Fluorescent Molecular Primers & Probes

UNIQUE CAPABILITIES

Gene Link's proprietary synthesis and processing methods for fluorescent dyes yield primers and probes of superior quality. Gene Link offers synthesis of various forms of molecular primers and probes.

We provide technical service in the design of novel probes and synthesize numerous combinations of dyes, quenchers, RNA, phosphorothioate, 2'-O-methyl and chimeric probes.

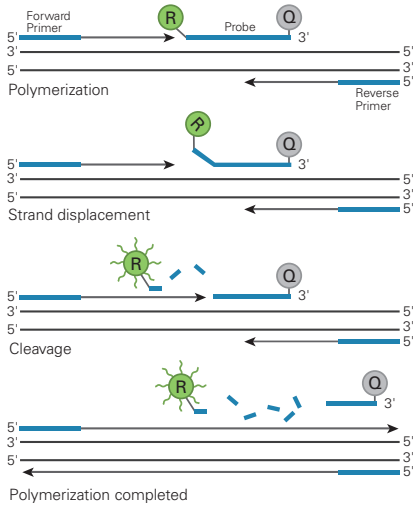
All fluorescent dye-labeled oligos are monitored for coupling efficiency. Many dye conjugations are available. Fluorescent primers are shipped in amber tubes to protect photosensitive primers.

Fluorescent Primers

Fluorescent primers are extensively used for genotyping, SNP genotyping, allelic discrimination and fragment analysis. Gene Link synthesizes all types of dye labeled primers and probes.

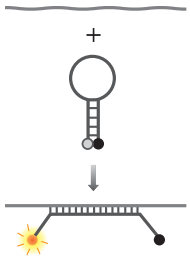
TaqMan Probes

TaqMan (also known as Fluorogenic 5' nuclease assay) probes contain two dyes, a reporter dye (e.g. 6-FAM) at the 5' end and a 3' acceptor dye, usually TAMRA or a Black Hole Quencher.



Molecular Beacons

Molecular Beacons synthesized by Gene Link have better than 50:1 signal to background ratio, usually in the range of 200. The purity is greater than 99% as judged by polyacrylamide gel electrophoresis. All dye conjugations are available. Please see our web site for complete details and specifications.



Purification

Gene Link recommends gel purification of all modified primers and probes.

ORDER ONLINE AT WWW.GENELINK.COM

Gene Link™

Gene Link | 1-800-GENE LINK | www.genelink.com | 140 Old Saw Mill River Road, Hawthorne NY 10532

Applications and Modifications

Application	Recommended Modifications
Real-Time PCR probes, QPCR	• C-5 methylated pyrimidine deoxynucleosides behave similar to LNA bases in imparting duplex stability. • The use of LNA bases renders the probe greater duplex stability than the use of single MGB (minor groove binders) at the 3' end. It is an excellent substitute for TaqMan MGB probes. • All types of fluorescent dyes and backbone modifications can be performed for *in situ* detection.
SNP Genotyping, Allelic Discrimination	• LNA substituted bases impart greater specificity with higher T_m. • All types of fluorescent dyes and backbone modifications can be performed. • C-5 methylated pyrimidine deoxynucleosides behave similar to LNA bases in imparting duplex stability.

Fluorophore Spectral Data & Quencher Selection Guide

Fluorophore Name	Excitation Max, nm	Emission Max, nm	Extinction coefficient*	Color**	Quencher
AFDye-350 NHS	346	445	19,000	Blue	Dabcyl λ (max) = 453 nm Range = 380-530 nm
AFDye-405 NHS	402	424	33,000		
MBlue-460 NHS	362	459	20,000	Blue-Green	
FAM	495	520	75,850	Green	BHQ-1 λ (max) = 534 nm Range = 480-580 nm
TET	521	536	99,000		
AFDye-430 NHS	430	539	15,000		
Yakima Yellow	531	549	83,800	Yellow-Orange	
AFDye-532 NHS	530	555	81,000		
HEX	535	556	98,000		
Cy3	550	570	150,000	Yellow-Orange	BHQ-2 λ (max) = 579 nm Range = 550-650 nm
TAMRA	555	576	65,000		
Cy3.5	581	596	150,000		
Cal Red 610	590	610	108,000	Orange-Red	
TXRed-616 NHS	589	616	69,000		
AFDye-594 NHS	590	617	92,000		
Cy5	649	670	250,000	Near-IR region. Human vision is insensitive to light beyond ~650 nm; it is not possible to view near-IR	BBQ-650 λ (max) = 650nm Range = 550-750 nm
Cy5.5	675	694	190,000		
AFDye-680 NHS	678	701	185,000		
Cy7 NHS	750	773	199,000		
Cy7.5 NHS	788	808	223000		

* Extinction coefficient at λ (max) in cm–1M–1. ** Typical emission color seen through the eyepiece of a conventional fluorescence microscope with appropriate filters.

*

The Gene Link Advantage

- Stringent Quality Control Measures
- All combinations of Dyes, Modifications and Quenchers Available
- Chimeric Fluorescent Molecular Probes Synthesized
- Polyacrylamide Gel Picture of Each Primer and Probe
- All Oligo Types With Dyes and Quenchers Synthesized
- Easy Online Ordering System
- Shipped in Amber Tubes to Prevent Photo-bleaching
- Knowledgeable Technical Support
- Personalized, Friendly Customer Service

GOLD STANDARD

Expert Design Assistance

Gene Link routinely assists customers in designing novel probes with unique properties. Contact us if you require assistance.