

MODIFIED OLIGOS

Comprehensive Modifications and Labeling Precision and Consistency for Reliable Results

Synbio Technologies offers a range of services to enhance oligonucleotide synthesis and modifications. We specialize in modifying oligos with various elements such as special bases, dU/di, phosphorothioates, phosphorylation, spacers, amino linkers, disulfide linkers, biotin, and more. Additionally, our services include incorporating multiple fluorescent groups and quenchers at 3', 5', or customer-specified sites. Popular options include FAM, HEX, ROX, BHQ, Texas Red, and many others. These modified oligos find applications in PCR, cloning, sequence verification, gene detection, and other diverse areas.



We offer a flexible oligo synthesis process that allows for the addition of various functional modification groups at specific positions. These modifications serve different purposes and cater to a wide range of molecular biology studies. Our modification options include non-fluorescent, fluorescent, quenching, chemical, and click-chemistry modifications. You can choose from 5', 3', and intermediate modifications based on your specific requirements.

UNBEATABLE ADVANTAGES

EXPERIENCE THE SYNBIO TECH DIFFERENCE.



High quality, quick turnaround, and affordable pricing.



Various synthesis scales with seven purification options and multiple delivery forms.



ISO 9001 & ISO 13485
Certified quality control ensures reliability.



Professional support: our dedicated team is ready to assist you every step of the way.



Multiple purification options: including DSL, PAGE Plus, PAGE, RP-HPLC, IE-HPLC, and Dual HPLC.



Comprehensive modifications and labeling: large-scale sequencing verifies the average mutation rate to be lower than 1/1000.

GENERAL MODIFICATIONS

Synbio Technologies offers a wide range of general modifications, ensuring high purity and competitive pricing. We prioritize fulfilling requests for modifications with special chemical classifications. Please see the list of our general modifications.

Classification	Modifications	Purification
Modified Bases	dU	HPLC/PAGE
	dI	
	5 - Methyl dC	
DBCO	5' DBCO	
	3' DBCO	
	dT - DBCO	
AMCA	5' AMCA	
	3' AMCA	
	dT - AMCA	
Phosphorothioates	SPO3	
Amino Linkers	5' Amino C6	
	dT - Amino C6	
	3' Amino C7	
	5' Amino C12	
Biotin	5' Biotin	
	3' Biotin	
	dT - Biotin	
Digoxigenin	5' Digoxigenin	
	3' Digoxigenin	
	dT-Digoxigenin	
Phosphorylation	5' PO4	
	3' PO4	
Hydrosulphonyl	5' HS-C6	
	3' HS-C3	
Locked Nucleic Acid	LNA (A/G/C/U)	
Fluoro Bases	2' - F - 2' - dA	
	2' - F - 2' - dC	
	2' - F - 2' - dG	
	2' - F - 2' - dU	
Spacer	dSpacer	
	Spacer C3	
	Spacer C9	
	Spacer C18	

GENERAL MODIFICATIONS

We provide 5', 3', and intermediate modifications according to your needs.

Modification	5' Mods	Internal Mods	3' Mods
dI	√	√	√
dU	√	√	√
N6-Me-dA	√	√	√
ddC	—	—	√
AMCA	√	—	√
Inverted dT	—	—	√
S	—	√	—
LNA X (X: A/T/C/G)	√	√	√
Fluoro X (X: A/U/C/G)	√	√	√
dSpacer	√	√	√
PHO	√	—	√
GalNAc (TEG)	—	—	√
Methyl dC	√	√	√
Azide (N3)	√	√	√
DBCO	√	√	√
Tz	√	—	√

*The above is our suggested purification method. If you need other purification methods, please contact us for a [quote](#).

GENERAL MODIFICATIONS

We offer oligos with 200+ modification types.

