G(X)T(X)T(X)cactgaatG(X)C(X) (SEQ ID No. 5)

(wherein, small character represents each nucleic acid base of DNA, T(X),C(X) or G(X) each represents artificial nucleic acid species containing thymine, artificial nucleic acid species containing 5-methylcytosine, or artificial nucleic acid species containing guanine, respectively, and all phosphate bonds represent phosphorothioate.)

[Table 5]

Oligonucleotide compound No.	Artificial nucleic acid species contained in antisense strand	m/z
Malat1-1 (SEQ ID No. 5-1)	ALNA[Me]	1089.8 $[M-4H]^{4-}$
Malat1-2 (SEQ ID No. 5-2)	ALNA[Ms]	1169.3 $[M-4H]^{4-}$
Malat1-3 (SEQ ID No. 5-3)	ALNA[2Pym]	4680.86 $[M-H]^{1-}$

[0350]

Example 147 Evaluation of binding ability to target strand and mismatch selectivity

Each of an antisense strand containing various artificial nucleic acid species (wherein sequence represents gcgttT(X)tttgct (the above-mentioned SEQ ID No. 1), small character represents each nucleic acid base of DNA, T(X) represents each artificial nucleic acid specie containing thymine); a sense strand, that is, DNA strand having a sequence complementary to the antisense strand (wherein sequence represents agcaaaaaacgc (SEQ ID No. 6), and small

G(X)T(X)T(X)cactgaatG(X)C(X) (the same as SEQ ID No. 5 in the above Table 5)

(wherein, small character represents each nucleic acid base of DNA, T(X), C(X) or G(X) each represents artificial nucleic acid species containing thymine, artificial nucleic acid species containing 5-methylcytosine, or artificial nucleic acid species containing guanosine, respectively, and all phosphate bonds represent phosphorothioate.)

[0361]

As clearly shown in Tables 9 and 10, ALNA[Ms] had a strong target gene knockdown in many organs (liver, kidney, skeletal muscle, lung, heart, stomach, jejunum, testis, fat) as compared to ALNA[Me] as a known ALNA. Also ALNA[2Pym] had a strong target gene knockdown in particular organs (heart, jejunum, testis, fat) as compared to ALNA[Me] as a known ALNA. Also ALNA[ipU] had a similar degree of target gene knockdown effect in liver as compared to ALNA[Me], whilst, had a remarkably stronger target gene knockdown effect in lung and spleen than ALNA[Me]. Since various immune cells are accumulated in spleen, antisense oligos including ALNA[ipU] can be expected to act on immune cells, which are considered to have low migration with ordinary nucleic acid drugs. In addition, ALNA[ipU] can be expected to have a strong drug effect on lung or immune system while reducing toxicity in liver.