Claims

1. Antisense-oligonucleotide consisting of 10 to 28 nucleotides and at least two of the 10 to 28 nucleotides are LNAs and the antisense-oligonucleotide is capable of hybridizing with a region of the gene encoding the TGF-R_{II} or with a region of the mRNA encoding the TGF-R_{II}, wherein the region of the gene encoding the TGF-R_{II} or the region of the mRNA encoding the TGF-R_{II} comprises the sequence **TGGTCCATTC** (Seq. ID No. 4), and the antisense-oligonucleotide comprises a sequence complementary to the sequence **TGGTCCATTC** (Seq. ID No. 4) and salts and optical isomers of said antisense-oligonucleotide.

2. Antisense-oligonucleotide according to claim 1, wherein the antisense-oligonucleotide hybridizes selectively only with the sequence **TGGTCCATTC** (Seq. ID No. 4) of the region of the gene encoding the TGF-R_{II} or of the region of the mRNA encoding the TGF-R_{II}.

3. Antisense-oligonucleotide according to claim 1 or 2, wherein the antisense-oligonucleotide has a length of 12 to 20 nucleotides and/or wherein the antisense-oligonucleotide has a gapmer structure with 1 to 5 LNA units at the 3' terminal end and 1 to 5 LNA units at the 5' terminal end and/or wherein the antisense-oligonucleotide has phosphate, phosphorothioate and/or phosphorodithioate as internucleotide linkages.

4. Antisense-oligonucleotide according to any one of the claims 1 – 3, wherein the antisense-oligonucleotide is represented by the following general formula (S6):

5'-N^7-**AATGGACC**-N^8-3' (Seq. ID No. 100)

wherein

N^7 represents: TGAATCTTGAATATCTCATG-, GAATCTTGAATATCTCATG-, AATCTTGAATATCTCATG-, ATCTTGAATATCTCATG-, TCTTGAATATCTCATG-, CTTGAATATCTCATG-, TTGAATATCTCATG-, TGAATATCTCATG-, GAATATCTCATG-, AATATCTCATG-, ATATCTCATG-, TATCTCATG-, ATCTCATG-, TCTCATG-, CTCATG-, TCATG-, CATG-, ATG-, TG-, or G-;

and

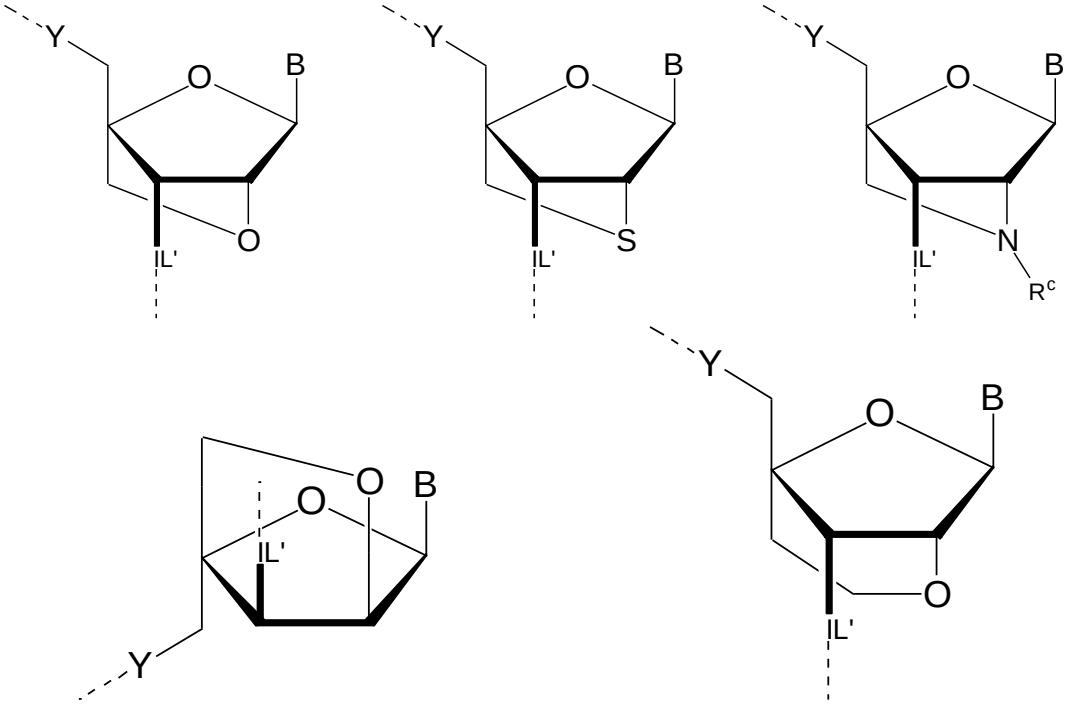
N^8 is selected from: -AGTATTCTAGAAACTCACCA, -AGTATTCTAGAAACTCACC, -AGTATTCTAGAAACTCAC,

