



REAGENTS
FOR MOLECULAR BIOLOGY
DNA/RNA SYNTHESIS
AND ANALYSIS

2026

ABOUT US

FIDELITY OLIGOS, LLC (Gaithersburg, MD) specializes in the synthesis of modified and highly modified DNA/RNA oligonucleotides and analogues. For over 20 years (previously within Fidelity Systems, Inc.) we have gained an extensive expertise that allows us to successfully synthesize difficult and unusual constructs.

Having synthesized

- **biotinylated oligos** (Moreno et al. *Nucleic Acids Research* 2009, 37, 1925-1935)
- **antagomirs and 2'-OMe RNA oligos** (da Costa Martins et al. *Nature Cell Biology* 2010, 1220-1227; Wang et al. *Cancer Cell*, 2008, 14, 369-381; Angelo Veronese et al. *Cancer Res.*, 2010, 70, 3140-3149),
- **trithiol modified oligos** (Claridge et al. *Am. Chem. Soc.* 2008, 130, 9598-9605; Phares et al. *Anal. Chem.* 2009, 81, 1095-1100; Zheng et al. *Angew. Chem. Int.* 2011, 50, 1-6),
- **oligos with extraordinary long tethers** (Dejardin et al. *Cell* 2009, 136, 175-186; Bakalova et al. *Am. Chem. Soc.* 2005, 127, 11328-11335),
- **force sensors** (Shroff et al. *Nano Lett.* 2005, 5, 1509-1514.),
- **plasmon rulers** (Reinhard et al. *Nano Lett.* 2005, 5, 2246-2252; Sonnichsen et al. *Nature Biotechnology*, 2005, 23, 741-745 ; Reinhard et al. *PNAS* 2007, 104, 2667-2672),
- **pteridine containing oligos** (Datta et al. *PNAS* 2010, 107, 17980-17985)
- **and many, many more non-vanilla oligos**

We have helped to advance the research of others. **We are happy to assist you!**

We also do custom synthesis of small molecules such as unusual phosphoramidites, nucleoside triphosphates and NHS-esters.

We pride ourselves in making high quality products for both industry and academia and...

... **we love to be challenged.**



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CONTENTS

PROPRIETARY PRODUCTS.....	5
5'-AMINO MODIFIERS – (AMINO LINKER PHOSPHORAMIDITES).....	5
SPACER PHOSPHORAMIDITES.....	6
CLEAVABLE SPACER PHOSPHORAMIDITES.....	7
TERMINUS (5'-END) MOX MODIFIER PHOSPHORAMIDITES.....	8
BIOTIN PHOSPHORAMIDITES.....	9
5'-THIOL PHOSPHORAMIDITES	10
BRANCHING UNIT PHOSPHORAMIDITES.....	11
2'-MOX PRECURSOR PHOSPHORAMIDITES.....	11
2'-SUC PRECURSOR PHOSPHORAMIDITES.....	12
3'-AMINO-MODIFIER CPG.....	12
PHI29 RANDOM PRIMER.....	13
CUSTOM OLIGONUCLEOTIDE SYNTHESIS.....	14
2' AMINO MODIFIED OLIGONUCLEOTIDES	14
5' AMINO MODIFIED OLIGOS.....	14
BIOTINYLATED OLIGOS	14
BRANCHED OLIGOS.....	14
CUSTOM RNA SYNTHESIS.....	14
FIMERS	15
MULTI LABELED OLIGOS.....	15
PHOSPHOROTHIOATES	15
PTERIDINE PROBES.....	15
5' THIOL MODIFIED OLIGONUCLEOTIDES.....	15
FLUORESCENT DYE PHOSPHORAMIDITES.....	16
FLUORESC EIN PHOSPHORAMIDITES.....	17
JOE PHOSPHORAMIDITES.....	17
TET PHOSPHORAMIDITE	18
HEX PHOSPHORAMIDITES.....	18
TAMRA PHOSPHORAMIDITE.....	19
R6G PHOSPHORAMIDITE	19
ROX PHOSPHORAMIDITE	19
CYANINE PHOSPHORAMIDITES	20
QUENCHER PHOSPHORAMIDITES.....	21
BHQ PHOSPHORAMIDITES.....	21
BBQ PHOSPHORAMIDITES	21
IOWA BLACK PHOSPHORAMIDITES.....	22
FUNCTIONAL PHOSPHORAMIDITES.....	23
ALKYNE PHOSPHORAMIDITES.....	23
AMINE PHOSPHORAMIDITES.....	24
BCN PHOSPHORAMIDITES.....	24
BIOTIN PHOSPHORAMIDITES.....	25
LIPID PHOSPHORAMIDITES.....	25
THIOL PHOSPHORAMIDITES	26
GALNAC PHOSPHORAMIDITE	26
OTHER FUNCTIONAL PHOSPHORAMIDITES.....	27
NUCLEOSIDIC PHOSPHORAMIDITES.....	28
5'-AMINO PHOSPHORAMIDITES.....	28
OXOPENTYL PHOSPHORAMIDITES.....	29
FLUORESCENT DYE AND QUENCHER NUCLEOSIDIC PHOSPHORAMIDITES.....	30
ALKYNE NUCLEOSIDIC PHOSPHORAMIDITES.....	31
OTHER NUCLEOSIDIC PHOSPHORAMIDITES.....	32

CONTROLLED PORE GLASS (CPG)	33
CPG WITH FLUORESCENT LABELS.....	33
CPG WITH DYE QUENCHERS	34
CPG WITH VARIOUS FUNCTIONAL GROUPS	35
REAGENTS FOR BIOCONJUGATION	37
ACTIVATED ESTERS.....	37
AZIDES.....	39
ALKYNES	43
BICYCLONONYNES (BCN)	44
CROSSLINKERS	45
MASS-TAG REAGENTS	45
<i>TRANS</i> -CYCLOOCTENES (TCO)	46
AUXILIARY REAGENTS	46
GRAPHENE OXIDE	47
MOLECULAR PROBES	48
MITOCHONDRIA LABELING	48
LIPIDS FOR BIOLOGY	49
CATIONIC AND IONIZABLE LIPIDS	49

PROPRIETARY PRODUCTS

FIDELITY OLIGOS specializes in the synthesis of advanced chemical reagents for oligonucleotide chemistry, providing a comprehensive portfolio of custom phosphoramidites, linkers, spacers, and precursor monomers essential for DNA/RNA modification. Their product line includes biotin phosphoramidites for affinity tagging, amino-modifier amidites for conjugation with dyes or haptens, and PEG-like spacers that enhance solubility and reduce steric hindrance in hybridization assays. The company also supplies NHS-esters for post-synthetic derivatization, nucleoside triphosphates for enzymatic incorporation, and rare building blocks tailored for site-specific labeling or structural modification of oligos.

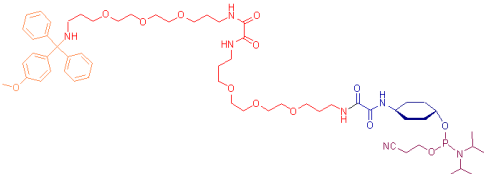
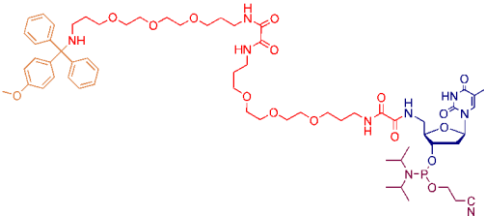
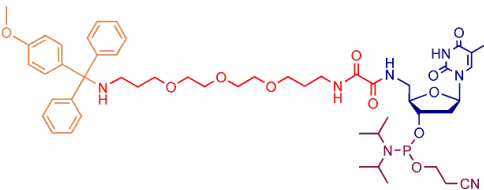
5'-Amino Modifiers – (Amino Linker Phosphoramidites)

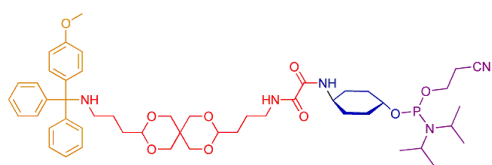
Amino Linkers are primarily used to functionalize an oligonucleotide at the 5'-end. The resulting amino modified oligonucleotides are used in DNA microarray production and as intermediates to functionally labeled oligonucleotides. Our non-nucleosidic amino linkers are made from a common secondary aminoalcohol, *trans*-4-aminocyclohexanol, which is subsequently derivatized utilizing our proprietary methoxyoxalamido (MOX) chemistry. This strategy allows us to easily tailor or customize the synthesis of any amino-linker amidite based on any commercially-available primary aliphatic diamine.

These phosphoramidites exhibit increased stability in solution in comparison to other commercially available amino linkers made from primary aliphatic aminoalcohols.

Our amino linkers have very long synthesizer lifetimes – typically 3-4 weeks. This translates to an overall cost savings to the end-user who sporadically incorporates these linkers into oligonucleotides, since a fresh amino-linker amidite preparation per use is no longer needed. In addition, most of our amino linkers are solids, which makes handling much easier.

Our amino-linker phosphoramidites are available in different lengths and variable hydrophobicity and can only be added at the terminal 5'-end of an oligonucleotide on the synthesizer. All of our amino linkers have the MMT protecting group allowing the end-user to purify using a "trityl-on" protocol.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	AL34Ach-02	Arm-34 ACH Amino Linker	250 mg	500
	AL34Ach-05	Formula: C ₅₉ H ₉₀ N ₇ O ₁₃ P F.W.: 1136.36 Description: white amorphous powder ³¹ P-NMR: sharp single peak at 144.77 ppm (d ₆ -DMSO) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min	500 mg	710
	AL34AT-02	Arm-34 T Amino Linker	250 mg	750
	AL34AT-05	Formula: C ₆₃ H ₉₂ N ₉ O ₁₆ P F.W.: 1262.43 Description: white amorphous powder ³¹ P-NMR: two peaks at 147.12 and 147.10 ppm (d ₆ -DMSO) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min	500 mg	1200
	AL21AT-02	21AT Amino Linker	250 mg	600
	AL21AT-05	Formula: C ₅₁ H ₇₀ N ₇ O ₁₁ P F.W.: 988.12 Description: white amorphous powder ³¹ P-NMR: two peaks at 147.12 and 147.10 ppm (d ₆ -DMSO) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min	500 mg	995

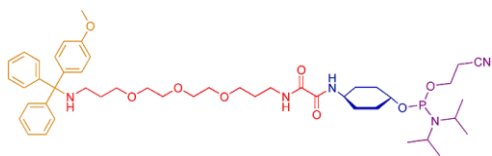


AL21Atada-02
AL21Atada-05

21A tada Amino Linker

Formula: $C_{50}H_{70}N_5O_9P$
F.W.: 916.09
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 145.1 ppm
Packing conditions: under argon
Recommended coupling conditions:
0.1 M acetonitrile solution, 5 min
MMT group removal: 3% TCA in CH_2Cl_2 (Deblock Solution), 5 min

250 mg 300
500 mg 510

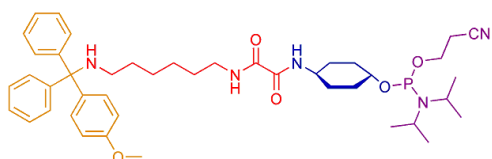


AL21A-02
AL21A-05

21A Amino Linker

Formula: $C_{47}H_{68}N_5O_8P$
F.W.: 862.05
Description: colorless oil
 ^{31}P -NMR: sharp single peak at 145.6 ppm
Packing conditions: under argon
Recommended coupling conditions:
0.1 M acetonitrile solution, 5 min

250 mg 300
500 mg 510

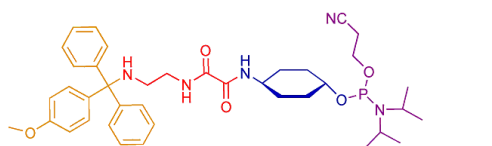


AL14A-02
AL14A-05

14A Amino Linker

Formula: $C_{43}H_{60}N_5O_5P$
F.W.: 757.94
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 145.9 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions:
0.1 M acetonitrile solution, 5 min

250 mg 200
500 mg 340



AL10A-02
AL10A-05

10A Amino Linker

Formula: $C_{39}H_{52}N_5O_5P$
F.W.: 701.8
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 145.1 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions:
0.1 M acetonitrile solution, 5 min

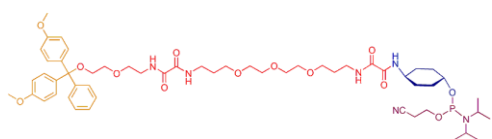
250 mg 180
500 mg 310

Spacer Phosphoramidites

Spacers are normally used to position tags/labels at a desired length from the oligonucleotide and to form non-nucleoside hairpin loops within the oligonucleotide. Our non-nucleosidic spacers are made from a common secondary aminoalcohol, *trans*-4-aminocyclohexanol, which is subsequently derivatized utilizing our proprietary MOX chemistry. This strategy allows us to easily tailor or customize the synthesis of any spacer amidite based on any commercially-available primary aliphatic aminoalcohol.

Our spacers have very long synthesizer lifetimes – typically 3-4 weeks. In addition, the majority of our spacers are solids, which makes handling much easier.

Our spacer phosphoramidites are available in different lengths and variable hydrophobicity and can be added singly or sequentially to the 5'-end or in the middle of an oligonucleotide during synthesis. All of our spacers have the DMT protecting group, and thus, trityl monitoring and "trityl-on" oligonucleotide purification is still possible.



SP26Ach-02
SP26Ach-05

Arm26-Ach Spacer

Formula: $C_{54}H_{79}N_6O_{13}P$
F.W.: 1051.21
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 144.74 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions:
0.1 M acetonitrile solution, 5 min

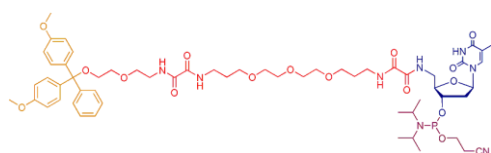
250 mg 400
500 mg 680

CAT. NO

PRODUCT

QUANT.

PRICE, \$



SP26T-02
SP26T-05

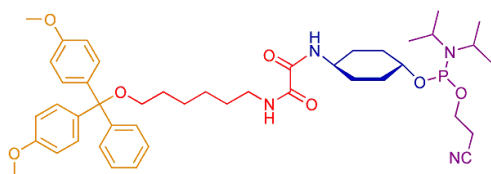
Arm26-T Spacer

Formula: $C_{58}H_{81}N_8O_{16}P$
F.W.: 1177.28

Description: white amorphous powder
 ^{31}P -NMR: two peaks at 147.12 and 147.04 ppm (d_6 -DMSO)

Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg 650
500 mg 1250



SP15A-02
SP15A-05

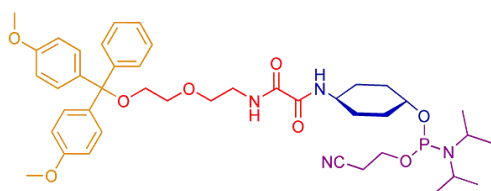
15A Spacer

Formula: $C_{44}H_{61}N_4O_7P$
F.W.: 788.9

Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 147.1 ppm (d_6 -DMSO)

Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg 200
500 mg 340



SP14A-02
SP14A-05

14A Spacer

Formula: $C_{42}H_{57}N_4O_8P$
F.W.: 776.9

Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 145.9 ppm (d_6 -DMSO)

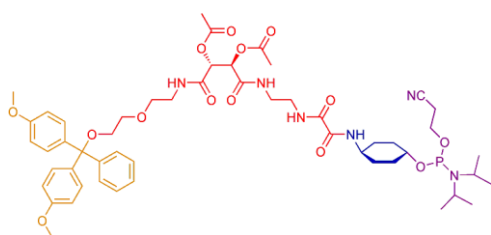
Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg 200
500 mg 340

Cleavable Spacer Phosphoramidites

Cleavable spacers extend the capabilities of normal spacers to allow for the chemical transformation produced by scission. They are used to introduce an internal linker which can subsequently be functionalized (cleaved) to form a new 5'-end of the oligonucleotide for the tethering of the oligo to a diagnostic probe. Alternatively, the oligo can be attached via the 5'-end to a solid support and subsequently be cleaved off.

These phosphoramidites exhibit increased stability in solution in comparison to other commercially available spacers made from primary aliphatic alcohols. Our cleavable spacers come in two flavors – disulfides and diols. Our diol spacers can be selectively cleaved using saturated aqueous $NaIO_4$ for 30-40 min. The disulfide spacers can be cleaved with dithiothreitol or any other appropriate reducing reagent. All of our spacers have the DMT protecting group, and thus, trityl monitoring and "trityl-on" oligonucleotide purification is still possible.



SPdiol22A-02
SPdiol22A-05

Diol 22A Spacer

Formula: $C_{52}H_{71}N_6O_{14}P$
F.W.: 1035.1

Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 145.06 ppm (d_6 -DMSO)

Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg 600
500 mg 950

CAT. NO

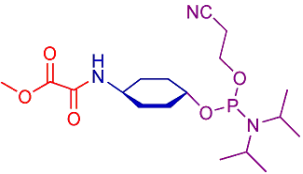
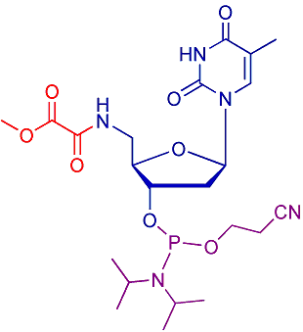
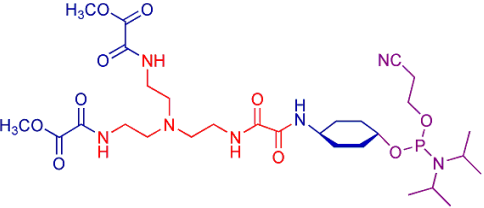
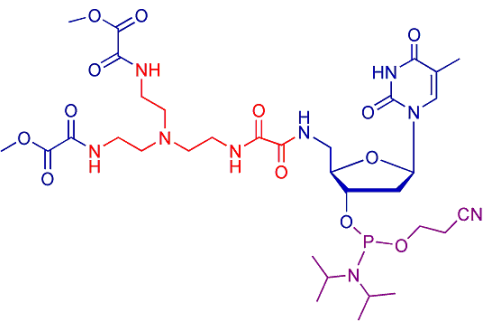
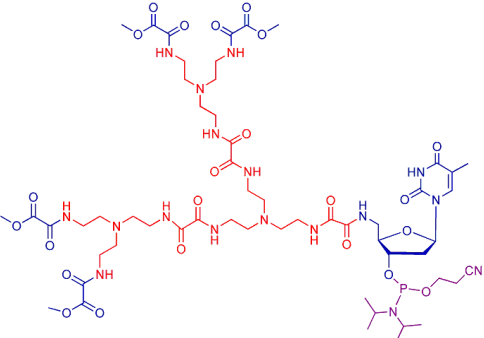
PRODUCT

QUANT.

