

## CLAIMS

1. An oligoribonucleotide of double-stranded structure (dsRNA) for inhibiting the expression of a given target gene in mammalian cells, wherein the dsRNA consists of 15 to 21 base pairs and one strand of the dsRNA has a region I, which is complementary to the target gene and consists of 15 to 21 consecutive nucleotide pairs, and wherein a region II, which is complementary within the double-stranded structure, is formed by two separate RNA single strands, wherein the double-stranded structure is stabilised by chemical linkage of the individual strands.
2. The dsRNA according to claim 1, wherein the target gene is selected from the following group: oncogene, cytokine gene, Id-protein gene, development gene, PKR gene, prion gene.
3. The dsRNA according to any one of the preceding claims, wherein the dsRNA is packaged in micellar structures, preferably in liposomes.
4. The dsRNA according to any one of the preceding claims, wherein the dsRNA is enclosed in viral natural capsides or in artificial capsides produced chemically or enzymatically or in structures derived therefrom.
5. The dsRNA according to any one of the preceding claims, wherein the target gene is part of a virus.
6. The dsRNA according to claim 5, wherein the virus is a virus pathogenic for humans.
7. The dsRNA according to claim 5, wherein the virus or viroid is a virus pathogenic for animals.
8. The dsRNA according to any one of the preceding claims, wherein the dsRNA

is double-stranded in segments.

9. The dsRNA according to any one of the preceding claims, wherein the ends of the dsRNA are modified in order to counteract degradation in the mammalian cells or dissociation into the single strands.
10. The dsRNA according to any one of the preceding claims, wherein the cohesion of the complementary region II caused by the nucleotide pairs is increased by at least one, preferably two further chemical linkage(s).
11. The dsRNA according to claim 10, wherein the chemical linkage is formed by a covalent or ionic bond, a hydrogen bond, hydrophobic interactions, preferably van-der-Waals or stacking interactions, or by metal ion coordination.
12. The dsRNA according to claim 10 or 11, wherein the chemical linkage is formed at least at one, preferably at both ends of the complementary region II.
13. The dsRNA according to any one of claims 10 to 12, wherein the chemical linkage is formed by means of one or more linkage groups, wherein the linkage groups are preferably poly-(oxyphosphinicoxy-1,3-propandiol) and/or polyethylenglycol chains.
14. The dsRNA according to any one of claims 10 to 12, wherein the chemical linkage is formed by purine analogues used in the complementary regions II in place of purines.
15. The dsRNA according to any one of claims 10 to 12, wherein the chemical linkage is formed by azabenzene units introduced into the complementary regions II.
16. The dsRNA according to any one of claims 10 to 12, wherein the chemical linkage is formed by branched nucleotide analogues used in the complementary regions II in place of nucleotides.
17. The dsRNA according to any one of claims 10 to 12, wherein at least one of the following groups is used for generating the chemical linkage: methylene blue; bifunctional groups, preferably bis(2-chloroethyl)amine; N-acetyl-N'-(p-glyoxybenzoyl)cystamine; 4-thiouracil, psoralene.

18. The dsRNA according to any one of claims 10 to 12, wherein the chemical linkage is formed by thiophosphoryl groups provided at the ends of the double-stranded region.
19. The dsRNA of any one of claims 10 to 12, wherein the chemical linkage are triple-helix bonds provided at the ends of the double-stranded region.
20. The dsRNA according to any one of the preceding claims, wherein the nucleotides of the dsRNA are modified.
21. The dsRNA according to any one of the preceding claims, wherein at least one 2'-hydroxyl group of the nucleotides of the dsRNA in the complementary region II is replaced by a chemical group, preferably a 2'-amino or a 2'-methyl group.
22. The dsRNA according to any one of the preceding claims, wherein at least one nucleotide in at least one strand of the complementary region II is a locked nucleotide with a sugar ring which is chemically modified, preferably by a 2' O, 4'-C-methylene bridge.
23. The dsRNA according to any one of the preceding claims, wherein the dsRNA is bound to, associated with or surrounded by at least one viral coat protein which originates from a virus, is derived therefrom or has been prepared synthetically.
24. The dsRNA according to any one of the preceding claims, wherein the coat protein is derived from polyoma virus.
25. The dsRNA according to claim 24, wherein the coat protein contains the virus protein 1 (VP1) and/or the virus protein 2 (VP2) of the polyoma virus.
26. The dsRNA according to claim 24 or 25, wherein during the formation of a capsid or capsid-like structure from the coat protein, one side faces the interior of the capsid or capsid-like structure.
27. The dsRNA according to any one of the preceding claims, wherein the dsRNA is complementary to the primary or processed RNA transcript of the target gene.

28. The dsRNA according to any one of the preceding claims, wherein the mammalian cells are human cells.