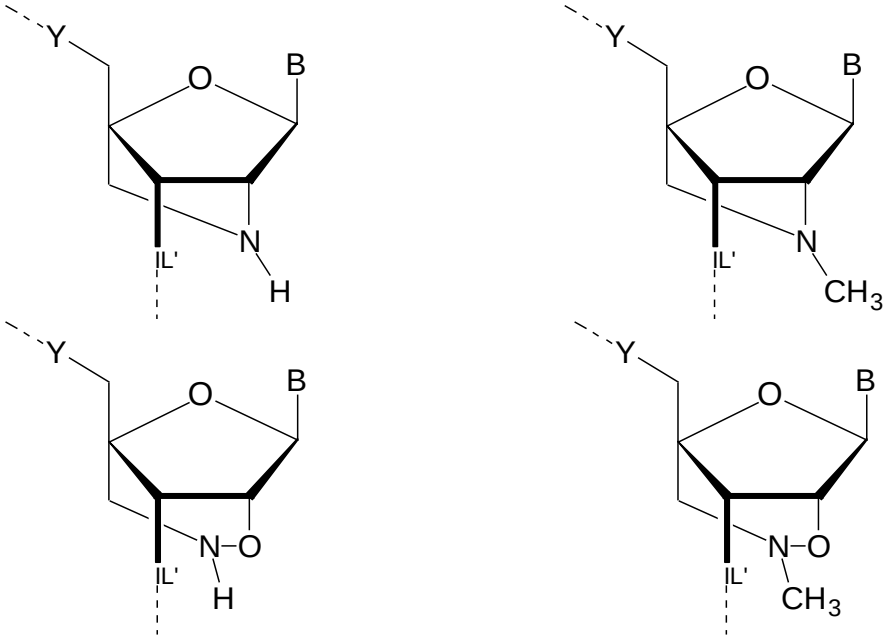
-AGTATTCTAGAAACTCA, -AGTATTCTAGAAACTC, -AGTATTCTAGAAACT, -AGTATTCTAGAAAC, -AGTATTCTAGAAA, -AGTATTCTAGAA, -AGTATTCTAGA, -AGTATTCTAG, -AGTATTCTA, -AGTATTCT, -AGTATTC, -AGTATT, -AGTAT, -AGTA, -AGT, -AG, or -A.

5. Antisense-oligonucleotide according to any one of the claims 1 – 4, wherein the last 2 to 4 nucleotides at the 5’ terminal end are LNA nucleotides and the last 2 to 4 nucleotides at the 3’ terminal end are LNA nucleotides and between the LNA nucleotides at the 5’ terminal end and the LNA nucleotides at the 3’ terminal end at least 6 consecutive nucleotides are present which are non-LNA nucleotides or which are DNA nucleotides.

6. Antisense-oligonucleotide according to any one of the claims 1 – 5, wherein the LNA nucleotides are linked to each other through a phosphorothioate group or a phosphorodithioate group or wherein all nucleotides are linked to each other through a phosphate group or a phosphorothioate group or a phosphorodithioate group.