PRICE, \$

Terminus (5'-End) MOX Modifier Phosphoramidites

Terminus MOX modifiers are introduced at the 5'-end of oligonucleotides and can be post-synthetically derivatized with either primary aliphatic amines, amino alcohols, hydroxide, or ammonia. Our terminus MOX modifiers come in two flavors – non-nucleosidic and thymidine based. They are available at different degrees of multiplicity with regard to the number of MOX groups incorporated onto the amidite.

	CAT.NO	PRODUCT	QUANT.	PRICE, \$
	MACH1-02	MOX ACH	250 mg	250
	MACH1-05	Formula: $C_{18}H_{32}N_3O_5P$ F.W.: 401.44 Description: white amorphous powder ^{31}P -NMR: sharp single peak at 143.3 ppm ($CDCl_3$) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 3 min	500 mg	450
	MOXT2-02	MOX T	250 mg	550
	MOXT2-05	Formula: $C_{22}H_{34}N_5O_8P$ F.W.: 527.51 Description: white amorphous powder ^{31}P -NMR: sharp single peak at 144.6 ppm ($CDCl_3$) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 3 min	500 mg	995
	MACH3-02	Dual MOX ACH	250 mg	500
	MACH3-05	Formula: $C_{29}H_{50}N_7O_{10}P$ F.W.: 687.72 Description: colorless oil ^{31}P -NMR: sharp single peak at 143.3 ppm ($CDCl_3$) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 3 min	500 mg	950
	2MOXT4-02	Dual MOX T	250 mg	750
	2MOXT4-05	Formula: $C_{33}H_{52}N_9O_{13}P$ F.W.: 813.79 Description: white amorphous powder ^{31}P -NMR: two peaks at 145.0 and 144.6 ppm ($CDCl_3$) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min	500 mg	1400
	4MOXT5-02	Quad MOX T	250 mg	995
	4MOXT5-05	Formula: $C_{55}H_{88}N_{17}O_{23}P$ F.W.: 1386.36 Description: white amorphous powder ^{31}P -NMR: two peaks at 149.8 and 149.3 ppm ($CDCl_3$) Packing conditions: under argon Recommended coupling conditions: 0.2 M acetonitrile solution, 15 min	500 mg	1885

Biotin Phosphoramidites

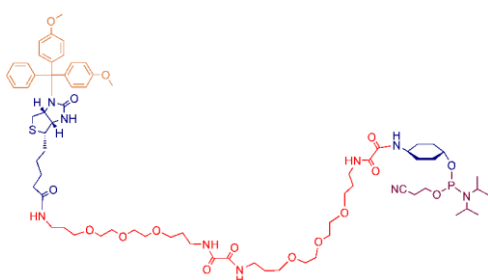
Biotin phosphoramidites with increased stability in solution are convenient for the introduction of a biotin internally or at the 5'-end of an oligonucleotide.

DMT-Biotin-Arm34-ACH, **DMT-Biotin-Arm17-ACH**, and **DMT-Biotin-Arm17-T** can be added singly at the 5'-end of the oligonucleotide. **Biotin-Amino-propanediol-DMT** and **5'-DMT-2'-Biotin-Arm19- 2'-dU** can be added internally and sequentially to make highly biotinylated oligonucleotides for applications demanding fast binding kinetics and increased stability of the biotin-streptavidin complex. Furthermore, **5'-DMT-2'-Biotin-Arm19- 2'-dU** (a biotin-modified uridine analog) can be used internally for oligoribonucleotides or, in place of thymidine, for oligodeoxyribonucleotides without altering the hybridization properties of the oligonucleotide.

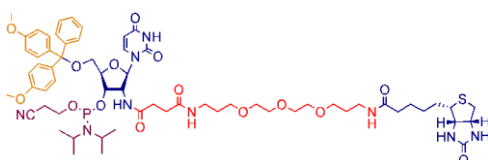
A special investigation conducted by Southern lab has shown that optimal spacer for immobilized oligos should have a low charge density and a length exceeding 40 atoms in length, giving up to 150-fold increase in the yield of hybridisation. At that time, it was impossible to make an optimal 40 atoms spacer without any charged atoms. The spacer arms of our new super-long biotin amidites are designed to meet these criteria. They are non-charged and have up to 40 atoms between biotin and the closest negative charge on phosphate. They also have optimal rigidity and flexibility.

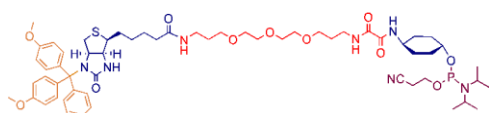
Our longest arm amidite, **DMT-Biotin-Arm34-Ach**, is ideal for making large biotinylated DNA fragments where steric hindrance may otherwise reduce its streptavidin binding capacity. In addition, the long arm maximizes the density of the biotinylated oligonucleotides on the streptavidin coated matrices and allows nucleic acid processing enzymes to function efficiently at the surface. Applications where long arm spacers for biotin-modified oligos may be important include:

- cDNA enrichment/screening procedures involving magnetic bead capture;
- streptavidin affinity capture and/or chromatography for large DNA fragments;
- modifying the elution efficiencies of biotinylated oligos (RNA and DNA) bound to streptavidin agarose;
- solid-phase DNA sequencing;
- all of our biotin amidites have the DMT protecting group, and thus, trityl monitoring and "trityl-on" oligonucleotide purification is possible.



CAT. NO	PRODUCT	QUANT.	PRICE, \$
Bt34Ach-02	DMT-Biotin-Arm34-ACH	250 mg	650
Bt34Ach-05	Formula: C ₇₂ H ₁₁₀ N ₉ O ₁₆ PS F.W.: 1392.68 Description: white amorphous powder ³¹ P-NMR: sharp single peak at 144.75 ppm (d ₆ -DMSO) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min with tetrazole or 5-ethylthio-1H-tetrazole	500 mg	950
Bt19AU-02	5'-DMT-2'-Biotin-Arm19-2'-dU	250 mg	950
Bt19AU-05	Formula: C ₆₃ H ₈₈ N ₉ O ₁₅ PS F.W.: 1274.46 Description: white amorphous powder ³¹ P-NMR: two peaks at 148.78 and 146.92 ppm (d ₆ -DMSO) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 10 min with 5-ethylthio-1H-tetrazole	500 mg	1500



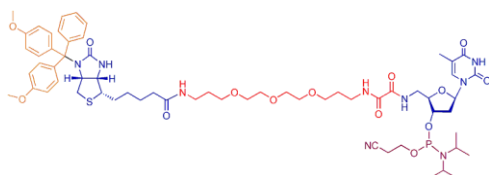


Bt17Ach-02
Bt17Ach-05

DMT-Biotin-Arm17-Ach

Formula: $C_{60}H_{88}N_7O_{11}PS$
F.W.: 1118.37
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 144.75 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg
500 mg
600
950

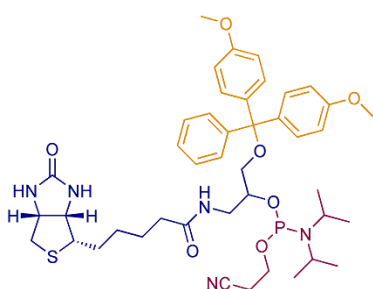


Bt17AT-02
Bt17AT-05

DMT-Biotin-Arm17-T

Formula: $C_{64}H_{90}N_9O_{14}PS$
F.W.: 1272.49
Description: white amorphous powder
 ^{31}P -NMR: two peaks at 147.28 and 147.25 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg
500 mg
750
1200



BtApdDMT-02
BtApdDMT-05

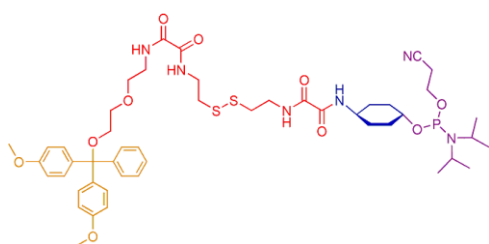
Biotin-Amino-propanediol-DMT

Formula: $C_{45}H_{62}N_5O_7PS$
F.W.: 848.04
Description: white amorphous powder
Packing conditions: under argon
Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min

250 mg
500 mg
400
700

5'-Thiol Phosphoramidites

5'-Thiol Phosphoramidites are disulfide spacers can be cleaved with dithiothreitol or any other appropriate reducing reagent. All of our spacers have the DMT protecting group, and thus, trityl monitoring and "trityl-on" oligonucleotide purification is still possible.

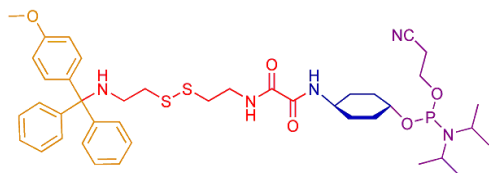


SPSS24A-02
SPSS24A-05

SS24A 5'-Thiol Spacer

Formula: $C_{48}H_{67}N_6O_{10}PS_2$
F.W.: 983.2
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 146.02 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions: 0.1 M tetrahydrofuran solution, 5 min

250 mg
500 mg
900
1450



ALSS14A-02
ALSS14A-05

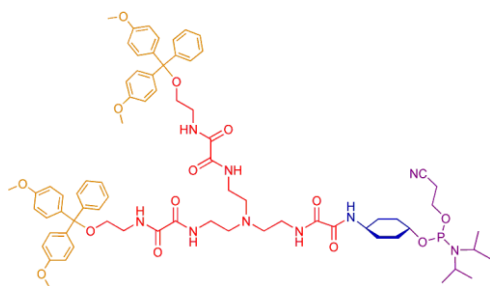
ALSS14A 5'-Thiol Amidite

Formula: $C_{41}H_{56}N_5O_5PS_2$
F.W.: 794.02
Description: white amorphous powder
 ^{31}P -NMR: sharp single peak at 147.4 ppm (d_6 -DMSO)
Packing conditions: under argon
Recommended coupling conditions: 0.1 M tetrahydrofuran solution, 5 min

250 mg
500 mg
800
1250

Branching Unit Phosphoramidites

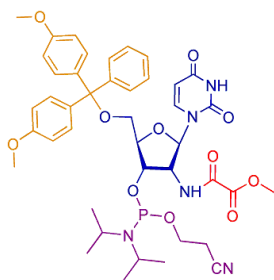
Our branching unit phosphoramidites are convenient for the introduction of a junction point internally or at the 5'-end of an oligonucleotide. They can be added singly or sequentially to make highly branched oligonucleotides. Our branching unit amidites have the DMT protecting group, and thus, trityl monitoring and "trityl-on" oligonucleotide purification is possible. For a single incorporation of a branching unit a 5 min coupling is necessary to ensure high yield. For a second and third incorporation of branching units a 20 min coupling time and adequately increased total amounts of amidites are needed to ensure optimum yield.



CAT. NO	PRODUCT	QUANT.	PRICE, \$
BU11-02	Branching Unit 11	250 mg	395
BU11-05	Formula: C ₇₃ H ₉₂ N ₉ O ₁₄ P F.W.: 1350.54 Description: white amorphous powder ³¹ P-NMR: sharp single peak at 143.3 ppm (CDCl ₃) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 5 min	500 mg	675

2'-MOX Precursor Phosphoramidites

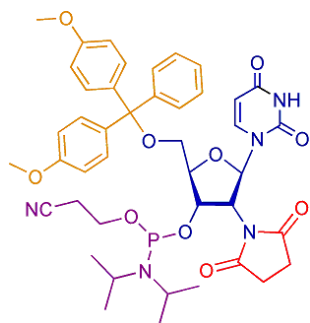
These MOX precursor phosphoramidites are introduced at the 5'-end or internally in an oligonucleotide, and as in the case of the terminus MOX modifiers, the oligo can be post-synthetically derivatized with either primary aliphatic amines, amino alcohols, hydroxide, or ammonia. Since there are many commercially available primary aliphatic amines, this strategy not only enables the formation of adducts containing user-desired functionalities, but also allows the same parent oligonucleotide to be used to construct a vast number of differently modified products. One key advantage of the 2'-MOX precursors lies in being able not only to incorporate the monomer multiple times within the oligo, but also placing the precursor at any position other than at the 3'-end.



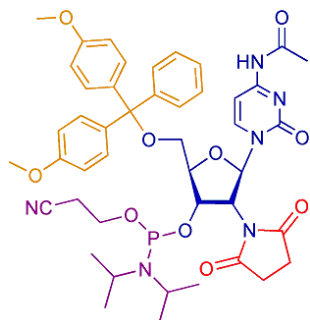
CAT. NO	PRODUCT	QUANT.	PRICE, \$
MU-02	2'-MOX-2'-dU	250 mg	500
MU-05	Formula: C ₄₂ H ₅₀ N ₅ O ₁₁ P F.W.: 831.85 Description: white amorphous powder ³¹ P-NMR: sharp single peak at 143.3 ppm (CDCl ₃) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 15 min with 5-ethylthio-1H-tetrazole	500 mg	900

2'-SUC Precursor Phosphoramidites

The 2'-SUC (2'-succinimido) precursor phosphoramidites are introduced at the 5'-end or internally in an oligonucleotide, and as in the case of our MOX modifiers, the oligo can be post-synthetically derivatized with either primary aliphatic amines, amino alcohols, hydroxide, or ammonia. Since there are many commercially available primary aliphatic amines, this strategy not only enables the formation of adducts containing user-desired functionalities, but also allows the same parent oligonucleotide to be used to construct a vast number of differently modified products. As with 2'-MOX precursors, 2'-SUC precursors can be incorporated multiple times within the oligo at any position other than at the 3'-end.

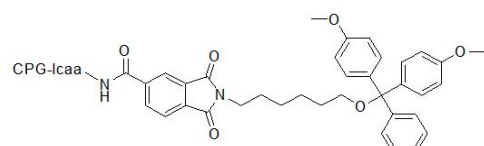


CAT. NO	PRODUCT	QUANT.	PRICE, \$
SU-02	2'-SUC-2'-dU	250 mg	550
SU-05	Formula: C ₄₃ H ₅₀ N ₅ O ₁₀ P F.W.: 827.86 Description: white amorphous powder ³¹ P-NMR: sharp single peak at 143.3 ppm (CDCl ₃) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 15 min with 5-ethylthio-1H-tetrazole	500 mg	995

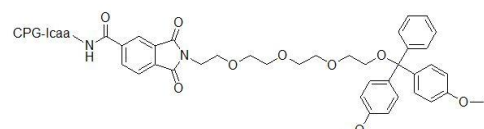


SC-02	2'-SUC-2'-dC ^{Ac}	250 mg	750
SC-05	Formula: C ₄₅ H ₅₃ N ₆ O ₁₀ P F.W.: 868.91 Description: white amorphous powder ³¹ P-NMR: two peaks at 150.22 ppm and 153.01 ppm (d ₆ -DMSO) Packing conditions: under argon Recommended coupling conditions: 0.1 M acetonitrile solution, 15 min with 5-ethylthio-1H-tetrazole	500 mg	1395

3'-Amino-Modifier CPG



CAT. NO	PRODUCT	QUANT.	PRICE, \$
PT-C6-01	Pthalamido C6 Linker Icaa CPG	100 mg	50
PT-C6-10	Solid Support Type: Controlled Pore Glass, 500 Å Freezer storage, -10 to -20°C, dry Recommended cleavage/deprotection conditions: ethanol amine/H ₂ O=1/1, 70°C, 30 min or AMA, 70°C, 20 min	1000 mg	350



PT-TEG-01	Pthalamido TEG Linker Icaa CPG	100 mg	70
PT-TEG-10	Solid Support Type: Controlled Pore Glass, 500 Å Freezer storage, -10 to -20°C, dry Recommended cleavage/deprotection conditions: ethanol amine/H ₂ O=1/1, 70°C, 30 min or AMA, 70°C, 20 min.	1000 mg	550

PHI29 RANDOM PRIMER

Product Description

Phi29 Random Hexamer Primer is ready-to-use in strand displacement amplification of genomic DNA, plasmids, BACs, fosmids or phages. Phi29 Primer contains modified nucleotides that are resistant to 3'-5' exonuclease activity. We have developed proprietary purification procedure to ensure removal of DNA polymerase inhibitors. The concentration of Phi29 Random Hexamer Primer is optimized for amplification with Phi29 DNA Polymerase.

A method for the cell-free cloning of single DNA molecules without propagation in bacteria using phi29 DNA polymerase and our exonuclease-resistant Phi29 Random Hexamer Primer mix was developed by Clyde A. Hutchison, III, Hamilton O. Smith, Cynthia Pfannkoch, and J. Craig Venter (Synthetic Biology Group, The J. Craig Venter Institute) and published in PNAS.



CAT. NO	PRODUCT	SIZE	PRICE, \$
R016	Phi29 Random Primer	100 µL	60
R106		1000 µL	410
R006		10×1000 µL	1590

CUSTOM OLIGONUCLEOTIDE SYNTHESIS

We are pleased to offer custom synthesis of affordable, high-quality non-vanilla oligonucleotides. Generally, we can make all modifications for those the corresponding phosphoramidites or NHS-esters are commercially available. Besides, we have a unique selection of "in-house" monomers (amino linkers, spacers, cleavable spacers, biotin containing, etc.) that can be incorporated either at the 5'- or 3'-terminal ends and internally within the oligo. Our proprietary MOX/SUC chemistries assure maximum versatility in the design and overall physical properties of the linkers and spacers attached to the oligonucleotides. The oligonucleotides can be individually tailored to meet your requirements in terms of length, flexibility, hydrophobicity, charge density and multiplicity of the tethers. A full range of modifications and possible applications for custom oligonucleotides is outlined below.

