Modified oligonucleotides

Besides unmodified oligonucleotides, we synthesize oligonucleotides containing modifications. The most common modifications are those at the ends of the chain – at 3´ or 5´ or combined.

There are many other possibilities of modifications: A modifying molecule can be inserted into the chain; nucleotides in the chain can be replaced by their analogues; spacers of various kinds and lenghts as well as functional groups or molecules can be inserted into the sequence of the oligonucleotide. Phosphodiester bonds can be modified as well, at all sites of the chain or selectively.

We recommend that you consult us regarding less common modifications or their combinations prior to their ordering as many limitations of synthesis or purification of final product may occur.

Fluorophores

Fluorophore	5´	internal	3´
6´FAM	1108	x	1138
Fluorescein	1109	x	1133
Fluoerescein- dT	1195	1195	1195
TET	1114	x	x
JOE	1122	x	x
HEX	1111	x	x
Yakima Yellow®	✓	x	✓
Cy3	1103	x	x
CFR 610	1119	x	x
ROX	1125	x	1141
Cy 3.5	✓	✓	x
CFR 635	1120	x	x
Cy5	✓	x	x
Cy5.5	1099	x	x

ATTO Fluorophores

ATTO Fluorophore	5´	internal	3´
ATTO 465	✓	x	✓
ATTO 550	1091	x	✓
ATTO 647	✓	x	✓

The whole list of ATTO fluorophores can be found on: **https://www.generi-biotech.com/products/atto-dyes**

The table show catalogue numbers of modifications
✓ *the modification has a limitation and can be provided only after consultation; we can give a price quotation after you select your specific sequence to be modified and its scale*
x *unavailable combination*

Quenchers

Quencher	5´	internal	3´
BHQ1	1127	1198	1142
BHQ2	1128	1199	1143
BHQ3	x	x	1144
BBQ650	1129	x	1145

Quencher BBQ is covered by US Patent 7,879,986.

Other modifications

Amino	5´	internal	3´
Amino C3sp	✓	x	x
Amino C6sp	1101	x	x
Amino C7sp	x	x	1135
8-Amino-dA	1193	1193	1193
8-Amino-dG	✓	✓	✓

Biotin	5´	internal	3´
Biotin	1102	x	x
Biotin-dT	✓	✓	✓
Biotin-TEG	x	x	1130

Spacer	5´	internal	3´
Spacer C3	1457	1202	1131
Spacer 9	1458	1203	x
Spacer 18	1459	1204	x
Spacer C12	1460	1205	x
D-spacer	1461	1206	x

Universal bases	5´	internal	3´
Inosin	1100	1100	1100

Cross-link bases	5´	internal	3´
5-Br-dU	1170	1170	1170
5-I-dU	✓	✓	✓

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x unavailable combination

Other modifications

Modified bases	5´	internal	3´
5-Me-dC	✓	✓	✓
7-Deaza-dA	✓	✓	x
7-Deaza-8-aza-dG	✓	✓	x
8-Oxo-dG	✓	✓	x
C8-Alkyne-dC	✓	✓	x
C8-Alkyne-dT	✓	✓	x

Modified backbone	5´	internal	3´
2´OMe-RNA	✓	✓	✓
2´F-RNA	✓	✓	✓
Phosphorothioate	1453	1160	2104
LNA base NEW	✓	✓	✓
L-DNA NEW	✓	✓	✓
2´-F-ANA NEW	✓	✓	✓
Isotopic base COMING SOON	✓	✓	✓

Phosphorylation	5´	internal	3´
Phosphate	1110	x	1139

Thiol modifications	5´	internal	3´
Thiol SH	1115	x	1137
Thiol S-S	1106	x	1152

Other	5´	internal	3´
2´3´-ddC	x	x	✓
dU	1169	1169	1169
Hexynyl	1456	x	x
Cholesterol	1112	x	1134
5´SEQplus	1121	x	x

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x *unavailable combination*