7. Antisense-oligonucleotide according to any one of the claims 1 – 6, wherein the LNA nucleotides are selected from the following group:





wherein

IL' represents –X''–P(=X')(X$^-$)–;

X' represents =O or =S;

X$^-$ represents –O$^-$, –OH, –OR^H, –NHR^H, –N(R^H)$_2$, –OCH$_2$CH$_2$OR^H, –OCH$_2$CH$_2$SR^H, –BH$_3^-$, –R^H, –SH, –SR^H, or –S$^-$;

X'' represents –O–, –NH–, –NR^H–, –CH$_2$–, or –S–;

Y is –O–, –NH–, –NR^H–, –CH$_2$– or –S–;

R^C and R^H are independently of each other selected from hydrogen and C$_{1-4}$-alkyl;

B represents a nucleobase selected from the following group:

adenine, thymine, guanine, cytosine, uracil, 5-methylcytosine, 5-hydroxymethyl cytosine, N^4-methylcytosine, xanthine, hypoxanthine, 7-deazaxanthine, 2-aminoadenine, 6-methyladenine, 6-methylguanine, 6-ethyladenine, 6-ethylguanine, 2-propyladenine, 2-propylguanine, 6-carboxyuracil, 5,6-dihydrouracil, 5-propynyl uracil, 5-propynyl cytosine, 6-aza uracil, 6-aza cytosine, 6-aza thymine, 5-uracil (pseudouracil), 4-thiouracil, 8-fluoroadenine, 8-chloroadenine, 8-bromoadenine, 8-iodoadenine, 8-aminoadenine, 8-thioladenine, 8-thioalkyladenine, 8-hydroxyladenine, 8-fluoroguanine, 8-chloroguanine, 8-bromoguanine, 8-iodoguanine, 8-aminoguanine, 8-thiolguanine, 8-thioalkylguanine, 8-hydroxylguanine, 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, 5-trifluoromethyluracil, 5-fluorocytosine, 5-bromocytosine, 5-chlorocytosine, 5-iodocytosine, 5-trifluoromethylcytosine, 7-methylguanine, 7-methyladenine, 8-azaguanine, 8-azaadenine, 7-deazaguanine, 7-deazaadenine, 7-deaza-8-azaadenine, 3-deazaguanine, 3-deazaadenine, 2-thiouracil, 2-thiothymine and 2-thiocytosine.

8. Antisense-oligonucleotide according to any one of the claims 1 – 7 having one of the following gapmer structures: 3-8-3, 4-8-2, 2-8-4, 3-8-4, 4-8-3, 4-8-4, 3-9-3, 4-9-2, 2-9-4, 4-9-3, 3-9-4, 4-9-4, 3-10-3, 2-10-4, 4-10-2, 3-10-4, 4-10-3, 4-10-4, 2-11-4, 4-11-2, 3-11-4, 4-11-3.

9. Antisense oligonucleotide according to any one of the claims 1 – 8, wherein the antisense oligonucleotides bind with 100% complementarity to the mRNA encoding TGF-R_{II} and do not bind to any other region in the human transcriptome.