2' Amino Modified Oligonucleotides

We offer 2'-amino modified oligonucleotides through the use of our SUC/MOX precursor strategy. By using this methodology we can incorporate amino-modifiers internally within the oligonucleotide. The length and physical properties of the tether can be chosen from a wide selection of primary aliphatic diamines to meet your particular requirements.

💡 RNA folding kinetics • Facile post-synthetic modifications

5' Amino Modified Oligos

Amino-modified oligonucleotides have been routinely employed in solid support and label (or functionality) attachment chemistries. The 5'-terminus of the oligonucleotide is normally the target end for modification because of the ease of incorporation as the last step in automated synthesis. For several applications factors, such as sterics, electrostatic repulsion, binding kinetics and hybridization efficiency, require a longer distance between the oligo and the point of attachment. This is why our 5'-amino linkers are available in a variety of tethering arms, based on their length, charge density, hydrophobicity, flexibility, and multiplicity of amino groups on the tether. You can also create your own tether or a library of oligonucleotides with a differently tethered functionality to satisfy your particular needs.

💡 DNA arrays • Solid-phase PCR • Linkers of Triplex forming oligonucleotides (TFO)

Biotinylated Oligos

Biotin is widely used for DNA/RNA detection/isolation due to the extremely high affinity of the biotin-streptavidin interaction (dissociation constant 10^{-15} M). Biotin moieties can be incorporated within an oligo on any place and in any number. We have long and super-long tethering arms covalently attached to biotin for improved binding kinetics, increased binding capacity of large DNA fragments, and for accessibility to enzymatic events occurring at the solid-phase surface.

💡 Oligomeric Nanostructures • cDNA/screening procedures • Biotinylated molecular beacon probes

Branched Oligos

We can easily synthesize oligonucleotides having a high number of covalently attached functional groups. By increasing the number of functionalities (reactive groups) on the oligo it is possible to improve the immobilization efficiency of DNA on to chips (Raddatz et al., Nucleic Acids Res., 2002, 30, 4793). Using our MOX/SUC precursor chemistries we are able to design 4, 8, 16, etc functionalities, on the 5'- or 3'-end, or attached through the 2'-position of ribose.

💡 Increasing the catalytic potential of nucleic acids • Dendrimeric oligonucleotides

Custom RNA Synthesis

High purity RNA can be synthesized using standard monomers with established 2'-O-TOM protecting groups. Custom RNA has successfully been used in antisense and RNA interference technologies. Furthermore, we can modify the RNA at the 5'- or 3'-ends and within the oligo at the 2'-position of C and U if desired. Please contact us for more details or to request a quote.

Fimers

Fimers are primers with proprietary chemical modifications made by **Fidelity Oligos LLC** that inhibit unwanted reactions during cycle sequencing (e.g., primer-dimer artifacts and non-specific PCR). Specially designed Fimers have been routinely and successfully used for high throughput sequencing of difficult templates and highly sensitive reactions from minimal amount of templates (Polushin et al., *Nucleosides Nucleotides Nucleic Acids*, 2001 20, 507-14).

Multi Labeled Oligos

Complex probes can be made to suit your assay design. A combination of two or more different fluorescent dyes and other reporter groups can be incorporated on the oligonucleotide. Please contact us for more details, or to request a quote.

Phosphorothioates

We can synthesize oligonucleotides used for antisense and antigene applications. Please contact us for more details or to request a quote.

Pteridine Probes

The highly fluorescent pteridine-based nucleoside analog probes share some unique structural features causing them to behave quite differently from standard linker arm-attached fluorophores. The properties defined below render them exquisitely sensitive to changes in their immediate environment. As a result of this sensitivity these probes can be used in a variety of applications for the study of DNA interactions.

A major feature of these probes is that they are designed as structural analogs to guanosine or adenosine and they exhibit very high fluorescence quantum yields. Like native nucleosides, they attach to the oligonucleotide through a deoxyribose linkage and, since they are produced as phosphoramidites, they can be site-specifically incorporated into DNA using automated DNA synthesis.

The deoxyribose attachment positions the probe within the oligonucleotide and dramatically increases fluorescence sensitivity to effects from adjacent bases as compared to linker-attached fluorophores.

5' Thiol Modified Oligonucleotides

5'-Thiol oligonucleotides are normally used in covalent attachment to a gold particle or film and in immobilization through p-maleimidophenyl isocyanate to a solid surface (Nicewarner Peña et al., *JACS*, 2002, 25, 7314, Peterson et al., *Nucleic Acids Res.*, 2001, 24, 5163, Adessi et al., *Nucleic Acids Res.*, 2000, 20, e87). The length of the tether holding the thiol moiety can be varied to space the oligonucleotide away from the surface to overcome steric interference.

FLUORESCENT DYE PHOSPHORAMIDITES

FIDELITY OLIGOS LLC offers various dye-based phosphoramidites designed to produce fluorescent labeled oligonucleotides in automated solid-phase synthesis. They are based on FAM , JOE , TET , HEX , TAMRA , R6G  and Cy  dyes, which emit light in visible spectrum and allow subsequent detection of oligonucleotides in various biological applications.

Typically, phosphoramidites are used to introduce a label into 5'-end of oligonucleotides. This step terminates the synthesis and doesn't allow to elongate the chain further. The desired product is then deprotected and purified by HPLC or other means.

For most of our fluorescent dye phosphoramidites we offer a **PRO version** of the reagent which includes 4,4'-dimethoxytrityl (DMT or DMTr) group. These reagents can be used to introduce the label into the internal position of the chain, to quantitate the efficiency of the coupling or to purify the desired oligonucleotide while the DMTr group is still on. These oligonucleotides can be efficiently purified using reverse-phase (RP) cartridges, and their purification is further optimized and enhanced through high-performance liquid chromatography (HPLC), which provides superior resolution and separation of the desired product from impurities.

Some of our fluorescent dye phosphoramidites include a **flexible** linker; the others are based on a **rigid** linker. This difference can be important for the photophysical properties of the product. In our research, we've found that the linker may influence the quantum yield of the labeled oligonucleotide.

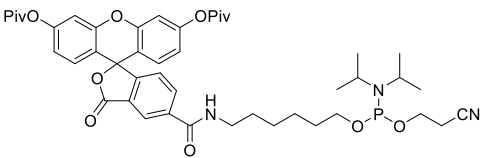
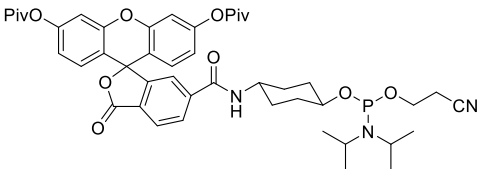
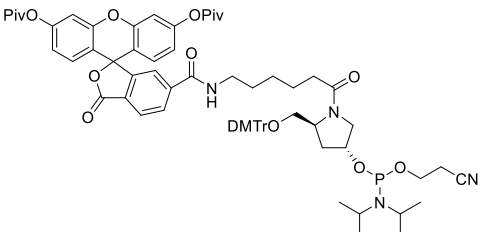
Fluorescent dye labels are also available in the CPG* form. See p. 33.

Fluorescent dye	Abs max	Em max	Pro	Flexible	Rigid
Fluorescein	494	525	•	•	•
JOE	520	548	•	•	•
TET	522	538	•		
HEX	535	556	•		
TAMRA	565	580	•		
R6G	530	550			•
ROX	580	605	•		
Cyanine	546 to 683	563 to 707	•		

* Polystyrene supports are available on request

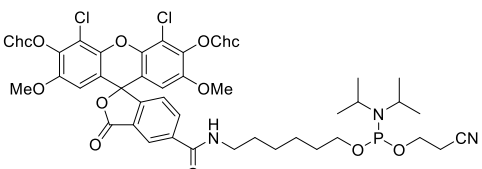
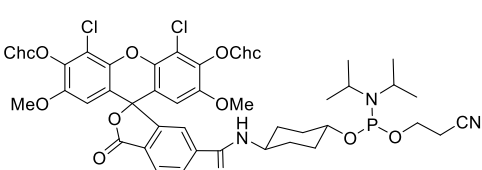
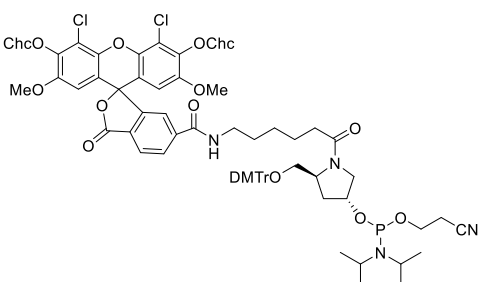
Fluorescein Phosphoramidites

Carboxyfluorescein (FAM) is the most used fluorescent dye for labeling oligonucleotides. FAM (in pair with BHQ-1 ►) plays a particularly important role as a reporter in real-time PCR.

CAT. NO	PRODUCT	QUANT.	PRICE, \$
	5-FAM Phosphoramidite	100 mg	100
	CAS 147566-42-5 • C ₄₆ H ₅₈ N ₃ O ₁₀ P	200 mg	130
	FW 843.9 • MC 552.5	1000 mg	260
	[i] Flexible linker. 6-FAM isomer is available on request.		
	6-FAM Phosphoramidite	100 mg	100
	CAS 952290-59-4 • C ₄₆ H ₅₆ N ₃ O ₁₀ P	200 mg	130
	FW 841.9 • MC 535.4	1000 mg	260
	[i] Rigid linker.		
	6-FAM Pro Phosphoramidite	100 mg	100
	CAS 959470-55-4 • C ₇₂ H ₈₃ N ₄ O ₁₄ P	200 mg	130
	FW 1259.4 • MC 650.6	1000 mg	260
	[i] Pro linker allows internal labeling and label quantification. Also available as a nucleosidic phosphoramidite (100c) ►		

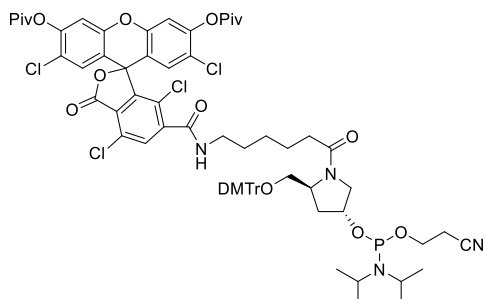
JOE Phosphoramidites

4',5'-Dichloro-2',7'-dimethoxyfluorescein (JOE) is a fluorescein derivative used for labeling primers and qPCR probes (in pair with BHQ-1 ►). It has emission maximum at 548 nm and allows taking advantage of the multi-color detection. We offer both 5-JOE and 6-JOE isomers as phosphoramidite reagents.

CAT. NO	PRODUCT	QUANT.	PRICE, \$
	5-JOE Phosphoramidite	100 mg	200
	CAS 1353002-88-6 • C ₅₂ H ₆₄ Cl ₂ N ₃ O ₁₂ P	200 mg	290
	FW 1025.0 • MC 664.1	1000 mg	590
	[i] Flexible linker.		
	6-JOE Phosphoramidite	100 mg	200
	CAS 1353002-87-5 • C ₅₂ H ₆₂ Cl ₂ N ₃ O ₁₂ P	200 mg	290
	FW 1023.0 • MC 662.0	1000 mg	590
	[i] Rigid linker was shown to be superior to the flexible linker, making quantum yield to be higher and less sequence dependent (J. Org. Chem., 2012, 77, 977. DOI).		
	6-JOE Pro Phosphoramidite	100 mg	200
	C ₇₈ H ₈₉ Cl ₂ N ₄ O ₁₆ P	200 mg	290
	FW 1509.3 • MC 777.1	1000 mg	590
	[i] Pro linker allows internal labeling and label quantification.		

TET Phosphoramidite

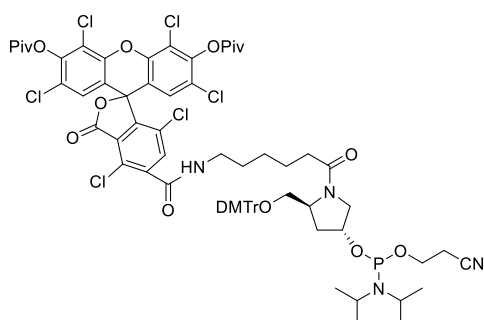
TET phosphoramidite contains a TET dye molecule (tetrachlorofluorescein) with absorption maximum at 522 nm and emission maximum at 538 nm. TET phosphoramidite can be used for labeling primers and qPCR probes (in pair with BHQ-1 [▶](#)).



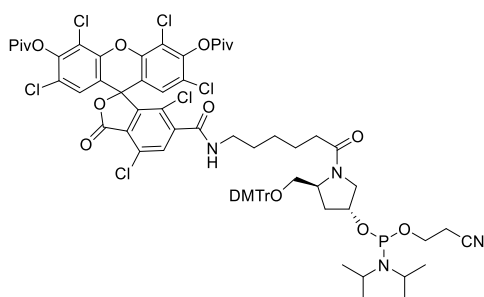
CAT. NO	PRODUCT	QUANT.	PRICE, \$
1129	6-TET Pro Phosphoramidite	100 mg	100
	C ₇₄ H ₈₁ Cl ₄ N ₂ O ₁₄ P	200 mg	170
	FW 1395.2 • MC 788.3	1000 mg	460
	Pro linker allows internal labeling and label quantification.		

HEX Phosphoramidites

HEX phosphoramidites contain a HEX dye molecule (hexachlorofluorescein) with absorption maximum at 535 nm and emission maximum at 556 nm. HEX phosphoramidites can be used for labeling primers and qPCR probes (in pair with BHQ-1 [▶](#)).



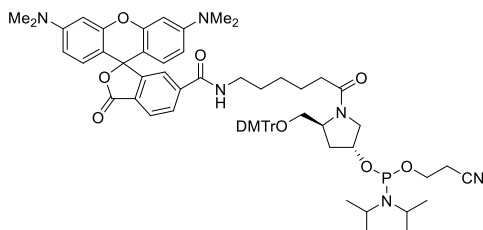
CAT. NO	PRODUCT	QUANT.	PRICE, \$
111c	5-HEX Pro Phosphoramidite	100 mg	200
	C ₇₂ H ₇₇ Cl ₆ N ₄ O ₁₄ P	200 mg	290
	FW 1466.1 • MC 857.2	1000 mg	590
	Pro linker allows internal labeling and label quantification.		



112b	6-HEX Pro Phosphoramidite	100 mg	200
	C ₇₂ H ₇₇ Cl ₆ N ₄ O ₁₄ P	200 mg	290
	FW 1466.1 • MC 857.2	1000 mg	590
	Pro linker allows internal labeling and label quantification.		
	Also available as a nucleosidic phosphoramidite (100d) ▶		

TAMRA Phosphoramidite

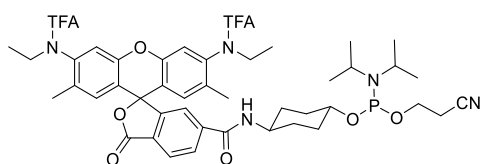
This phosphoramidite is based on a tetramethyl rhodamine dye with emission maximum at 580 nm. TAMRA plays an important role in both real-time PCR applications and as a FRET acceptor in pair with FAM [▶](#). FAM is excited at 494 nm and transfers energy to TAMRA, which then emits light at 580 nm.



CAT. NO	PRODUCT	QUANT.	PRICE, \$
111b	6-TAMRA Pro Phosphoramidite	100 mg	200
	C ₆₆ H ₇₇ N ₆ O ₁₀ P	200 mg	330
	FW 1145.3 • MC 703.3	1000 mg	650
	i Pro linker allows internal labeling and label quantification. The reagent is readily soluble in acetonitrile. TAMRA is not stable under basic conditions and requires non-standard deprotection methods.		

R6G Phosphoramidite

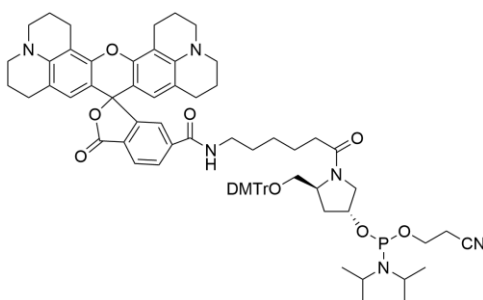
R6G phosphoramidite contains a rhodamine 6G dye with absorption maximum at 530 nm and emission maximum at 550 nm. R6G phosphoramidite can be used for labeling qPCR probes (in pair with BHQ-1 [▶](#)).



CAT. NO	PRODUCT	QUANT.	PRICE, \$
1124	6-R6G Phosphoramidite	100 mg	200
	C ₄₆ H ₅₂ F ₆ N ₅ O ₈ P	200 mg	290
	FW 947.9 • MC 633.6	1000 mg	590
	i Rigid linker.		

ROX Phosphoramidite

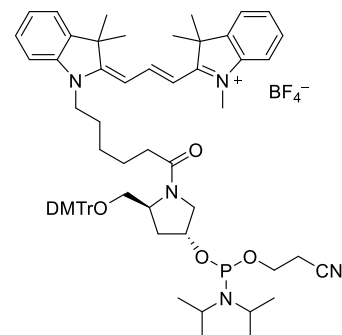
ROX phosphoramidite features the 6-carboxy-X-rhodamine (6-ROX) fluorophore, known for its strong red-orange emission (~600 nm), making it ideal for multiplexed assays where spectral separation is crucial. The Pro linker enables both 5'-end and internal modifications.



CAT. NO	PRODUCT	QUANT.	PRICE, \$
1147	6-ROX Pro Phosphoramidite	50 mg	400
	C ₇₄ H ₈₅ N ₆ O ₁₀ P	200 mg	1120
	FW 1249.5 • MC 808.3	1000 mg	3120
	i Pro linker allows internal labeling and label quantification.		

Cyanine Phosphoramidites

Cyanine phosphoramidites are based on four cyanine dyes: Cy3, Cy3.5, Cy5 and Cy5.5, all of which belong to the polymethine dye family. Cyanine phosphoramidites can be used for labeling primers and qPCR probes (Cy3 and Cy3.5 are usually paired with BHQ-2 [▶](#); Cy5 and Cy5.5 are usually paired with BHQ-3 [▶](#)).



1137

By-3 Pro Phosphoramidite

$C_{65}H_{81}N_5O_6PBF_4$
FW 1146.2 • MC 617.3

i Pro linker allows internal labeling and label quantification.

Abs max 550 nm, em max 570 nm.

