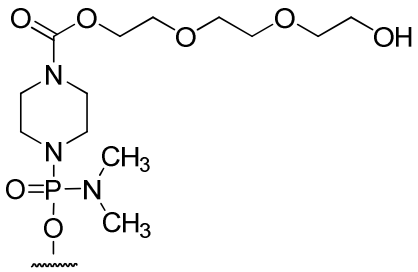
6. The antisense oligomer according to claim 4 or 5, or a pharmaceutically acceptable salt or hydrate thereof, wherein the sugar moiety of at least one nucleotide constituting the oligonucleotide is a ribose in which the 2'-OH group is replaced by any one selected from the group consisting of OR, R, R'OR, SH, SR, NH_2, NHR, NR_2, N_3, CN, F, Cl, Br and I (wherein R is an alkyl or an aryl and R' is an alkylene).

7. The antisense oligomer according to any one of claims 4 to 6, or a pharmaceutically acceptable salt or hydrate thereof, wherein the phosphate-binding region of at least one nucleotide constituting the oligonucleotide is any one selected from the group consisting of a phosphorothioate bond, a phosphorodithioate bond, an alkylphosphonate bond, a phosphoramidate bond and a boranophosphate bond.

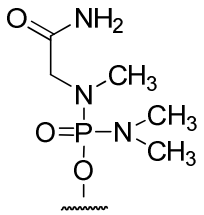
8. The antisense oligomer according to any one of claims 1 to 3, which is a morpholino oligomer, or a pharmaceutically acceptable salt or hydrate thereof.

9. The antisense oligomer according to claim 8, which is a phosphorodiamidate morpholino oligomer, or a pharmaceutically acceptable salt or hydrate thereof.

10. The antisense oligomer according to claims 8 or 9, or a pharmaceutically acceptable salt or hydrate thereof, wherein the 5' end is any one of chemical formulae (1) to (3) below:



（1）



（2）



（3）

11. A pharmaceutical composition for the treatment of muscular dystrophy, comprising as an active ingredient the antisense oligomer, or a pharmaceutically acceptable salt or hydrate thereof according to any one of claims 1 to 10.

12. The pharmaceutical composition according to claim 11, comprising a pharmaceutically acceptable carrier.

13. The antisense oligomer, or a pharmaceutically acceptable salt or hydrate thereof according to any one of claims 1 to 10, for use in the treatment of muscular dystrophy.

14. The antisense oligomer, or a pharmaceutically acceptable salt or hydrate thereof for use according to claim 13, wherein the patient with muscular dystrophy in the said treatment is a patient with deletions of nucleotides within exons 29-50, 50, 45-50, 48-50, 49-50, 52, 52-63, 13-50, 19-50, 43-50 or 47-50.

15. The antisense oligomer, or a pharmaceutically acceptable salt or hydrate thereof for use according to claim 13 or 14, wherein the patient is a human.