10. Antisense-oligonucleotide selected from the following group:

Seq ID No.	**Sequence, 5'-3'**
219a	**Gb^{1}sAb^{1}s**dAsdTsdGsdGsdAsdCs**C*b^{1}sAb^1**
219b	**Gb^{1}Ab^1**dAdTdGdGdAdC**C*b^{1}Ab^1**
220a	**Tb^{1}sGb^{1}sAb^{1}s**dAsdTsdGsdGsdAsdCs**C*b^{1}sAb^{1}sGb^1**
220b	**Tb^{1}Gb^{1}Ab^1**dAdTdGdGdAdC**C*b^{1}Ab^{1}Gb^1**
220c	**Tb^{1}sGb^{1}sAb^{1}s**dAsdTsdGsdGsdAsdCsdC*s**Ab^{1}sGb^1**
220d	**Tb^{1}s**dGsdA*sdAsdTsdGsdGsdAsdC*sdCs**Ab^{1}sGb^1**
220e	**Tb^{1}sGb^{1}s**dA*sdA*sdTsdGsdGsdA*sdC*sdC*sdAs**Gb^1**
221a	**Tb^{1}sGb^{1}sAb^{1}sAb^{1}s**dTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^1**
221b	**Tb^{1}Gb^{1}Ab^{1}Ab^1**dUdGdGdAdCdC**Ab^{1}Gb^{1}Tb^1**
221c	**Tb^{1}sGb^{1}sAb^{1}sAb^{1}s**dTsdGsdGsdAsdCsdC*s**Ab^{1}sGb^{1}sTb^1**
221d	**Tb^{1}sGb^{1}sAb^{1}s**dAsdTsdGsdGsdA*sdCsdC*sdAs**Gb^{1}sTb^1**
221e	**Tb^{1}sGb^{1}s**dA*sdAsdTsdGsdGsdAsdC*sdCsdAsdGs**Tb^1**
221f	**Tb^{1}s**dGsdAsdA*sdTsdGsdGsdAsdCs**C*b^{1}sAb^{1}sGb^{1}sTb^1**
222a	**Ab^{1}sTb^{1}sGb^{1}sAb^{1}s**dAsdTsdGsdGsdAsdCs**C*b^{1}sAb^{1}sGb^{1}sTb^1**
222b	**Ab^{1}Tb^{1}Gb^{1}Ab^1**dAsdTsdGsdGsdAsdCsdC*s**Ab^{1}Gb^{1}Tb^1**
222c	**Ab^{1}Tb^1**dGdA*dAdTdGdGdA*dC**C*b^{1}Ab^{1}Gb^{1}Tb^1**
222d	**Ab^{4}sTb^{4}sGb^{4}s**dA*sdAsdTsdGsdGsdAsdCsdC*sAbs**Gb^{4}sTb^4**
222e	**Ab^{1}s**dTsdGsdA*sdA*sdTsdGsdGsdA*sdC*sdC*sdA*sdGs**Tb^1**
222f	**Ab^{2}sTb^{2}sGb^{2}s**dA*sdAsdUsdGsdGsdAsdCsdCs**Ab^{2}sGb^{2}sTb^2**
222g	**Ab^{4}ssTb^{4}ss**dGssdAssdAssdTssdGssdGssdAssdCssdCss**Ab^{4}ssGb^{4}ssTb^4**
223a	**Ab^{1}sTb^{1}sGb^{1}sAb^{1}s**dAdTdGdGdAdCdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^1**
223b	**Ab^{1}ssTb^{1}ss**dGssdAssdAssdTssdGssdGssdAssdCssdCssdAssdGssdTss**Ab^1**
223c	**Ab^1**dTdGdAdAdTdGdGdAdCdCdAdGdT**Ab^1**
223d	**Ab^{1}sTb^{1}s**dGsdAsdAsdUsdGsdGsdA*sdCsdCsdAs**Gb^{1}sTb^{1}sAb^1**
223e	**Ab^{6}Tb^{6}Gb^6**dA*dAdTdGdGdAdCdC*dA**Gb^{6}Tb^{6}Ab^6**