100 mg

PRICE, \$

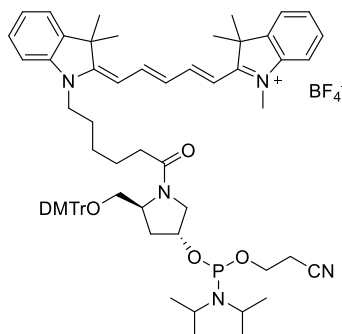
200 mg

200

1000 mg

330

650



1139

By-5 Pro Phosphoramidite

$C_{67}H_{83}N_5O_6PBF_4$
FW 1172.2 • MC 643.3

i Pro linker allows internal labeling and label quantification.

Abs max 649 nm, em max 670 nm.

100 mg

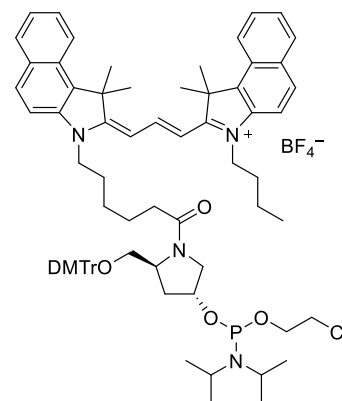
200

200 mg

330

1000 mg

650



1138

By-3.5 Pro Phosphoramidite

$C_{76}H_{91}N_5O_6PBF_4$
FW 1288.4 • MC 759.4

i Pro linker allows internal labeling and label quantification.

Abs max 588 nm, em max 604 nm.

100 mg

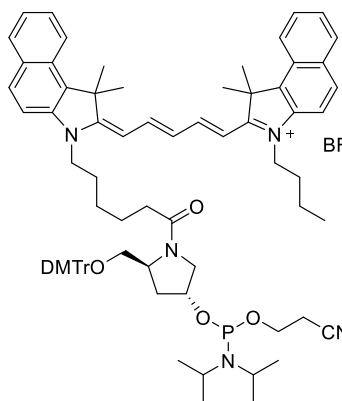
200

200 mg

330

1000 mg

650



113a

By-5.5 Pro Phosphoramidite

$C_{78}H_{93}N_5O_6PBF_4$
FW 1314.4 • MC 785.4

i Pro linker allows internal labeling and label quantification.

Abs max 675 nm, em max 694 nm.

100 mg

200

200 mg

330

1000 mg

650

QUENCHER PHOSPHORAMIDITES

The availability of a diverse range of fluorescent dyes and quencher molecules has enabled the creation of various real-time PCR assay systems that rely on dye-quencher hybridization probes. These probes generate a fluorescent signal only upon binding to their specific target nucleic acids.

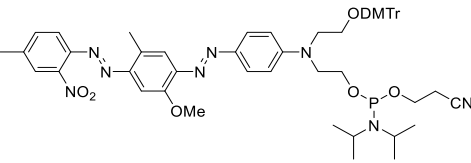
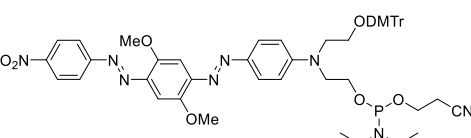
To design an effective assay for specific targets, it is crucial to thoughtfully choose the appropriate dye and quencher based on factors such as the type of hybridization probe, the number of targets to be detected, and the equipment available for conducting the assay.

FIDELITY OLIGOS LLC offers a range of quencher phosphoramidites which can be used to introduce the label into 5'-position of the probe. These are BHQ-1, BHQ-2, BBQ-650 phosphoramidites and IOWA phosphoramidites. We also provide our quenchers as a CPG supports which allow 3'-labeling ►.

You can also choose to introduce the quencher post-synthetically. We offer a range of functional quencher reagents, including azides ►, alkynes ►, NHS esters ► and BCN derivatives ►.

BHQ Phosphoramidites

BHQ dyes are effective quenchers which have excellent coupling efficiencies, large extinction coefficients and don't exhibit any fluorescence. They are used to quench a number of popular fluorophores (Nucleic Acids Res., 2002, 30, E122. [DOI](#)).

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	1119	BHQ-1 Phosphoramidite CAS 374591-94-3 • C ₅₅ H ₆₃ N ₈ O ₈ P FW 995.1 • MC 553.2  Quenching range 480–580 nm. Also available as a nucleosidic phosphoramidite (100e) ►	100 mg 200 mg 1000 mg	330 460 1040
	111a	BHQ-2 Phosphoramidite CAS 374591-98-7 • C ₅₄ H ₆₁ N ₈ O ₉ P FW 997.1 • MC 555.1  Quenching range 550–670 nm.	100 mg 200 mg 1000 mg	330 460 1040

BBQ Phosphoramidites

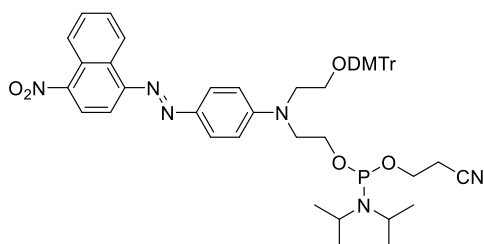
BlackBerry Quencher (BBQ-650) exhibits a broad absorption profile from 550nm to 750nm, centered at 650nm. This allows more effective quenching of long wavelength dyes like TAMRA and Cy dyes.

CAT. NO	PRODUCT	QUANT.	PRICE, \$
1144	BBQ-650 Pro Phosphoramidite	100 mg	330
	C ₇₁ H ₈₇ N ₁₀ O ₁₂ P	200 mg	460
	FW 1303.51 • MC 861.9	1000 mg	1040
	 Quenching range 550–750 nm.		

Iowa Black Phosphoramidites

Iowa Black quenchers are effective with a wide range of fluorophores and stable under various conditions, including basic environment and heat. Iowa Black FQ with peak absorbance at 531 nm is typically used with fluorescein and analogous dyes. Iowa Black RQ with peak absorbance at 656 nm can be paired with Cy5 and other dyes which emit in the red spectral range.

Iowa Black function can also serve as a hydrophobic handle which allows purification by HPLC or reversed phase methods.



113f

Iowa Black FQ Phosphoramidite

100 mg

390

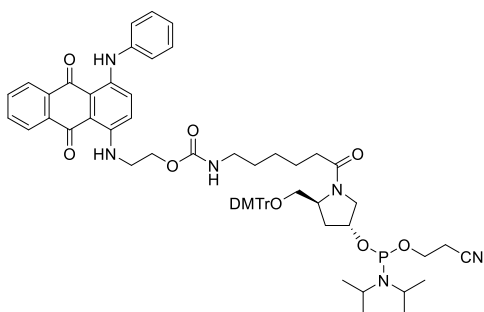
200 mg 590

CAS 852203-68-0 • C₅₀H₅₅N₆O₇P
FW 883.0 • MC 441.1

1000 mg 1300

[i] Quenching range 420–620 nm.

Also available as a nucleosidic phosphoramidite (1012) ►



1140

Iowa Black RQ Pro Phosphoramidite

100 mg

390

200 mg 590

C₆₄H₇₃N₆O₁₀P
FW 1117.3 • MC 675.2

1000 mg 1300

[i] Quenching range 500–700 nm. Pro linker allows internal labeling and label quantification.

Also available as a nucleosidic phosphoramidite (1013) ►

FUNCTIONAL PHOSPHORAMIDITES

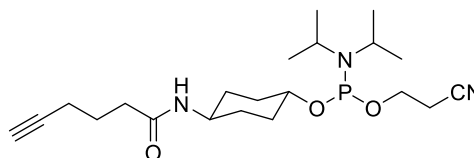
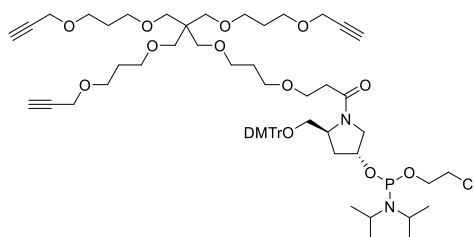
FIDELITY OLIGOS LLC offers a range of functional phosphoramidites which allow automatic introduction of various functional groups into synthetic oligonucleotides. Typically, phosphoramidites serve to modify the 5'-position of the oligonucleotides. However, those products which belong to the PRO line or have a DMTr group can be incorporated into oligonucleotides internally.

Our functional phosphoramidites include alkyne, amine, biotin, lipid, thiol and other phosphoramidites, as well as doublers, treblers and spacers of various length.

For other functional reagents, please check our CPG page [▶](#) and bioconjugation page [▶](#).

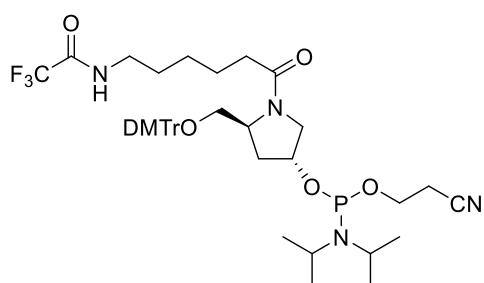
Alkyne Phosphoramidites

Alkyne phosphoramidites allow introduction of alkyne group into 5'-position of the oligonucleotide or internal modification with the alkyne group. Alkyne then serves as an anchor group for subsequent click modification with various fluorescent and non-fluorescent labels. For your convenience FIDELITY OLIGOS LLC offers Pro alkyne phosphoramidites, doubler and trebler alkyne phosphoramidites. Please, check also our BCN reagents which can be used in strain-promoted azide-alkyne cycloaddition (SPAAC), or copper-free click.

	CAT.NO	PRODUCT	QUANT.	PRICE, \$
	1111	Alkylacetylene Phosphoramidite ACH CAS 1417539-32-2 • C ₂₁ H ₃₆ N ₃ O ₃ P FW 409.5 • MC 271.3 i Readily soluble and easy-to-use crystalline solid.	100 mg 200 mg 1000 mg	160 220 460
	110b	Alkylacetylene Pro Phosphoramidite CAS 1357289-02-1 • C ₄₁ H ₅₂ N ₃ O ₆ P FW 713.8 • MC 272.1 i Pro linker allows internal labeling and label quantification.	100 mg 200 mg 1000 mg	160 220 460
	112c	Alkyne-Doubler Phosphoramidite CAS 2223630-43-9 • C ₅₃ H ₇₅ N ₂ O ₁₁ P FW 947.2 • MC 506.2	100 mg 200 mg 1000 mg	330 460 1040
	112d	Alkyne-Trebler Phosphoramidite CAS 2135330-70-8 • C ₃₅ H ₅₉ N ₂ O ₉ P FW 682.8 • MC 544.6	100 mg 200 mg 1000 mg	330 460 1040
	112e	Alkyne-Trebler Pro Phosphoramidite CAS 2223630-40-6 • C ₆₄ H ₉₀ N ₃ O ₁₄ P FW 1156.4 • MC 713.8 i Pro linker allows internal labeling and label quantification.	100 mg 200 mg 1000 mg	390 590 1300

Amine Phosphoramidites

Amine phosphoramidites serve to introduce the reactive amine group into the 5'- or internal position of the oligonucleotide. Both MMT or TFA protective groups in the reagents are cleaved during the last synthetic step or deblocking correspondingly and afford an unprotected amine for subsequent modification with various NHS reagents.



1118

Amino-modifier Pro Phosphoramidite

100 mg

160

200 mg

220

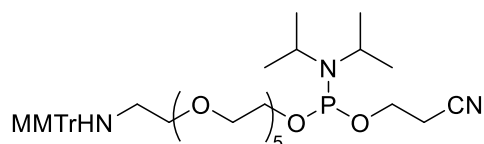
1000 mg

460

CAS 1644576-49-7 • C₄₃H₅₆F₃N₄O₇P
FW 828.9 • MC 292.1

i Pro linker allows internal labeling and label quantification.

Also available as a nucleosidic phosphoramidite (100b) [▶](#)



1141

Aminolinker-18 Phosphoramidite

100 mg

160

200 mg

220

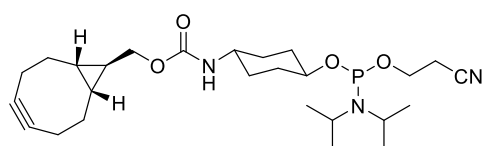
1000 mg

460

CAS 688349-99-7 • C₄₁H₆₀N₃O₈P
FW 753.9 • MC 343.3

BCN Phosphoramidites

Bicyclononyne group is a copper-free click chemistry probe which enables highly efficient and completely orthogonal bioconjugation with various azide molecules. FIDELITY OLIGOS LLC offers single isomer BCN reagents (typically exo isomer) but alternative isomer can be available on request.



1128

BCN Phosphoramidite ACH

100 mg

590

200 mg

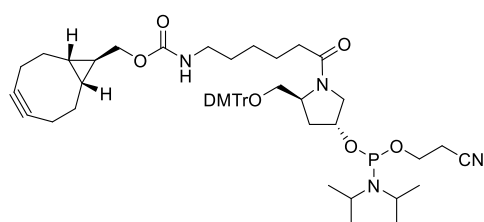
910

1000 mg

1950

C₂₆H₄₂N₃O₄P
FW 491.6 • MC 352.1

i Single isomer. Endo isomer is available on request.



113c

BCN Pro Phosphoramidite

100 mg

590

200 mg

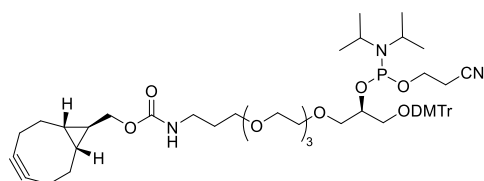
910

1000 mg

1950

C₅₂H₆₉N₄O₈P
FW 909.1 • MC 467.2

i Single isomer. Endo isomer is available on request. Pro linker allows internal labeling and label quantification.



1142

BCN (R)-Glycerol Phosphoramidite

100 mg

590

200 mg

910

1000 mg

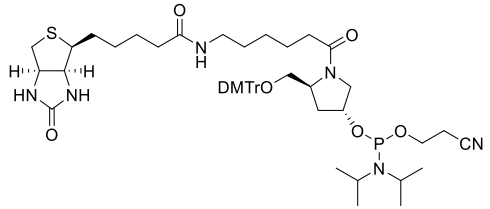
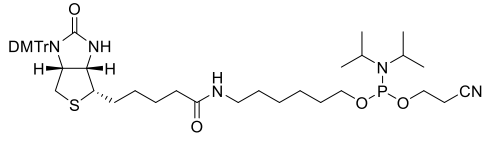
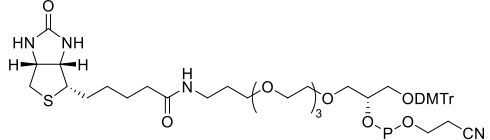
1950

C₅₃H₇₄N₃O₁₁P
FW 960.2 • MC 518.2

i Single isomer. Endo isomer is available on request.

Biotin Phosphoramidites

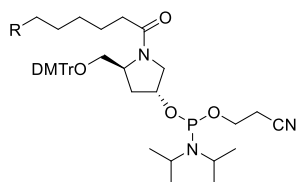
Biotin is widely used affine label which binds strongly to egg-derived avidin or bacteria-derived streptavidin. This unique ability defined the significance of the biotin label in biotechnology and analytical application. FIDELITY OLIGOS LLC offers several biotin phosphoramidites, including a Pro linker and a long TEG spacer.

	CAT.NO	PRODUCT	QUANT.	PRICE, \$
	110C	Biotin Pro Phosphoramidite CAS 2918763-05-8 • C ₅₁ H ₇₁ N ₆ O ₈ PS FW 959.2 • MC 517.2 <i>i</i> Pro linker allows internal labeling and label quantification.	100 mg 200 mg 1000 mg	160 220 460
	112a	DMT-Biotin Phosphoramidite CAS 135137-87-0 • C ₄₆ H ₆₄ N ₅ O ₆ PS FW 846.1 • MC 422.2	100 mg 200 mg 1000 mg	160 220 460
	1126	Biotin TEG Phosphoramidite CAS 198080-44-3 • C ₅₂ H ₇₆ N ₅ O ₁₁ PS FW 1010.2 • MC 568.2	100 mg 200 mg 1000 mg	160 220 460

Lipid Phosphoramidites

Therapeutic oligonucleotides need to be able to penetrate the cell membrane. Adding lipophilic groups to an oligonucleotide is a perspective way to improve membrane permeation. Cholesterol has been a label of choice for enhance the conjugate cellular uptake.

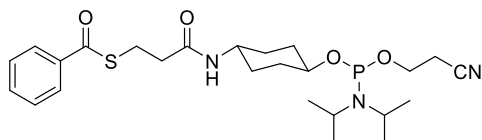
CAT. NO	PRODUCT	QUANT.	PRICE, \$
1125	Cholesterol Pro Phosphoramidite CAS 851912-63-5 • C ₆₉ H ₁₀₁ N ₄ O ₈ P FW 1145.6 • MC 703.5 Pro linker allows internal labeling and label quantification.	100 mg 200 mg 1000 mg	160 220 460
113e	Cholesterol TEG (DMT) Phosphoramidite CAS 873435-29-1 • C ₇₀ H ₁₀₆ N ₃ O ₁₁ P FW 1196.6 • MC 754.5	100 mg 200 mg 1000 mg	200 290 590
1145	Cholesterol TEG (DMT) Phosphoramidite (R) CAS 1799625-61-8 • C ₇₀ H ₁₀₆ N ₃ O ₁₁ P FW 1196.6 • MC 754.5	100 mg 200 mg 1000 mg	200 290 590
1135	Stearyl Phosphoramidite CAS 207273-84-5 • C ₂₇ H ₅₅ N ₂ O ₂ P FW 470.7 • MC 331.4 Various chain lengths are available.	100 mg 200 mg 1000 mg	100 130 260



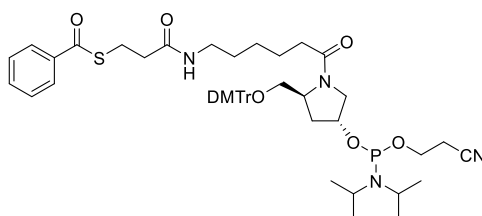
—	Lipid Pro Phosphoramidites	100 mg	160
	i Lipid phosphoramidites with variable chain lengths are available.	200 mg	220
		1000 mg	460

Thiol Phosphoramidites

Thiol phosphoramidites are designed to functionalize an oligonucleotide at 5'- or internal position for conjugation to the desired solid support (e. g. gold, glass) or specific functional groups such as maleimide or iodoacetate.