Non-Fluorescent Modification	Fluorescent	Quenching	Chemistry	Electrochemistry
Amino C6	FAM	BHQ1	DBCO	BM
Amino C12	HEX	BHQ2	N3.	FC
Phosphorylation	VIC	BHQ3	Alkynyl	Ru
Biotin	TET	TAMRA	Maleimide	
Digoxigenin	JOE	MGB	SH	
Spacer 18/C3/C6/C9	TAMRA	Dabcyl	TCO	
Spacer C3	ROX	Dabsyl	Tz	
Cholesterol	CY3	Eclipse	Amino	
Puromycin	CY5		COOH	
mA/mG/mC/mU	CY7			
MOE-A/G/C/T	NED			
LNA-+A/+G/+C/+T	ATTO			
GalNAc-TEG	Alexa			
ddC	TXR			

Standard Deliverables

1. Lyophilized dry DNA oligo powder
2. 1 tube (Transparent or dark) or 96-well and 384-well plate
3. Certificate of Analysis (COA) including sequencing information, OD, Tm, etc.

SINGLE LABELING

Synbio Technologies provides multiple fluorescent groups at 3', 5', or designated sites to comply with our customer's requests. This includes FAM, HEX, ROX, BHQ, Texas Red, and more.

Dye/Quenchers	3'	5'	Designated Sites	Purification	
				(10-45 bp)	(46-80 bp)
FAM	√	√	√	RP-HPLC	RP-HPLC/ Dual RP-HPLC
TET	√	√	√		
JOE	√	√	√		
HEX	√	√	√		
SIMA	√	√	√		
TAMRA	√	√	√		
ROX	√	√	√		
Cy5	√	√	√		
Cy3	√	√	√		
Quasar570	√	√	–		
Quasar670	√	√	–		
DyLight547	–	√	–		RP-HPLC
DyLight647	–	√	–		
Texas Red	–	√	–		
BHQ-1	√	–	–		Dual RP-HPLC
BHQ-2	√	–	–		
BHQ-3	√	–	–		
Eclipse	√	–	–		
DABCYL	√	–	–		

DUAL/MULTIPLE LABELING

Synbio Technologies also offers dual/multiple labeling services including TAMRA, BHQ, DABYCL, ECLIPSE, and more. The most common Dyes and Quenchers are listed below:

Dyes	Quenchers	Purification	
		(10-45 bp)	(46-80 bp)
5' 6-FAM	3' TAMRA	Dual RP-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-1	RP-HPLC & IE-HPLC	
	3' Eclipse		
	3' DABCYL		
5' TET	3' TAMRA	Dual RP-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-2	RP-HPLC & IE-HPLC	
	3' DABCYL		
5' HEX	3' TAMRA	Dual RP-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-1	RP-HPLC & IE-HPLC	
	3' BHQ-2		
	3' DABCYL		
5' TAMRA	3' Eclipse	RP-HPLC & IE-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-1		
	3' BHQ-2		
	3' DABCYL		
5' ROX	3' Eclipse	RP-HPLC & IE-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-1		
	3' BHQ-2		
	3' DABCYL		
5' CY5	3' BHQ-1	RP-HPLC & IE-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-2		
	3' BHQ-3		
	3' DABCYL		
5' CY3	3' BHQ-2		
5' JOE	3' Eclipse	RP-HPLC & IE-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-1		
	3' BHQ-2		
	3' DABCYL		
5' Texas Red	3' TAMRA	Dual RP-HPLC	RP-HPLC & IE-HPLC
	3' BHQ-2	RP-HPLC & IE-HPLC	

Standard Deliverables

1. Lyophilized dry DNA oligo powder
2. 1 tube (Transparent or dark) or 96-well and 384-well plate
3. Certificate of Analysis (COA) including sequencing information, OD, T_m, etc.

Ordering Details/Requirements

- Oligo Sequence
- Modifier Type and Position
- Purification Method
- Synthesis Scale

At Synbio Technologies, our oligo synthesis platform equips state-of-the-art synthesizers and leading professional teams experienced in synthesis and modification technologies. This allows us to provide high-quality oligo products to scientific researchers and industrial customers around the world. By leveraging our advanced and innovative manufacturing process, Synbio Technologies offers a wide range of oligonucleotide synthesis options, including custom DNA oligos, diagnostic oligos & probes, NGS oligos, modified oligos, antisense oligos, and CpG ODNs. We also provide high-throughput oligo library and oligo pool synthesis to customers with large-scale oligo projects. With over a decade of experience in the field of synthetic biology, Synbio Technologies is your trusted partner for all your synthetic biology needs.