223f	**Ab^{1}Tb^1**dGsdAsdAsdTsdGsdGsdAsdC*sdC*s**Ab^{1}Gb^{1}Tb^{1}Ab^1**
223g	**Ab^{4}sTb^{4}sGb^{4}s**dAsdAsdTsdGsdGsdAsdCsdCsdAsdGs**Tb^{4}sAb^4**
223h	**Ab^{1}sTb^{1}sGb^{1}sAb^{1}s**dAsdTsdGsdGsdAsdC*sdC*sdAsdGsdTs**Ab^1**
223i	**Ab^{1}ssTb^{1}ss**dGssdAssdAssdUssdGssdGssdA*ssdCssdCssdAssdGss**Tb^{1}ssAb^1**
218y	**C*b^{2}sAb^{2}sTb^{2}s**dGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{2}sGb^{2}sTb^{2}sAb^2**
218z	**C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdC*sdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218aa	**C*b^{1}ssAb^{1}ssTb^{1}ss**dGssdAssdAssdTssdGssdGssdAssdCssdCss**Ab^{1}ssGb^{1}ss Tb^{1}ssAb^1**
218ab	**C*b^{1}Ab^{1}Tb^1**dGsdAsdAsdUsdGsdGsdAsdC*sdC*s**Ab^{1}Gb^{1}Tb^{1}Ab^1**
218ac	**C*b^{1}Ab^{1}Tb^1**dGsdA*sdA*sdTsdGsdGsdA*sdCsdCs**Ab^{1}Gb^{1}Tb^{1}Ab^1**
218ad	**C*b^{6}sAb^{6}sTb^{6}s**dGdAdAdTdGdGdAdCdC**Ab^{6}sGb^{6}sTb^{6}sAb^6**
218ae	**C*b^{7}sAb^{7}sTb^{7}sGb^{7}s**dAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{7}sTb^{7}sAb^7**
218af	**C*bs^{1}Ab^{1}s**dUsdGsdAsdAsdUsdGsdGsdUsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218b	**C*b^{1}sAb^{1}sTb^1**sdGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218m	**C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdC*sdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218n	**C*b^{1}Ab^{1}Tb^1**dGsdAsdAsdTsdGsdGsdAsdC*sdC*s**Ab^{1}Gb^{1}Tb^{1}Ab^1**
218o	**C*b^{1}sAb^{1}sTb^{1}s**dGsdA*sdA*sdTsdGsdGsdA*sdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218p	**C*b^{1}sAb^{1}sTb^{1}s**dGsdA*sdA*sdTsdGsdGsdA*sdC*sdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218q	**C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdC*sdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218c	**C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218r	**C*b^{1}Ab^{1}Tb^1**dGdAdAdTdGdGdAdCdC**Ab^{1}Gb^{1}Tb^{1}Ab^1**
218s	**C*b^{1}sAb^{1}sTb^{1}s**dGdAdAdTdGdGdAdC*sdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218t	**/5SpC3s/C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218u	**C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1/3SpC3s/**
218v	**/5SpC3s/C*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1 /3SpC3s/**
218ag	**C*b^{1}sAb^{1}sTb^{1}s**dGsdA*sdA*sdUsdGsdGsdA*sdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^1**
218ah	**C*b^{4}ssAb^{4}ssTb^{4}ss**dGssdA*ssdA*ssdTssdGssdGssdA*ssdCssdCssdAssdGss **Tb^{4}ssAb^4**
218ai	**C*b^{2}ssAb^{2}ssTb^{2}ssGb^{2}ss**dAssdAssdTssdGssdGssdAssdCssdCssdAssdGssdT ss**Ab^2**
218aj	**C*b^{1}Ab^{1}Tb^{1}Gb^1**dAdAdUdGdGdAdCdC**Ab^{1}Gb^{1}Tb^{1}Ab^1**
218ak	**C*b^{1}sAb^{1}sTb^{1}sGb^{1}sAb^{1}s**dA*sdUsdGsdGsdAsdCsdCsdA*s**Gb^{1}sTb^{1}sAb^1**
218am	**C*b^{1}sAb^{1}s**dUsdGsdAsdAsdUsdGsdGsdAsdCs**C*b^{1}sAb^{1}sGb^{1}sTb^{1}sAb^1**
218an	**C*b^{6}sAb^{6}sTb^{6}sGb^{6}s**dAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{6}sTb^{6}sAb^6**
218ao	**C*b^{7}sAb^{7}sTb^{7}s**dGsdA*sdA*sdUsdGsdGsdAsdCsdCsdA*s**Gb^{7}sTb^{7}sAb^7**
218ap	**C*b^{4}sAb^{4}sTb^{4}sGb^{4}s**dA*sdAsdTsdGsdGsdAsdCsdC*sdAsdGs**Tb^{4}sAb^4**
218aq	**C*b^{4}Ab^{4}Tb^{4}Gb^4**dAdAdTdGdGdAdCdCdAdG**Tb^{4}Ab^4**