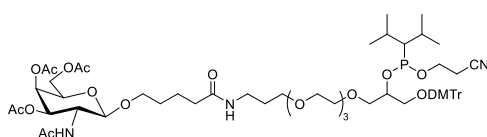
CAT. NO	PRODUCT	QUANT.	PRICE, \$
1133	S-Bz Thiol-Modifier Phosphoramidite ACH	100 mg	200
	C ₂₅ H ₃₈ N ₃ O ₄ PS	200 mg	290
	FW 507.6 • MC 264.1	1000 mg	590
	Also available as a nucleosidic phosphoramidite (100f) ▶		



1134	S-Bz Thiol-Modifier Pro Phosphoramidite	100 mg	200
	C ₅₁ H ₆₅ N ₄ O ₈ PS	200 mg	290
	FW 925.1 • MC 379.1	1000 mg	590
	i Pro linker allows internal labeling and label quantification.		

GalNAc Phosphoramidite

N-Acetylgalactosamine (GalNAc) is an amino sugar derivative of galactose used as a targeting ligand in investigational antisense oligonucleotides and siRNA therapies targeted to the liver, where it binds to the asialoglycoprotein receptors on hepatocytes.

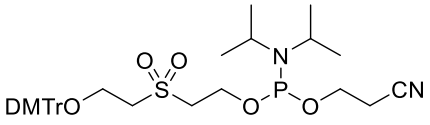
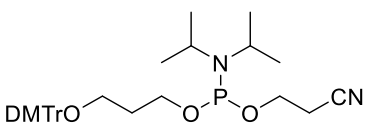
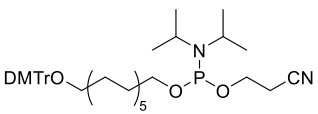
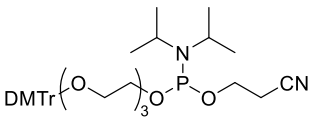
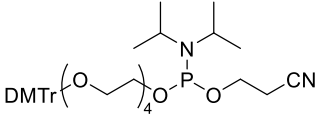
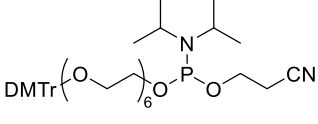
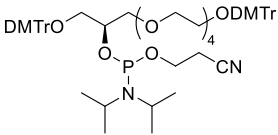
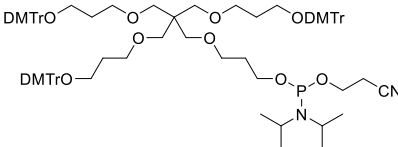
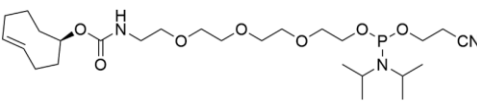
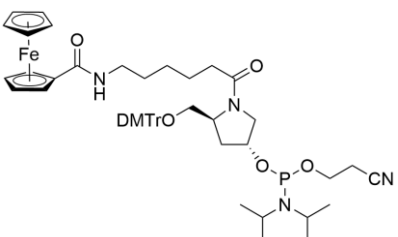


CAT. NO	PRODUCT	QUANT.	PRICE, \$
113b	Mono GalNAc TEG Phosphoramidite	100 mg	200
	C ₆₂ H ₉₀ N ₃ O ₁₉ P	200 mg	290
	FW 1212.4 • MC 645.3	1000 mg	590

⇒ Ulashchik, E. A., Martynenko-Makaev, Y. V., Akhlamionok, T. P., Melnik, D. M., Shmanai, V. V., & Zatsepin, T. S. (2021). Synthesis of galNAc-oligonucleotide conjugates using galNAc phosphoramidite and triple-galNAc CPG solid support. Design and Delivery of siRNA Therapeutics, 101-118. [DOI](#)

Other Functional Phosphoramidites

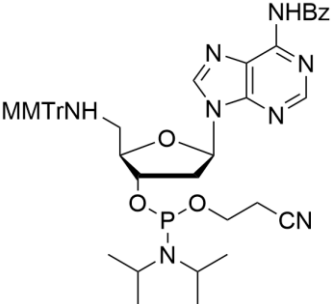
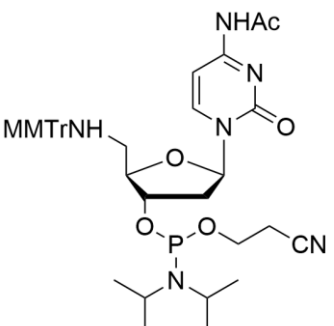
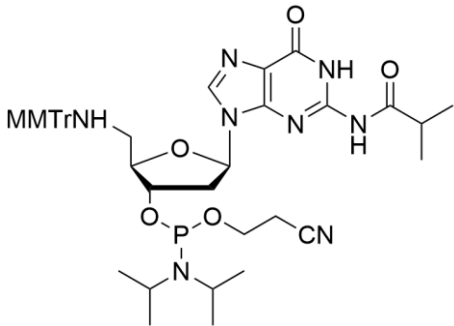
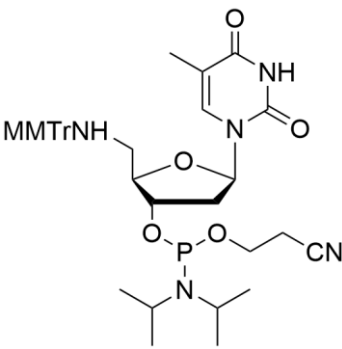
This section includes various phosphoramidites which allow to modify oligonucleotides with the terminal phosphate group or insert spacers of both aliphatic or TEG structure, as well as create branched fragments.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	111d	Phosphorylation Phosphoramidite CAS 108783-02-4 • C ₃₄ H ₄₅ N ₂ O ₇ PS FW 656.8 • MC 78.0	100 mg 200 mg 1000 mg	160 220 460
	1130	C3-Phosphoramidite CAS 110894-23-0 • C ₃₃ H ₄₃ N ₂ O ₅ P FW 578.7 • MC 137.0 i C3 spacer.	100 mg 200 mg 1000 mg	100 130 260
	113d	Dodecanediol Phosphoramidite CAS 158665-27-1 • C ₄₂ H ₆₁ N ₂ O ₅ P FW 704.9 • MC 565.3 i C12 spacer.	100 mg 200 mg 1000 mg	100 130 260
	112f	TEG-3 Phosphoramidite CAS 146668-73-7 • C ₃₆ H ₄₉ N ₂ O ₇ P FW 652.8 • MC 212.1	100 mg 200 mg 1000 mg	130 160 330
	112g	TEG-4 Phosphoramidite CAS 158041-83-9 • C ₃₈ H ₅₃ N ₂ O ₈ P FW 696.8 • MC 256.2	100 mg 200 mg 1000 mg	130 160 330
	1131	TEG-6 Phosphoramidite (HEG Phosphoramidite) CAS 125607-09-2 • C ₄₂ H ₆₁ N ₂ O ₁₀ P FW 784.9 • MC 344.3	100 mg 200 mg 1000 mg	160 220 460
	1132	Glycerol TEG Doubler Phosphoramidite C ₆₂ H ₇₇ N ₂ O ₁₂ P FW 1073.3 • MC 329.1	100 mg 200 mg 1000 mg	330 460 1040
	1143	Long Trebler Phosphoramidite CAS 1516489-83-0 • C ₈₉ H ₁₀₇ N ₂ O ₁₅ P FW 1475.8 • MC 429.2	100 mg 200 mg 1000 mg	200 330 650
	1146	TCO TEG Phosphoramidite C ₂₆ H ₄₈ N ₃ O ₇ P FW 545.7 • MC 407.4 i Check out our TCO section (P. 46) for more TCO reagents.	25 mg 100 mg 250 mg	330 910 1820
	1148	Ferrocenyl Pro Phosphoramidite C ₅₂ H ₆₅ FeN ₄ O ₇ P FW 944.9 • MC 504.3	50 mg 200 mg 1000 mg	200 560 1560

NUCLEOSIDIC PHOSPHORAMIDITES

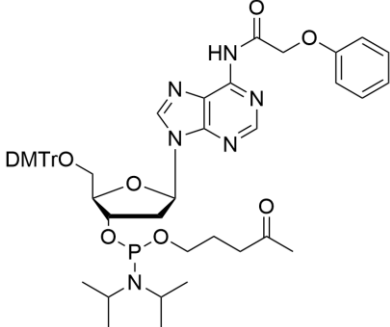
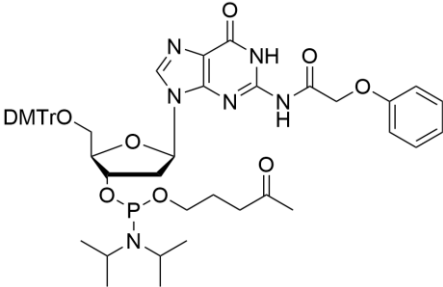
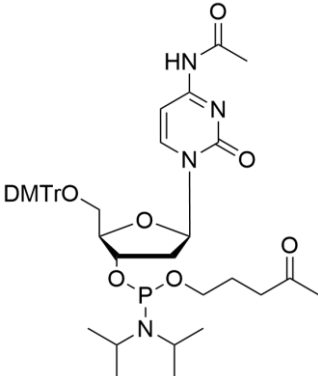
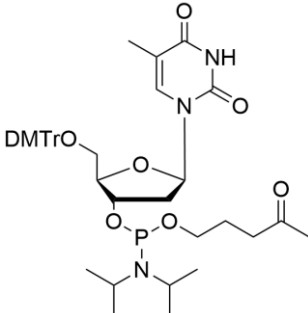
5'-Amino Phosphoramidites

5'-Amino Phosphoramidites bearing a monomethoxytrityl protective group terminate an oligonucleotide with an amino group for further coupling or bioconjugation.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	102e	5'-MMTNH-dA(Bz) Phosphoramidite CAS 184488-14-0 • C ₄₆ H ₅₁ N ₆ O ₅ P FW 826.9 • MC 312.2	200 mg 1000 mg	140 350
	102f	5'-MMTNH-dC(Ac) Phosphoramidite CAS 125443-93-8 • C ₄₀ H ₄₉ N ₆ O ₆ P FW 740.8 • MC 288.2	100 mg 200 mg 1000 mg	300 400 1130
	1030	5'-MMTNH-dG(iBu) Phosphoramidite CAS 125444-09-9 • C ₄₃ H ₅₃ N ₆ O ₆ P FW 808.9 • MC 328.2	100 mg 200 mg 1000 mg	300 400 1130
	1031	5'-MMTNH-dT Phosphoramidite CAS 194034-71-4 • C ₃₉ H ₄₈ N ₅ O ₆ P FW 713.8 • MC 303.2	200 mg 1000 mg	230 620

Oxopentyl Phosphoramidites

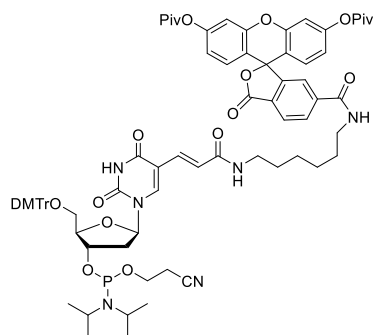
Oxopentyl-modified nucleoside phosphoramidites are designed for the synthesis of oligonucleotides containing a thermolabile 3'-blocking group, which prevents primer hybridization and extension at low temperatures and is automatically removed during high-temperature activation. Oligonucleotides synthesized using these phosphoramidites function as built-in hot-start primers, eliminating premature annealing and nonspecific extension during reaction setup and thermal cycling.

CAT. NO	PRODUCT	QUANT.	PRICE, \$
	1032 dA(Pac) Oxopentyl Phosphoramidite CAS 1097651-25-6 • C₅₀H₅₉N₆O₉P FW 919.0 • MC 399.3 i Prepare 0.067M solution in dry MeCN. Cap A solution must be the phenoxyacetyl anhydride version of the reagent, not acetic anhydride. Deblock in 0.05M K₂CO₃ in MeOH, room temp, 16-20 h.	250 mg 500 mg	250 510
	1033 dG(Pac) Oxopentyl Phosphoramidite CAS 1097651-27-8 • C₅₀H₅₉N₆O₁₀P FW 935.0 • MC 415.3 i Prepare 0.067M solution in mixture of dry dichloromethane : acetonitrile (1:1). Cap A solution must be the phenoxyacetyl anhydride version of the reagent, not acetic anhydride. Deblock in 0.05M K₂CO₃ in MeOH, room temp, 16-20 h.	250 mg 500 mg	250 510
	1034 dC(Ac) Oxopentyl Phosphoramidite C₄₃H₅₅N₄O₉P FW 802.9 • MC 375.3 i Prepare 0.067M solution in dry MeCN. Cap A solution must be the phenoxyacetyl anhydride version of the reagent, not acetic anhydride. Deblock in 0.05M K₂CO₃ in MeOH, room temp, 16-20 h.	250 mg 500 mg	250 510
	1035 dT Oxopentyl Phosphoramidite CAS 370596-61-5 • C₄₂H₅₄N₃O₉P FW 775.9 • MC 390.3 i Prepare 0.067M solution in dry MeCN. Cap A solution must be the phenoxyacetyl anhydride version of the reagent, not acetic anhydride. Deblock in 0.05M K₂CO₃ in MeOH, room temp, 16-20 h.	250 mg 500 mg	250 510

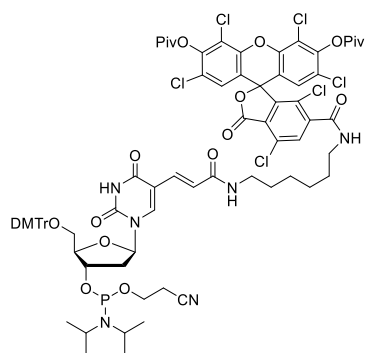
Fluorescent Dye and Quencher Nucleosidic Phosphoramidites

Nucleosidic phosphoramidites are designed to introduce various labels into internal positions of the oligonucleotide during the automated synthesis. The resulting sequence retains its structure and base pairing ability. Also, the nucleosidic label does not affect the exonuclease or polymerase activity.

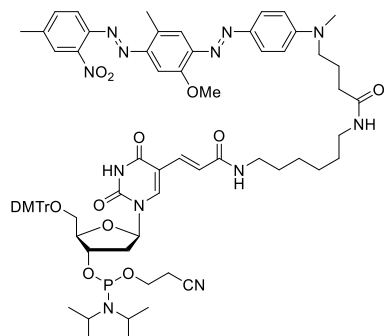
FIDELITY OLIGOS LLC offers the most important nucleosidic phosphoramidites with fluorescent dyes or dye quenchers, alkyne anchor groups for further click conjugation, as well as amine, thiol and NHS functions.



CAT. NO	PRODUCT	QUANT.	PRICE, \$
100c	6-FAM C6-dT Phosphoramidite	100 mg	390
	CAS 1194507-30-6 • C ₇₉ H ₈₉ N ₆ O ₁₇ P	200 mg	590
	FW 1425.6 • MC 815.2	1000 mg	1300

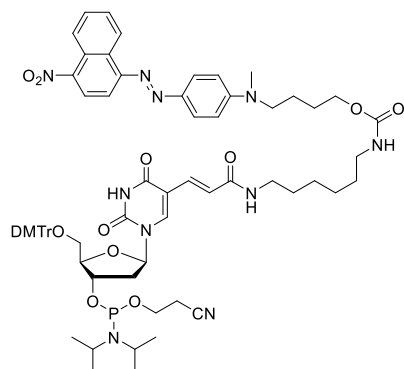


100d	6-HEX C6-dT Phosphoramidite	100 mg	460
	C ₇₉ H ₈₃ Cl ₆ N ₆ O ₁₇ P	200 mg	650
	FW 1632.2 • MC 1019.0	1000 mg	1560



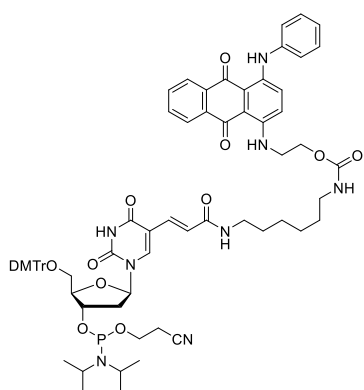
100e	BHQ-1 dT Phosphoramidite	100 mg	590
	C ₇₄ H ₈₉ N ₁₂ O ₁₃ P	200 mg	900
	FW 1385.6 • MC 943.4	1000 mg	1950

Quenching range 480–580 nm.



1012	Iowa Black FQ dT Phosphoramidite	100 mg	590
	C ₇₀ H ₈₃ N ₁₀ O ₁₃ P	200 mg	900
	FW 1303.5 • MC 861.3	1000 mg	1950

Quenching range 420–620 nm.



1013

Iowa Black RQ dT Phosphoramidite

 $C_{71}H_{79}N_8O_{13}P$

FW 1283.4 • MC 841.3

[i] Quenching range 500–700 nm.