218ar	**C*b^{1}sAb^{1}sTb^1**sdGsdAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{1}sTb^{1}sAb^1**
224a	**C*b^{1}sAb^{1}sTb^{1}sGb^{1}sAb^{1}s**dAsdTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^{1}sTb^1**
224b	**C*b^{2}sAb^{2}sTb^{2}s**dGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{2}sGb^{2}sTb^{2}sAb^{2}sTb^2**
224c	**C*b^{1}sAb^{1}sTb^{1}sGb^{1}s**dAsdAsdTsdGsdGsdAsdCsdCsdAsdGs**Tb^{1}sAb^{1}sTb^1**
224d	**C*b^{1}s**dAsdUsdGsdAsdAsdUsdGsdGsdAsdC*sdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^{1}sTb^1**
224e	**C*b^{1}sAb^{1}sTb^{1}s**dGsdA*sdA*sdTsdGsdGsdA*sdC*sdC*s**Ab^{1}sGb^{1}sTb^{1}sAb^{1}sTb^1**
224f	**C*b^{1}Ab^1**dTdGdAdAdTdGdGdAdCdCdA**Gb^{1}Tb^{1}Ab^{1}Tb^1**
224g	**C*b^{1}s**dAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGs**Tb^{1}sAb^{1}sTb^1**
224h	**C*b^{1}Ab^{1}Tb^{1}Gb^{1}Ab^1**dA*dTdGdGdA*dC*dC*dAdGdT**Ab^{1}Tb^1**
224i	**C*b^{1}ssAb^{1}ssTb^{1}ssGb^{1}ssAb^{1}ss**dAssdTssdGssdGssdAssdCssdCssdAssdGss **Tb^{1}ssAb^{1}ssTb^1**
224j	**C*b^{4}Ab^{4}Tb^4**dGdA*dA*dTdGdGdA*dCdCdA**Gb^{4}Tb^{4}Ab^{4}Tb^4**
224k	**C*b^{6}sAb^{6}sTb^{6}s**dGsdA*sdA*sdUsdGsdGsdA*sdC*sdC*sdAsdGs**Tb^{6}sAb^{6}sTb^6**
224m	**C*b^{7}sAb^{7}sTb^{7}sGb^{7}s**dAdAdTdGdGdAdC*dC*dAs**Gb^{7}sTb^{7}sAb^{7}sTb^7**
225a	**Tb^{1}sC*b^{1}sAb^{1}sTb^{1}sGb^{1}s**dAsdAsdTsdGsdGsdAsdCsdCs**Ab^{1}sGb^{1}sTb^{1}sAb^{1}sTb^1**
225b	**Tb^{7}sC*b^{7}sAb^{7}sTb^{7}sGb^{7}s**dAsdAsdTsdGsdGsdAsdCsdCsdAsdGsdTsdAs**Tb^7**
225c	**Tb^{1}sC*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdC*sdC*sdAs**Gb^{1}sTb^{1}sAb^{1}sTb^1**
225d	**Tb^{1}sC*b^{1}sAb^{1}s**dTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{1}sTb^{1}sAb^{1}sTb^1**
225e	**Tb^{1}sC*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGs**Tb^{1}sAb^{1}sTb^1**
225f	**Tb^{1}C*b^1**dA*dTdGdAdAdUdGdGdAdCdC***Ab^{1}Gb^{1}Tb^{1}Ab^{1}Tb^1**
225g	**Tb^{4}C*b^{4}Ab^{4}Tb^{4}s**dGsdAsdAsdTsdGsdGsdAsdCsdCs**Ab^{4}Gb^{4}Tb^{4}Ab^{4}Tb^4**
225h	**Tb^{1}ssC*b^{1}ssAb^{1}ss**dTssdGssdA*ssdA*ssdTssdGssdGssdAssdCssdC*ssdA*ss dGss**Tb^{1}ssAb^{1}ssTb^1**
225i	**Tb^{2}C*b^{2}Ab^2**dTdGdAdAdTdGdGdAdC*dC***Ab^{2}Gb^{2}Tb^{2}Ab^{2}Tb^2**
226a	**Tb^{1}sC*b^{1}sAb^{1}sTb^{1}sGb^{1}s**dAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{1}sTb^{1}sAb^{1}sTb^1 sTb^1**
226b	**Tb^{6}C*b^{6}Ab^{6}Tb^{6}Gb^6**dAdAdTdGdGdAdCdCdA**Gb^{6}Tb^{6}Ab^{6}Tb^{6}Tb^6**
226c	**Tb^{1}sC*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGsdTs**Ab^{1}sTb^1 sTb^1**
226d	**Tb^{1}s**dCsdAsdTsdGsdAsdA*sdUsdGsdGsdAsdCsdCsdAs**Gb^{1}sTb^{1}sAb^{1}sTb^{1}sTb^1**
226e	**Tb^{4}sC*b^{4}s**dAsdUsdGsdAsdAsdUsdGsdGsdAsdCsdC*sdAsdGs**Tb^{4}sAb^{4}sTb^4 sTb^4**
226f	**Tb^{2}ssC*b^{2}ssAb^{2}ssTb^{2}ssGb^{2}ss**dAssdAssdTssdGssdGssdAssdCssdCssdAssdG ssdTssdAss**Tb^{2}ssTb^2**
227a	**C*b^{1}sTb^{1}sC*b^{1}sAb^{1}sTb^{1}s**dGsdAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{1}sTb^{1}sAb^1 sTb^{1}sTb^1**
227b	**C*b^{2}sTb^{2}sC*b^{2}s**dAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{2}sTb^{2}sAb^2 sTb^{2}sTb^2**
227c	**C*b^{1}Tb^{1}C*b^1**dAdTdGdAdAdTdGdGdAdCdC*dAdG**Tb^{1}Ab^{1}Tb^{1}Tb^1**
227d	**C*b^{1}s**dUsdCsdAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAs**Gb^{1}sTb^{1}sAb^{1}sTb^1 sTb^1**

227e	**C*b^{4}sTb^{4}sC*b^{4}sAb^{4}s**dTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGs**Tb^{4}sAb^4 sTb^{4}sTb^4**
228a	**Tb^{1}sC*b^{1}sTb^{1}sC*b^{1}sAb^{1}s**dTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGs**Tb^1 sAb^{1}sTb^{1}sTb^{1}sC*b^1**
228b	**Tb^{1}C*b^{1}Tb^{1}C*b^{1}Ab^1**dTdGdAdAdTdGdGdAdC*dC*dAdG**Tb^{1}Ab^{1}Tb^{1}Tb^{1}C*b^1**
228c	**Tb^{6}sC*b^{6}sTb^{6}s**dCsdAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGsdTs**Ab^6 sTb^{6}sTb^{6}sC*b^6**
229a	**Ab^{1}sTb^{1}sC*b^{1}sTb^{1}sC*b^{1}s**dAsdTsdGsdAsdAsdTsdGsdGsdAsdC*sdCsdAsdGsd Ts**Ab^{1}sTb^{1}sTb^{1}sC*b^{1}sTb^1**
229b	**Ab^{1}Tb^{1}C*b^{1}Tb^{1}C*b^1**AdTdGdAdAdTdGdGdAdCdCdAdGdT**Ab^{1}Tb^{1}Tb^{1}C*b^{1}Tb^1**
230a	**Tb^{1}sAb^{1}sTb^{1}sC*b^{1}sTb^{1}s**dCsdAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGs dTsdAs**Tb^{1}sTb^{1}sC*b^{1}sTb^{1}sAb^1**
230a	**Tb^{1}sAb^{1}sTb^{1}sC*b^{1}sTb^{1}s**dCsdAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAsdGs dTsdAs**Tb^{1}sTb^{1}sC*b^{1}sTb^{1}sAb^1**
230b	**Tb^{1}Ab^{1}Tb^{1}C*b^{1}Tb^1**dCdAdTdGdAdAdTdGdGdAdCdCdAdGdTdA**Tb^{1}Tb^{1}C*b^{1}Tb^1 Ab^1**
231a	**Ab^{1}sTb^{1}sAb^{1}sTb^{1}sC*b^{1}s**dTsdCsdAsdTsdGsdAsdAsdTsdGsdGsdAsdCsdCsdAs dGsdTsdAsdTs**Tb^{1}sC*b^{1}sTb^{1}sAb^{1}sGb^1**
231b	**Ab^{1}Tb^{1}Ab^{1}Tb^{1}C*b^1**dTdCdAdTdGdAdAdTdGdGdAdCdCdAdGdTdAdT**Tb^{1}C*b^1 Tb^{1}Ab^{1}Gb^1**