100 mg

590

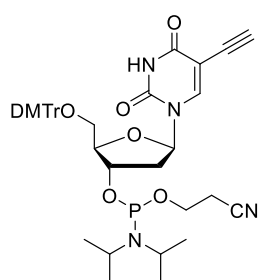
200 mg

900

1000 mg

1950

Alkyne Nucleosidic Phosphoramidites



1014

EdU Phosphoramidite

CAS 615288-66-9 • $C_{41}H_{47}N_4O_8P$

FW 754.8 • MC 313.0

100 mg

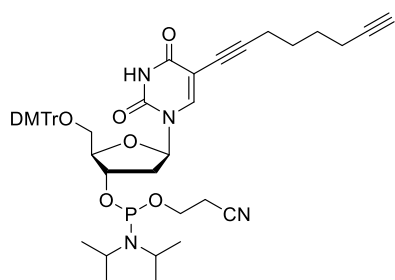
390

200 mg

590

1000 mg

1300



1015

5-Octadiynyl dU Phosphoramidite

CAS 938186-76-6 • $C_{47}H_{55}N_4O_8P$

FW 835.0 • MC 393.1

100 mg

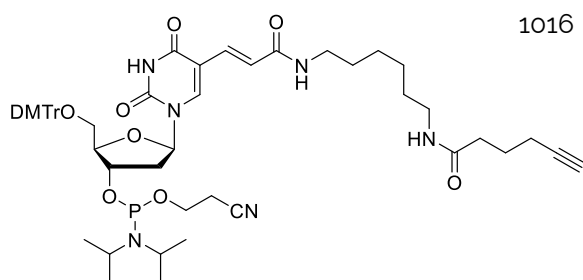
390

200 mg

590

1000 mg

1300



1016

6-Hexynoic acid alkyne C6-dT Phosphoramidite

 $C_{54}H_{69}N_6O_{10}P$

FW 993.2 • MC 551.2

100 mg

390

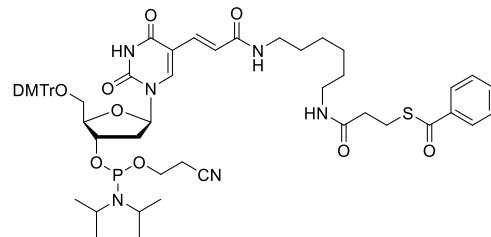
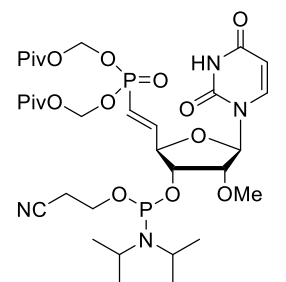
200 mg

590

1000 mg

1300

Other Nucleosidic Phosphoramidites

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	100f	S-Bz Thiol-Modifier C6-dT Phosphoramidite $C_{58}H_{71}N_6O_{11}PS$ FW 1091.3 • MC 545.2	100 mg 200 mg 1000 mg	390 590 1300
	100b	Amino-Modifier C6-dT Phos- phoramidite CAS 210534-16-0 • $C_{50}H_{62}F_3N_6O_{10}P$ FW 995.0 • MC 457.2	100 mg 200 mg 1000 mg	390 590 1300
	1017	NHS carboxy dT Phospho- ramidite CAS 1354695-41-2 • $C_{46}H_{52}N_5O_{12}P$ FW 897.9	100 mg 200 mg 1000 mg	390 590 1300
	100a	RevdT Phosphoramidite CAS 134031-86-0 • $C_{40}H_{49}N_4O_8P$ FW 744.8 • MC 303.0	100 mg 200 mg 1000 mg	90 130 260
	1011	5'-POM-Vinyl phosphonate 2'- O-Methyl Uridine 3'-CE Phos- phoramidite CAS 1882067-09-5 • $C_{32}H_{52}N_4O_{13}P_2$ FW 762.7 • MC 624.5  5' vinyl phosphonate mimics 5'-phosphorylation.	100 mg 200 mg 1000 mg	140 260 1040

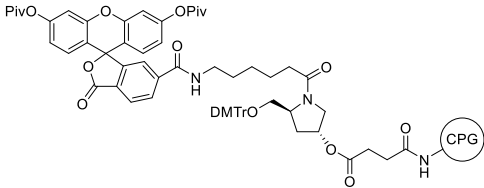
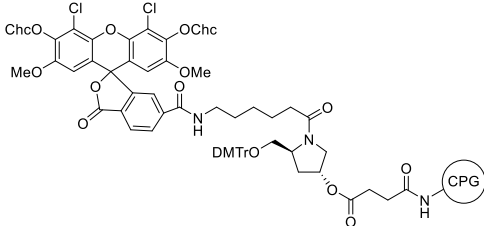
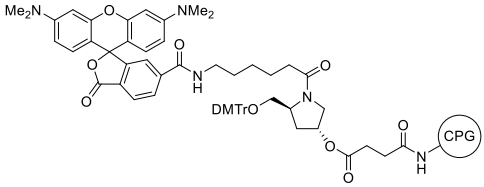
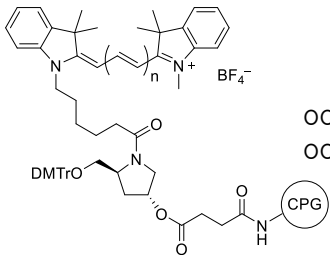
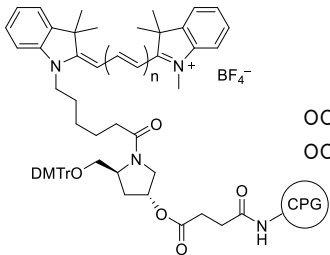
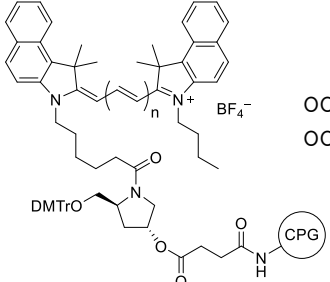
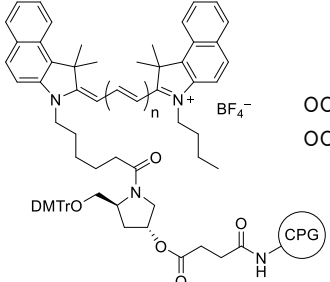
CONTROLLED PORE GLASS (CPG)

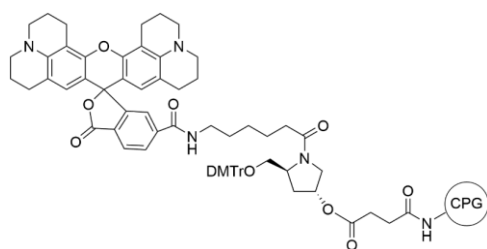
FIDELITY OLIGOS LLC offers a range of CPG supports for the synthesis of 3'-labeled oligonucleotides. The controlled pore glass support is pre-modified with a specific label which serves as a starting point for the growth of the oligo chain. Subsequent deblocking and cleavage from the support gives 3'-modified oligonucleotide.

All our products are available in **500 Å** or **1000 Å** pore size format. Please, contact us about the other pore sizes or labels (dyes, quenchers or anchor groups), LCAA spacers or desired loading of the CPG. Polystyrene supports are available on request.

CPG with fluorescent labels

CPG with fluorescent labels are designed as tools for the introduction of a fluorescent label into 3'-position of oligonucleotides. All protective groups on the dye labels are removed during the deblocking step.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	008a	FAM CPG MC 650.6	100 mg 1000 mg	130 330
	008b	JOE CPG MC 777.1	100 mg 1000 mg	200 460
	008c	TAMRA CPG MC 703.3	100 mg 1000 mg	200 460
	0096	BY-3 CPG MC 617.3	100 mg 1000 mg	220 520
	0096: n = 1 0098: n = 2			
	0098	BY-5 CPG MC 643.3	100 mg 1000 mg	220 520
	0097	BY-3.5 CPG MC 759.4	100 mg 1000 mg	220 520
	0097: n = 1 0099: n = 2			
	0099	BY-5.5 CPG MC 785.4	100 mg 1000 mg	220 520



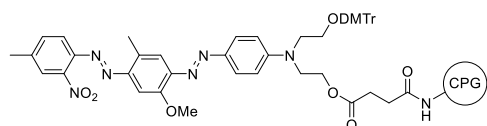
0127

6-ROX CPG
MC 808.3

50 mg	180
200 mg	560
1000 mg	1560

CPG with dye quenchers

CPG with dye quenchers are typically used for the synthesis of oligonucleotide probes which bear a fluorescent label at 5'-position and a dye quencher at 3'-position. Presently we offer the CPG supports with BHQ-1, BHQ-2, BBQ-650, Dabcyl and Iowa quenchers, which can be effectively paired with the most popular fluorescent dyes.

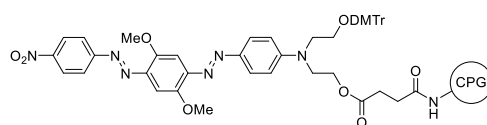


003e

BHQ-1 CPG
MC 491.2

100 mg	200
1000 mg	460

[i] Quenching range 480–580 nm.

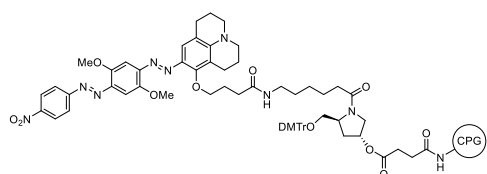


003f

BHQ-2 CPG
MC 555.1

100 mg	200
1000 mg	460

[i] Quenching range 550–670 nm.

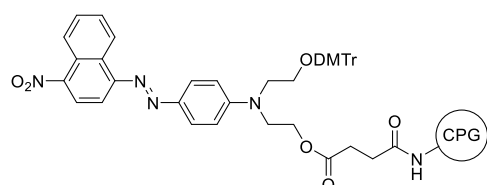


009b

BBQ-650 CPG
MC 861.3

100 mg	260
1000 mg	590

[i] Quenching range 550–750 nm.

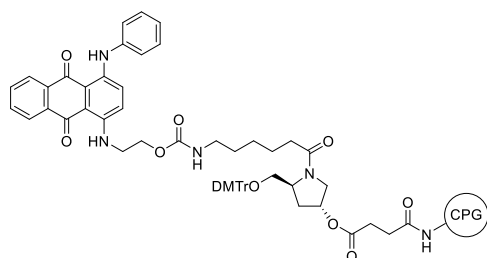


00a0

Iowa Black FQ CPG
MC 441.1

100 mg	290
1000 mg	650

[i] Quenching range 420–620 nm.

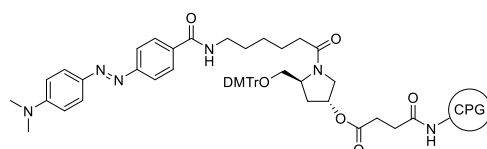


009d

Iowa Black RQ Pro CPG
MC 678.68

100 mg	290
1000 mg	650

[i] Quenching range 500–700 nm.



003d

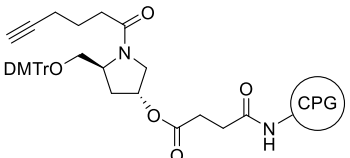
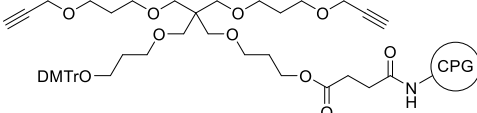
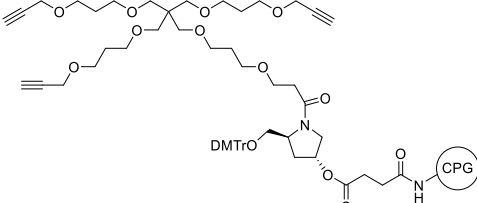
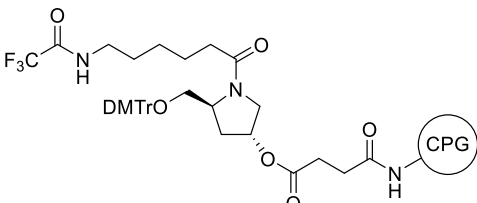
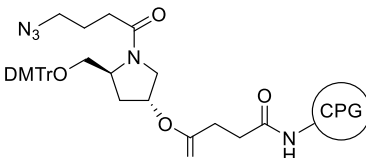
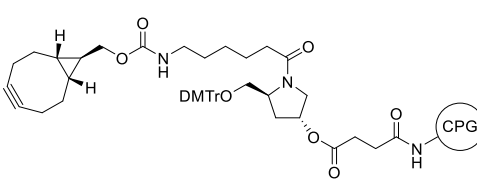
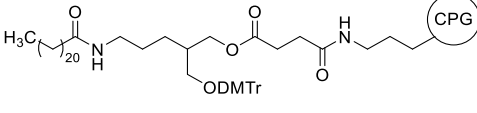
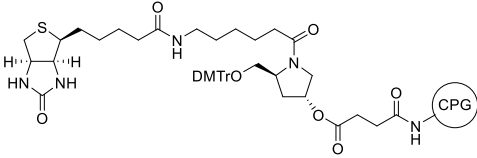
Dabcyl CPG
MC 542.2

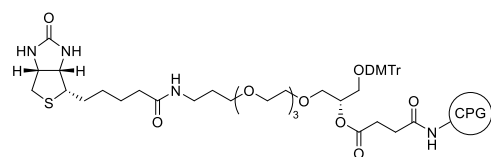
100 mg	100
1000 mg	260

[i] Quenching range 400–550 nm.

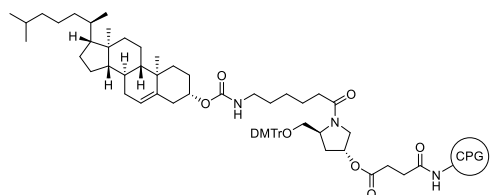
CPG with various functional groups

CPG with various functional groups are used for the synthesis of modified oligonucleotides which bear a specific group at 3'-position. Presently we offer a range of CPG supports with azide, alkyne, amine, BCN and other functional groups, as well as GalNAc or cholesterol CPG for 3'-modification.

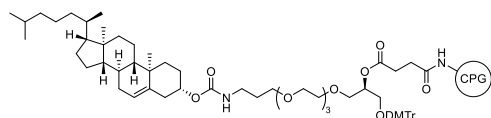
	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	0042	Alkyne-modified CPG MC 272.1	100 mg 1000 mg	160 390
	0091	Alkyne doubler CPG MC 427.6	50 mg 200 mg	330 780
	0092	Alkyne trebler CPG MC 955.2	50 mg 200 mg	460 1170
	0041	Amino-modified CPG MC 291.1	100 mg 1000 mg	160 390
	0058	Azide CPG MC 289.2 <i>i</i> Azide group is shown to be fully compatible with the automated oligonucleotide synthesis (Org. Lett. 2014, 16, 17, 4590. DOI).	100 mg 1000 mg	200 460
	009f	BCN CPG MC 468.5 <i>i</i> Single isomer. Endo isomer is available on request.	100 mg 1000 mg	650 1690
	0095	Behenic CPG MC 516.7 <i>i</i> Lipid phosphoramidites with variable chain lengths are available on request.	100 mg 1000 mg	160 390
	008d	Biotin Pro CPG MC 517.2	100 mg 1000 mg	160 390



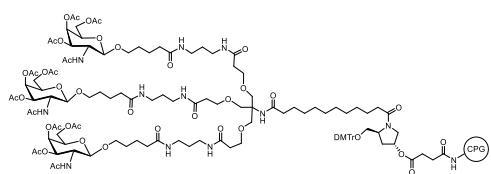
008f

Biotin TEG CPG
MC 568.2100 mg
1000 mg
160
390

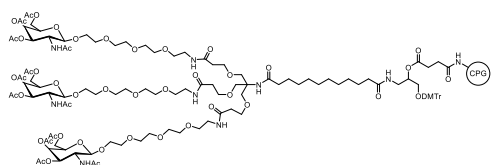
0090

Cholesterol Pro CPG
MC 703.5100 mg
1000 mg
160
390

0100

Cholesterol TEG CPG
MC 754.5100 mg
1000 mg
160
460

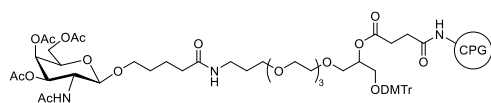
0088

Tris-GalNAc CPG
MC 1786.9100 mg
1000 mg
520
1240

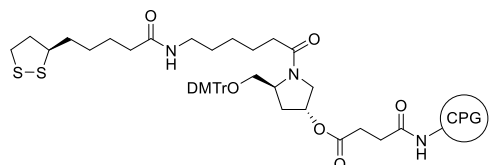
0087

Tris-GalNAc TEG CPG
MC 1817.9

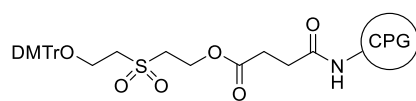
i Cited in: Bioconjugate Chem. 2018, 29, 7, 2478 ([DOI](#)).

100 mg
1000 mg
520
1240

009e

Mono GalNAc TEG CPG
MC 645.3100 mg
1000 mg
200
460

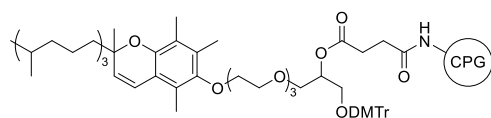
008e

Lipoic CPG
MC 479.1100 mg
1000 mg
160
390

0086

Phosphate CPG
MC 78.0

i Automatically cleavable group for 3'-phosphate introduction.

100 mg
1000 mg
160
390

009c

α-Tocopherol TEG CPG
MC 695.4100 mg
1000 mg
200
460

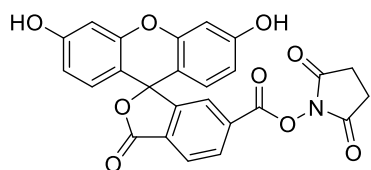
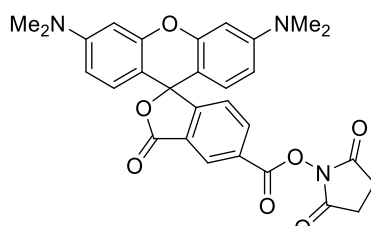
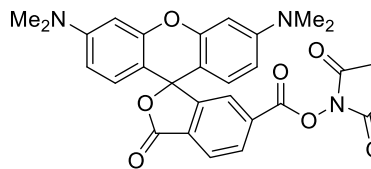
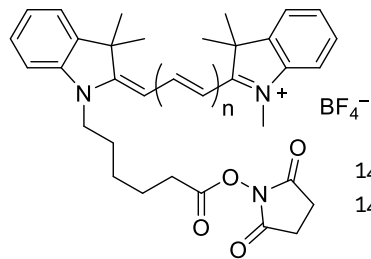
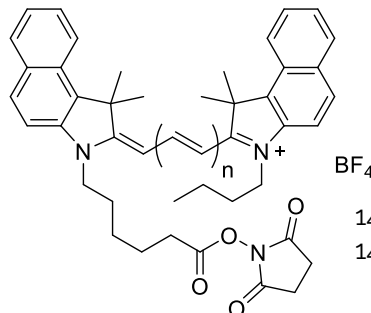
REAGENTS FOR BIOCONJUGATION

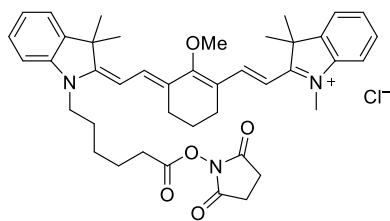
FIDELITY OLIGOS LLC offers various reactive compounds for labeling, cross-linking and immobilization of biomolecules. These include **activated esters** (for amine labeling), **azides** and **alkynes** (for copper or metal-free click labeling), **maleimides** (for thiol labeling) as well as **auxiliary reagents** (buffers, catalysts or ligands) for bioconjugation.

As long as there are many possible combinations of specific fluorescent dyes or labels with reactive functional groups, we provide custom synthesis of the reagents. Please contact us for further information.

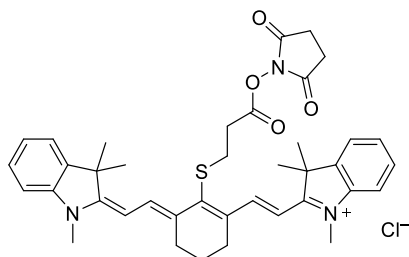
Activated esters

N-Hydroxysuccinimide (NHS) esters are widely used to label proteins, peptides or oligonucleotides bearing a reactive amine group. NHS esters are capable reacting with amines without carbodiimide activation.

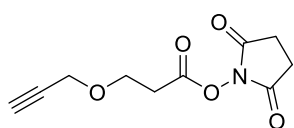
	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	1410	6-FAM NHS CAS 92557-81-8 • C ₂₅ H ₁₅ NO ₉ FW 473.4 • MC 358.1	5 mg 25 mg 250 mg	160 260 780
	1407	5-TAMRA NHS CAS 321862-17-3 • C ₂₉ H ₂₅ N ₃ O ₇ FW 527.5 • MC 412.1	5 mg 25 mg 250 mg	200 330 980
	1408	6-TAMRA NHS C ₂₉ H ₂₅ N ₃ O ₇ FW 527.5 • MC 412.1	5 mg 25 mg 250 mg	200 330 980
	1401	By-3 NHS (Cy3 analogue) CAS 2632339-91-2 • C ₃₄ H ₄₀ N ₃ O ₄ BF ₄ FW 641.5 • MC 439.3	1 mg 10 mg 100 mg	180 300 1270
	1403	By-5 NHS (Cy5 analogue) CAS 1263093-76-0 • C ₃₆ H ₄₂ N ₃ O ₄ BF ₄ FW 667.6 • MC 465.4	1 mg 10 mg 100 mg	180 300 910
	1402	By-3.5 NHS (Cy3.5 analogue) C ₄₅ H ₅₀ N ₃ O ₄ BF ₄ FW 783.7 • MC 581.4	1 mg 10 mg 100 mg	180 300 910
	1404	By-5.5 NHS (Cy5.5 analogue) C ₄₅ H ₅₀ N ₃ O ₄ BF ₄ FW 809.8 • MC 607.4	1 mg 10 mg 100 mg	180 300 910



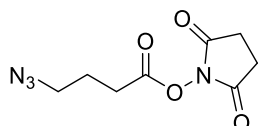
1418	By-7-MO NHS (Cy7 analogue)	1 mg	210
	$C_{42}H_{50}N_3O_5Cl$	10 mg	330
	FW 712.3 • MC 561.8	50 mg	850



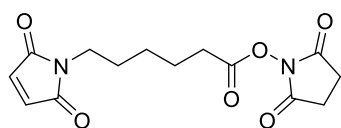
1419	By-7-S NHS (Cy7 analogue)	1 mg	210
	$C_{39}H_{44}N_3O_4S$	10 mg	330
	FW 686.3 • MC 535.8	50 mg	850



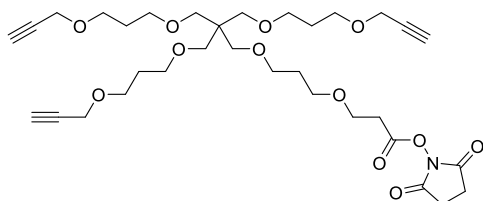
140a	Propynyloxypropionic acid oxysuccinimide ester	100 mg	330
	CAS 1174157-65-3 • $C_{10}H_{11}NO_5$	1000 mg	850
	FW 225.2 • MC 110.0		



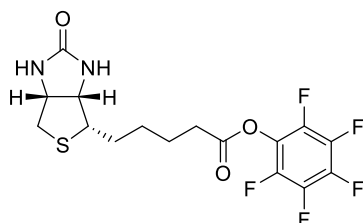
140b	γ-Azidobutyric acid oxysuccinimide ester	100 mg	330
	CAS 943858-70-6 • $C_8H_{10}N_4O_4$	1000 mg	850
	FW 226.2 • MC 111.0		



1415	N-ε-Maleimidocaproyl oxy-succinimide ester	100 mg	330
	CAS 55750-63-5 • $C_{14}H_{16}N_2O_6$	1000 mg	850
	FW 308.3 • MC 193.1		



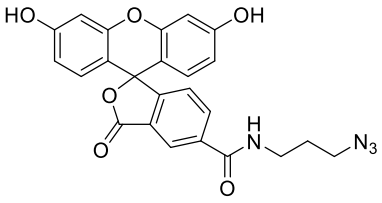
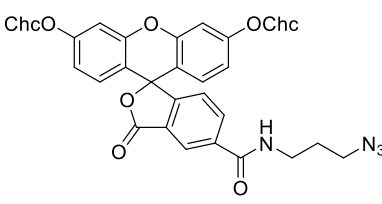
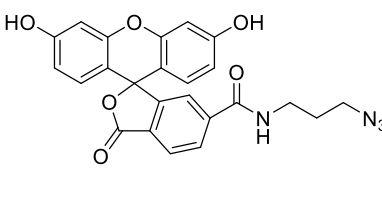
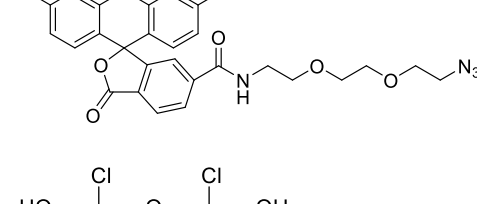
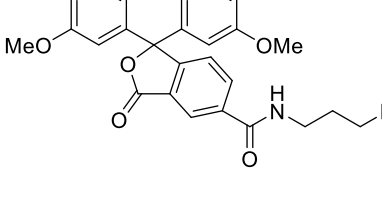
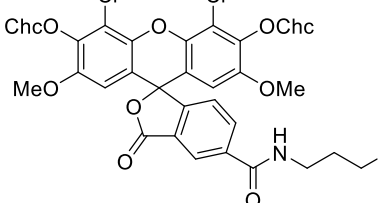
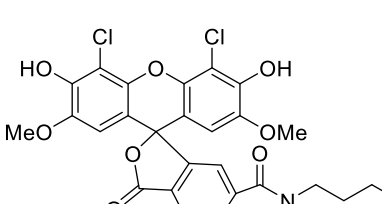
1416	Alkyne-treble-NHS	100 mg	520
	CAS 2223630-42-8 • $C_{33}H_{49}NO_{12}$		
	FW 651.8 • MC 536.3		

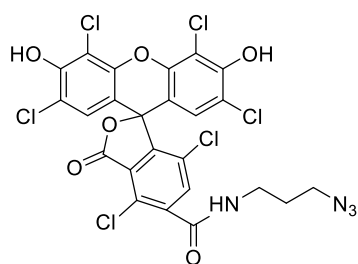


1409	Biotin pentafluorophenyl ester	100 mg	330
	CAS 120550-35-8 • $C_{16}H_{15}F_5N_2O_3S$	1000 mg	850
	FW 410.4 • MC 226.1		
	mp 188-189 °C		

Azides

Azides are useful reagents for orthogonal bioconjugation. They react selectively with terminal alkynes in the presence of copper catalysts, which makes them valuable tools for bioconjugation and click chemistry (CuAAC) applications.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	0060	5-FAM Azide CAS 510758-23-3 · C ₂₄ H ₁₈ N ₄ O ₆ FW 458.4	10 mg 50 mg	200 330
	0063	5-FAM Azide, CHC protected C ₃₈ H ₃₈ N ₄ O ₈ FW 678.7	10 mg 50 mg	200 330
	0061	6-FAM Azide CAS 1386385-76-7 · C ₂₄ H ₁₈ N ₄ O ₆ FW 458.4	10 mg 50 mg	200 330
	0064	6-FAM Azide C8 C ₂₇ H ₂₄ N ₄ O ₈ FW 523.5	10 mg 50 mg	200 330
	0066	5-JOE Azide CAS 1422178-11-7 · C ₂₆ H ₂₀ Cl ₂ N ₄ O ₈ FW 587.4	10 mg 50 mg	220 460
	0068	5-JOE Azide, CHC protected C ₄₀ H ₄₀ Cl ₂ N ₄ O ₁₀ FW 807.7	10 mg 50 mg	220 460
	0067	6-JOE Azide C ₂₆ H ₂₀ Cl ₂ N ₄ O ₈ FW 587.4	10 mg 50 mg	220 460



0108

5-HEX Azide

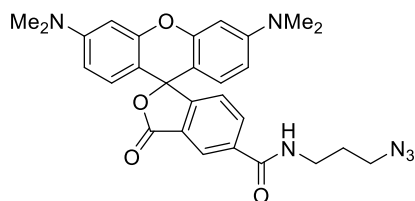
CAS 1846596-01-7 • C₂₄H₁₂Cl₆N₄O₆
FW 665.1

10 mg

220

50 mg

460



006f

5-TAMRA Azide

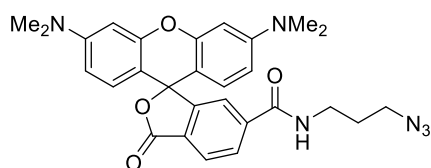
CAS 1557372-54-9 • C₂₈H₂₈N₆O₄
FW 512.6

10 mg

220

50 mg

460



0070

6-TAMRA Azide

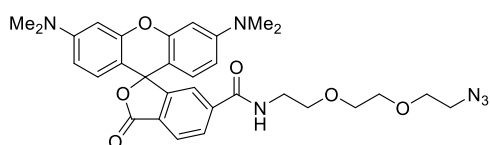
C₂₈H₂₈N₆O₄
FW 512.6

10 mg

220

50 mg

460



0071

6-TAMRA Azide C8

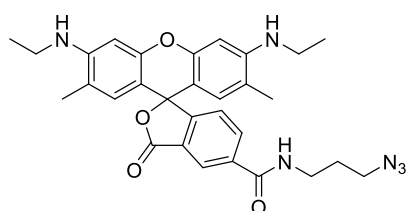
C₃₁H₃₄N₆O₆
FW 586.6

10 mg

220

50 mg

460



006d

5-R6G Azide

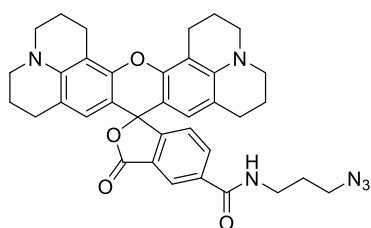
C₃₀H₃₂N₆O₄
FW 540.6

10 mg

220

50 mg

460



0072

5-ROX Azide

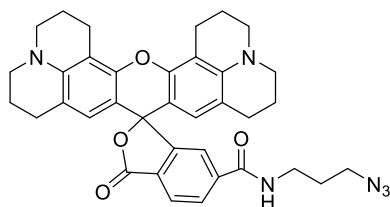
C₃₆H₃₆N₆O₄
FW 616.7

10 mg

220

50 mg

460



0073

6-ROX Azide

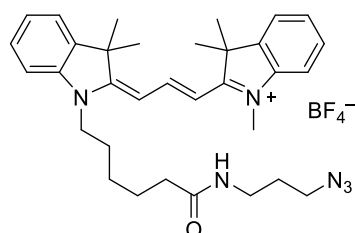
C₃₆H₃₆N₆O₄
FW 616.7

10 mg

220

50 mg

460



0074

By-3 Azide

C₃₃H₄₃N₆OBF₄
FW 626.6

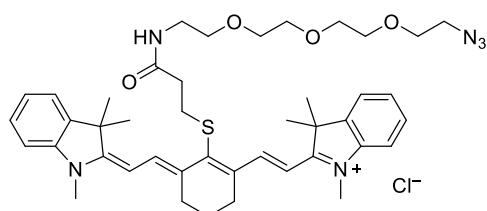
10 mg

220

50 mg

460

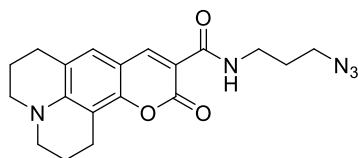
	0076	By-5 Azide $C_{35}H_{45}N_6OBF_4$ FW 652.6	10 mg 50 mg	220 460
	0075	By-3.5 Azide $C_{44}H_{53}N_6OBF_4$ FW 768.8	10 mg 50 mg	220 460
	0077	By-5.5 Azide $C_{46}H_{55}N_6OBF_4$ FW 794.8	10 mg 50 mg	220 460
	0078	By-7 Azide $C_{37}H_{47}N_6OBF_4$ FW 678.6	10 mg 50 mg	220 460
	0116	By-7-MO Azide $C_{41}H_{53}N_6O_2Cl$ FW 697.4	1 mg 10 mg 50 mg	210 330 850
	0117	By-7-MO TEG Azide $C_{46}H_{63}N_6O_5Cl$ FW 815.5	1 mg 10 mg 50 mg	210 330 850
	0118	By-7-S Azide $C_{38}H_{47}N_6OSCl$ FW 671.3	1 mg 10 mg 50 mg	210 330 850



0119

By-7-S TEG Azide

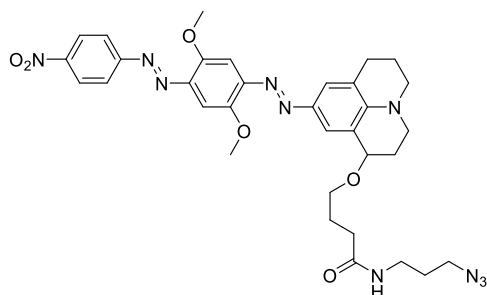
 $C_{43}H_{57}N_6O_4S$
FW 789.5

1 mg 210
10 mg 330
50 mg 850


0038

Coumarin 343 Azide

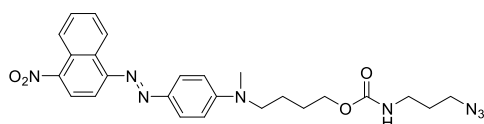
 $C_{19}H_{21}N_5O_3$
FW 367.4

10 mg 220
50 mg 460


0120

BBQ-650 Azide

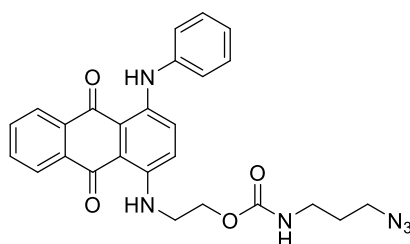
 $C_{33}H_{38}N_{10}O_6$
FW 670.7

10 mg 260
50 mg 780


0121

Iowa Black FQ Azide

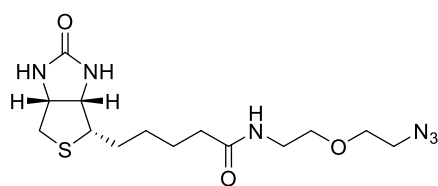
 $C_{25}H_{28}N_6O_4$
FW 504.6

10 mg 260
50 mg 780


0103

Iowa Black RQ Azide

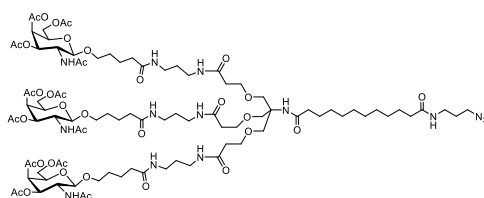
 $C_{26}H_{24}N_6O_4$
FW 484.5

5 mg 200
10 mg 260
50 mg 780


007a

Biotin Azide

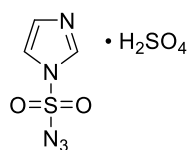
CAS 1204085-48-2 • $C_{14}H_{24}N_6O_3S$
FW 356.4

10 mg 180
50 mg 390


0079

Trebler GalNAc Azide

CAS 2790424-72-3 • $C_{94}H_{154}N_{14}O_{38}$
FW 2088.3

1 mg 330
10 mg 910


0101

Imidazole-1-sulfonyl azide

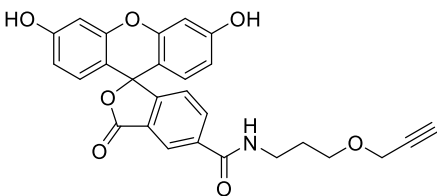
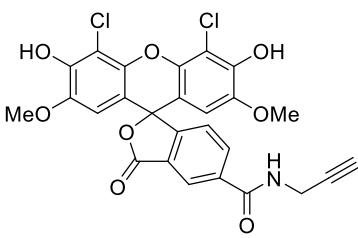
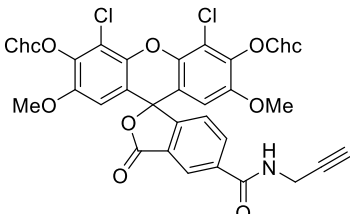
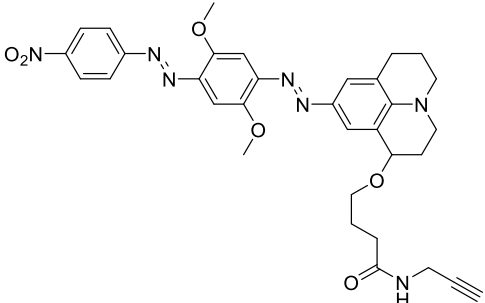
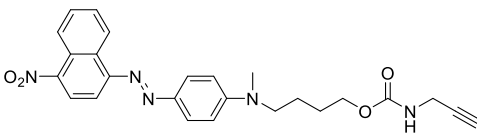
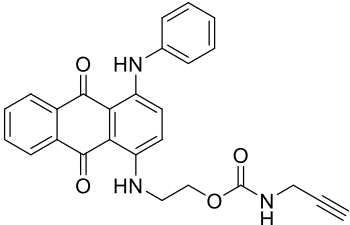
CAS 1357503-23-1 • $C_3H_5N_5O_6S_2$
FW 271.2

[1] Reviewed in:
Synlett 2014, 25, 15, 2229 ([DOI](#))
Org. Lett. 2016, 81, 8, 3443 ([DOI](#))

100 mg 200
200 mg 350
1000 mg 650

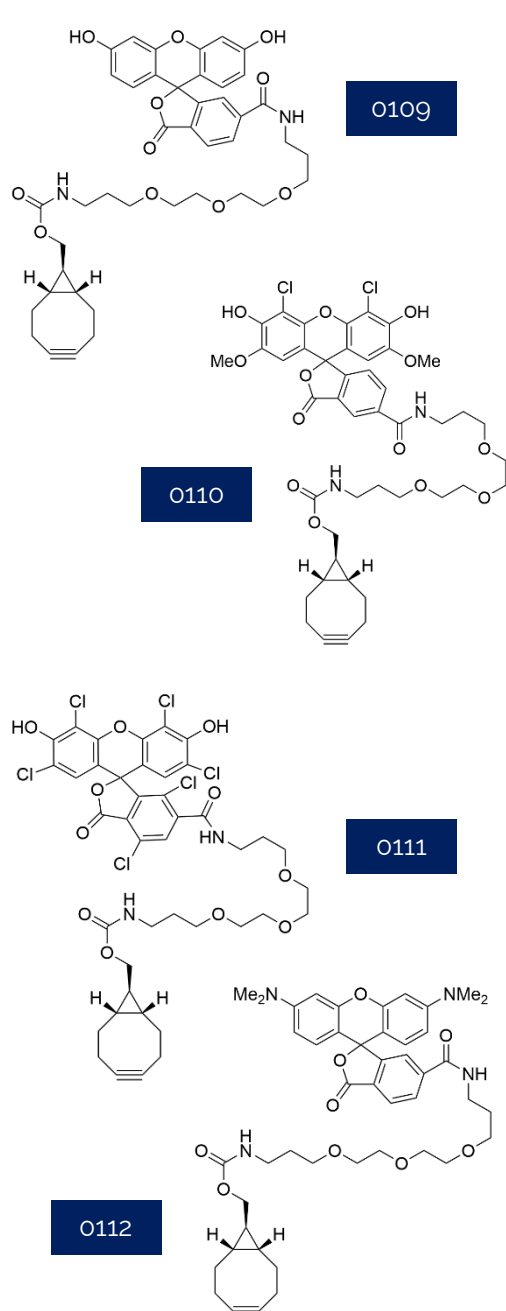
Alkynes

Alkynes are useful reagents for orthogonal bioconjugation. They react selectively with azides in the presence of copper catalysts, which makes them valuable tools for bioconjugation and click chemistry applications.