wherein the abbreviations b, d, C*, A*, s, ss have the following meaning:

b^1 β-D-oxy-LNA,
b^2 β-D-thio-LNA,
b^3 β-D-amino-LNA,
b^4 α-L-oxy-LNA,
b^5 β-D-ENA,
b^6 β-D-(NH)-LNA,
b^7 β-D-(NCH$_3$)-LNA,
d 2-deoxy,
C* 5-methylcytosine,
A* 2-aminoadenine,
s the internucleotide linkage is a phosphorothioate group (-O-P(O)(S$^-$)-O-),
ss the internucleotide linkage is a phosphorodithioate group (-O-P(S)(S$^-$)-O-),
/5SpC3s/ (-O-P(O)(S$^-$)-OC$_3$H$_6$OH at 5'-terminal group of an antisense-oligonucleotide,
/3SpC3s/ (-O-P(O)(S$^-$)-OC$_3$H$_6$OH at 3'-terminal group of an antisense-oligonucleotide,
nucleotides in **bold** are LNA nucleotides,
nucleotides not in bold are non-LNA nucleotides.

11. Antisense-oligonucleotide according to any one of the claims 1 – 10 for promoting regeneration and functional reconnection of damaged nerve

pathways and/or for treatment and compensation of age induced decreases in neuronal stem cell renewal.

12. Antisense-oligonucleotide according to any one of the claims 1 – 10 for use in the prophylaxis and treatment of neurodegenerative diseases, neuroinflammatory disorders, traumatic or posttraumatic disorders, neurovascular disorders, hypoxic disorders, postinfectious central nervous system disorders, fibrotic diseases, hyperproliferative diseases, cancer, tumors, presbycusis and presbyopia.

13. Antisense-oligonucleotide for use according to claim 12, wherein the neurodegenerative diseases and neuroinflammatory disorders are selected from the group consisting of: Alzheimer's disease, Parkinson's disease, Creutzfeldt Jakob disease, new variant of Creutzfeldt Jakobs disease, Hallervorden Spatz disease, Huntington's disease, multisystem atrophy, dementia, frontotemporal dementia, motor neuron disorders, amyotrophic lateral sclerosis, spinal muscular atrophy, spinocerebellar atrophies, schizophrenia, affective disorders, major depression, meningoencephalitis, bacterial meningoencephalitis, viral meningoencephalitis, CNS autoimmune disorders, multiple sclerosis, acute ischemic / hypoxic lesions, stroke, CNS and spinal cord trauma, head and spinal trauma, brain traumatic injuries, arteriosclerosis, atherosclerosis, microangiopathic dementia, Binswanger' disease, retinal degeneration, cochlear degeneration, macular degeneration, cochlear deafness, AIDS-related dementia, retinitis pigmentosa, fragile X-associated tremor/ataxia syndrome, progressive supranuclear palsy, striatonigral degeneration, olivopontocerebellear degeneration, Shy Drager syndrome, age dependant memory deficits, neurodevelopmental disorders associated with dementia, Down`s Syndrome, synucleinopathies, trinucleotide repeat disorders, trauma, vascular diseases, vascular inflammations, and CNS-ageing and wherein the fibrotic diseases are selected from the group consisting of: pulmonary fibrosis, cystic fibrosis, hepatic cirrhosis, endomyocardial fibrosis, old myocardial infarction, atrial fibrosis, mediastinal fibrosis, myelofibrosis, retroperitoneal fibrosis, progressive massive fibrosis, nephrogenic systemic fibrosis, Crohn's Disease, keloid, systemic sclerosis, arthrofibrosis, Peyronie's disease, Dupuytren's contracture, and residuums after Lupus erythematodes.

14. Pharmaceutical composition containing at least one antisense-oligonucleotide according to any one of claims 1 – 10 together with at least one pharmaceutically acceptable carrier, excipient, adjuvant, solvent or diluent.