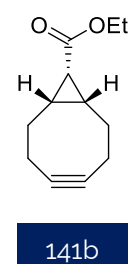
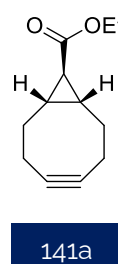
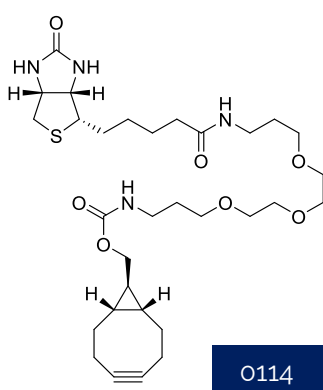
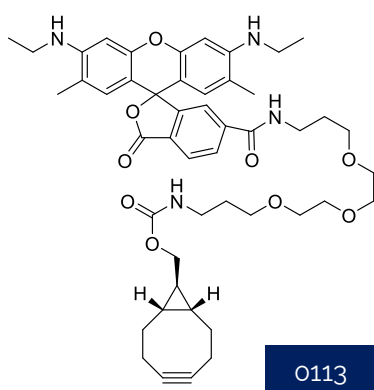
	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	0065	5-FAM Alkyne C ₂₇ H ₂₁ NO ₇ FW 473.4	10 mg 50 mg	180 390
	0069	5-JOE Alkyne C ₂₆ H ₁₇ Cl ₂ NO ₈ FW 542.3	10 mg 50 mg	220 460
	006a	5-JOE Alkyne, CHC protected C ₄₀ H ₃₇ Cl ₂ NO ₁₀ FW 762.6	10 mg 100 mg	220 460
	0122	BBQ-650 Alkyne C ₃₃ H ₃₅ N ₇ O ₆ FW 625.7	10 mg 50 mg	260 780
	0123	Iowa Black FQ Alkyne C ₂₅ H ₂₅ N ₅ O ₄ FW 459.5	10 mg 50 mg	260 780
	0104	Iowa Black RQ Alkyne C ₂₆ H ₂₁ N ₃ O ₄ FW 439.5	5 mg 10 mg 100 mg	200 260 780

Bicyclononynes (BCN)

Bicyclononyne group is a copper-free click chemistry (SPAAC) probe which enables highly efficient and completely orthogonal bioconjugation with various azide molecules. FIDELITY OLIGOS LLC offers single isomer BCN reagents (typically exo isomer) but alternative isomer can be available on request.

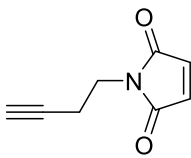
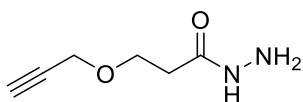
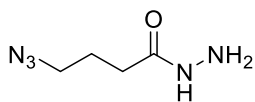
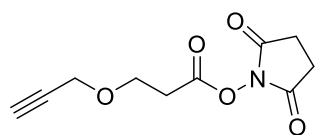
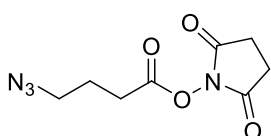
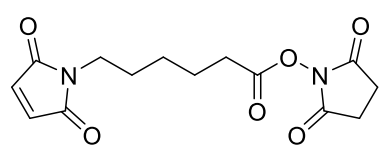


CAT. NO	PRODUCT	QUANT.	PRICE, \$
0109	6-FAM BCN C ₄₂ H ₄₆ N ₂ O ₁₁ FW 473.4 <i>i</i> Piv protected reagent is available on request.	5 mg 25 mg	330 780
0110	5-JOE BCN C ₄₄ H ₄₈ Cl ₂ N ₂ O ₁₃ FW 473.4 <i>i</i> Chc protected reagent is available on request.	5 mg 25 mg	330 780
0111	6-HEX BCN C ₄₂ H ₄₀ Cl ₆ N ₂ O ₁₁ FW 961.5 <i>i</i> Piv protected reagent is available on request.	5 mg 25 mg	330 780
0112	6-TAMRA BCN C ₄₆ H ₅₆ N ₄ O ₉ FW 809.0	5 mg 25 mg	330 780
0113	6-R6G BCN C ₄₈ H ₆₀ N ₄ O ₉ FW 837.0 <i>i</i> TFA protected reagent is available on request.	5 mg 25 mg	330 780
0114	Biotin BCN C ₃₁ H ₅₀ N ₄ O ₇ S FW 837.0	10 mg 50 mg	330 780
141a	Exo-BCN acid ethyl ester CAS 2133836-83-4 • C ₁₂ H ₁₆ O ₂ FW 837.0	100 mg 500 mg	460 1040
141b	Endo-BCN acid ethyl ester CAS 2117678-29-0 • C ₁₂ H ₁₆ O ₂ FW 837.0	100 mg 500 mg	460 1040



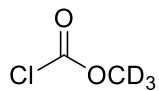
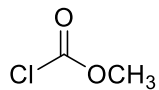
Crosslinkers

In the context of bioconjugation and biomolecule modification, crosslinkers are often used to link biomolecules together, such as proteins or nucleic acids, or to attach biomolecules to surfaces or other materials. Heterobifunctional reagents allow obtaining bioconjugates of a target structure in good yields.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	0028	Alkyne maleinimide CAS 75323-09-0 • C ₈ H ₇ NO ₂ FW 149.2	100 mg 500 mg	290 600
	003b	Propynyloxypropionic acid hydrazide CAS 1849349-67-2 • C ₆ H ₁₀ N ₂ O ₂ FW 142.2	100 mg 500 mg	220 460
	003c	γ-Azidobutyric acid hydrazide CAS 1545430-85-0 • C ₄ H ₉ N ₅ O FW 143.2	100 mg 500 mg	220 460
	140a	Propynyloxypropionic acid oxysuccinimide ester CAS 1174157-65-3 • C ₁₀ H ₁₁ NO ₅ FW 225.2 • MC 110.0	100 mg 1000 mg	330 780
	140b	γ-Azidobutyric acid oxysuccinimide ester CAS 943858-70-6 • C ₈ H ₁₀ N ₄ O ₄ FW 226.2 • MC 111.0	100 mg 1000 mg	330 780
	1415	N-ε-Maleimidocaproyl oxysuccinimide ester CAS 55750-63-5 • C ₁₄ H ₁₆ N ₂ O ₆ FW 308.3 • MC 193.1	100 mg 1000 mg	330 780

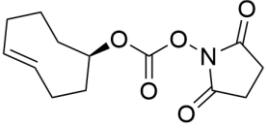
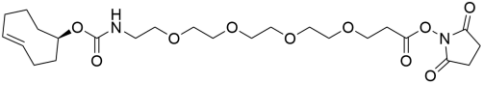
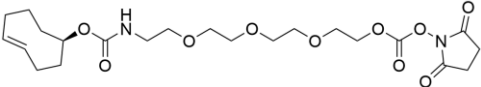
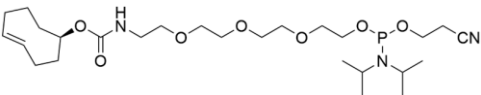
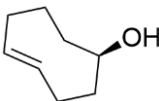
Mass-tag reagents

Mass tag reagents, also known as mass spectrometry tags or mass spectrometry labels, are small molecules that are chemically attached to biomolecules to introduce a unique mass signature. These tags are used in mass spectrometry-based proteomics and metabolomics studies to label and track specific biomolecules, such as proteins, peptides, or metabolites, and facilitate their detection and quantification.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	0080	Deuterated methyl chloroformate (d₃-MCF, D-MCF) CAS 43049-56-5 • C ₂ ClD ₃ O ₂ FW 97.5 • MC 61.1	0.5 mL 1 mL	330 460
	0081	Methyl chloroformate (MCF) Metabolomics grade CAS 79-22-1 • C ₂ H ₃ ClO ₂ FW 94.5 • MC 58.1	1 mL	65

Trans-cyclooctenes (TCO)

Trans-cyclooctenes (TCO) are highly strained alkenes that have become indispensable tools in modern bioconjugation because of their exceptional reactivity in inverse-electron-demand Diels–Alder reactions with tetrazines.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	141c	TCO NHS	25 mg	200
		CAS 1191901-33-3 • C ₁₃ H ₁₇ NO ₅ FW 267.3	100 mg	460
	141d	TCO PEG4 NHS succinate	25 mg	260
		CAS 1621096-79-4 • C ₂₄ H ₃₈ N ₂ O ₁₀ FW 514.6	100 mg	590
	141e	TCO TEG NHS carbonate	25 mg	220
		C ₂₂ H ₃₄ N ₂ O ₁₀ FW 486.5	100 mg	520
	1146	TCO TEG Phosphoramidite	25 mg	330
		C ₂₆ H ₄₈ N ₃ O ₇ P FW 545.7 • MC 407.4	100 mg	910
			250 mg	1820
	0126	TCO OH	100 mg	260
		CAS 85081-69-2 • C ₈ H ₁₄ O FW 126.2	500 mg	850
			1000 mg	1170

Auxiliary reagents

Buffers, catalysts and ligands for bioconjugation.

CAT. NO	PRODUCT	QUANTITY	PRICE, \$
000a	TBTA (10 mM solution in DMSO)	1 mL	40
	i Click chemistry ligand for Cu(I) catalyst.	10×1 mL	160
000b	CuSO ₄ (10 mM solution in H ₂ O)	1 mL	40
	i Click chemistry catalyst.	10×1 mL	160
000c	Sodium L-ascorbate	2 mg	40
	CAS 134-03-2 • C ₆ H ₈ O ₆ Na FW 176.1 i Click chemistry reducing agent.	2×10 mg	160
000d	TEAA Buffer, 2M, pH 4÷11	10 mL	40
		10×10 mL	160
007b	Click Catalyst (10 mM solution)	1 mL	30
	i Cu ²⁺ /TBTA complex.	10×1 mL	260

Graphene oxide

Graphene oxide (GO) is one of the most promising nanomaterials for various practical applications. In particular, it has great potential for the production of unique bioconjugates. We now offer GO in a form of stable colloidal solution in distilled water (may form easily dispersible precipitate over long storage). Sheet size is 30-500 nm (by Malvern Zetasizer Nano ZSP).

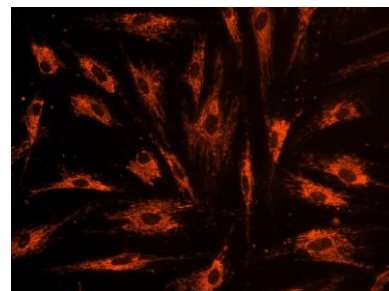
CAT.NO	PRODUCT	QUANTITY	PRICE, \$
0102	Graphene oxide colloidal solution 2 mg/mL dispersion in H₂O. Cited in: Flat Chem. 2021, 27, 100235 (DOI).	10 mL	50
		25 mL	120
		50 mL	220
		100 mL	330

MOLECULAR PROBES

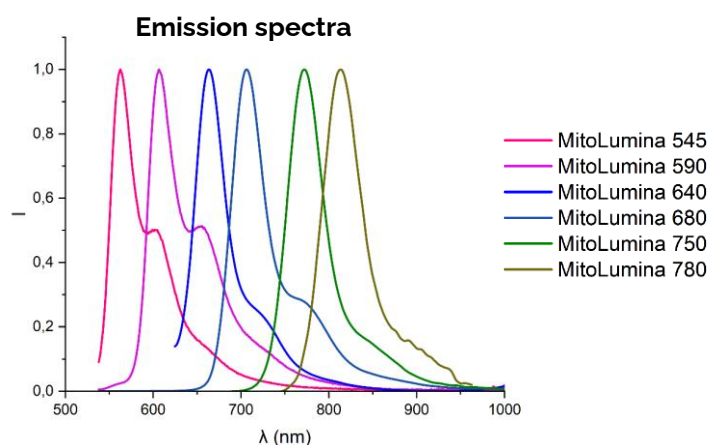
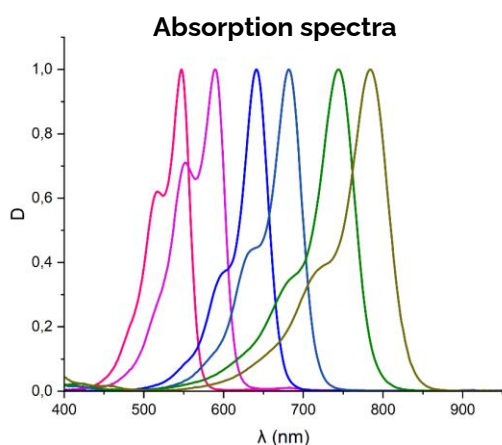
Mitochondria Labeling

MitoLumina probes are a family of cell-permeant carbocyanine fluorescent dyes specifically designed for labeling active mitochondria in live cells. They contain a mildly thiol-reactive chloromethyl group that allows it to covalently bind to mitochondrial proteins, ensuring retention even after cell fixation and permeabilization.

Excitation and emission maxima of MitoLumina probes are tuned to fall into different regions, making them perspective for multicolor fluorescence imaging.



2000	2001	2002
MitoLumina 545 C ₃₂ H ₃₄ ClN ₂ BF ₄ FW 568.9 Abs 547 • Em 563	MitoLumina 590 C ₄₃ H ₄₄ ClN ₂ BF ₄ FW 711.1 Abs 589 • Em 606	MitoLumina 640 C ₃₄ H ₃₆ ClN ₂ BF ₄ FW 594.9 Abs 641 • Em 663
2003	2004	2005
MitoLumina 680 C ₄₅ H ₄₆ ClN ₂ BF ₄ FW 737.1 Abs 682 • Em 706	MitoLumina 750 C ₃₆ H ₃₈ ClN ₂ BF ₄ FW 621.0 Abs 744 • Em 772	MitoLumina 780 C ₄₇ H ₄₈ ClN ₂ BF ₄ FW 763.2 Abs 784 • Em 813

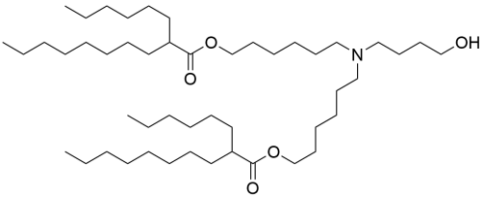


CAT. NO	PRODUCT	QUANTITY	PRICE, \$
2000– –2005	MitoLumina (any single probe) lyophilized powder ready for reconstitution	5×50 µg 5×100 µg 500 µg 1000 µg	180 260 130 200

LIPIDS FOR BIOLOGY

Cationic and ionizable lipids

Cationic and ionizable lipids play a central role in modern biological research and therapeutics, especially in the delivery of nucleic acids such as mRNA, siRNA, and DNA. Their positively charged or pH-responsive headgroups enable them to bind and encapsulate negatively charged genetic material, forming lipid nanoparticles (LNPs) that protect these fragile molecules from degradation and facilitate their entry into cells. Ionizable lipids, in particular, remain neutral at physiological pH—reducing toxicity—but become positively charged in the acidic environment of endosomes, promoting endosomal escape and efficient intracellular release of the therapeutic cargo.

	CAT. NO	PRODUCT	QUANT.	PRICE, \$
	1900	ALC-0315 CAS 2036272-55-4 • C ₄₈ H ₉₅ NO ₅ FW 766.3 <i>i</i> Ionizable cationic lipid used as a core component of modern mRNA lipid nanoparticles (LNPs), especially in vaccines and gene-therapy formulations.	100 mg 500 mg	460 1500
	1901	DODAP Oil CAS 127512-29-2 • C ₄₁ H ₇₇ NO ₄ FW 648.1 <i>i</i> Ionizable cationic lipid widely used in lipid nanoparticle (LNP) formulations for nucleic acid delivery.	100 mg 200 mg	200 330



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