Technical Note

Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos,
Fluorescent dye labeled oligos, Molecular Beacons, TaqMan Probes
Locked Nucleic Acids (LNA), siRNA, Aptamers

Fluorescent Molecular Probes
Reconstitution & Stability

For research use only. Not for use in diagnostic procedures for clinical purposes.

Oligo Types & Modifications

Molecular Beacons
TaqMan® Probes
Aptamers
RNA Probes
Fluorophores & Quenchers
Propyne dC and dU labeled Oligos
Phosphorothioate Oligos
2'-5' linked Oligos
Methylated Oligos

Applications

Real Time Quantitative PCR Analysis (QPCR) Probes
Fluorescent Genotyping
siRNA Gene Knockout Validation
Allelic Discrimination
Antisense Targeting
SNP Detection
Aptamers Detection Probes

Gene Link™

Reconstitution & Stability of Fluorescent Probes

All Gene Link custom oligo products including, molecular probes, RNA and siRNA includes a datasheet that contains the exact nmols, µg, A_{260} units(OD Units) and other physical data. This data is important for reconstituting the product. All fluorescent probes are shipped in amber tubes to prevent exposure to light and minimize photobleaching. Gene Link guarantees the stability of oligos for 1 year and fluorescent molecular probes for 6 months if reconstituted and stored appropriately as detailed below.

In our experience unmodified oligos are stable for numerous years if reconstituted and stored properly. Avoid multiple freeze thaws; do not exceed 6-10 freeze thaw cycles. If the same oligo is intended to be used repeatedly then it is prudent to make numerous aliquots of the stock solution and frozen.

Reconstitution & Storage
Gene Link oligos are supplied lyophilized. These are stable at room temperature for an extended period of time. The oligonucleotide should preferably be frozen upon receipt. TE buffer (10mM Tris, 1mM EDTA, pH 7.5) is recommended for dissolving the oligonucleotides; EDTA inhibits the activity of the nucleases.

Preferred TE Buffer Reconstitution & Storage pH for Fluorescent Probes	
6-FAM, HEX, TET, ROX, and TAMRA	TE Buffer pH 7.5 or 8.0
Cy3, Cy3.5, Cy5, and Cy5.5	TE Buffer pH 7.0 or 7.5
Cy dyes rapidly degrade in acidic pH	

Further dilution can be made in TE buffer. After reconstitution store the stock solution at -80°C or -20°C. Fluorescently labeled oligos should be stored in light-free conditions.

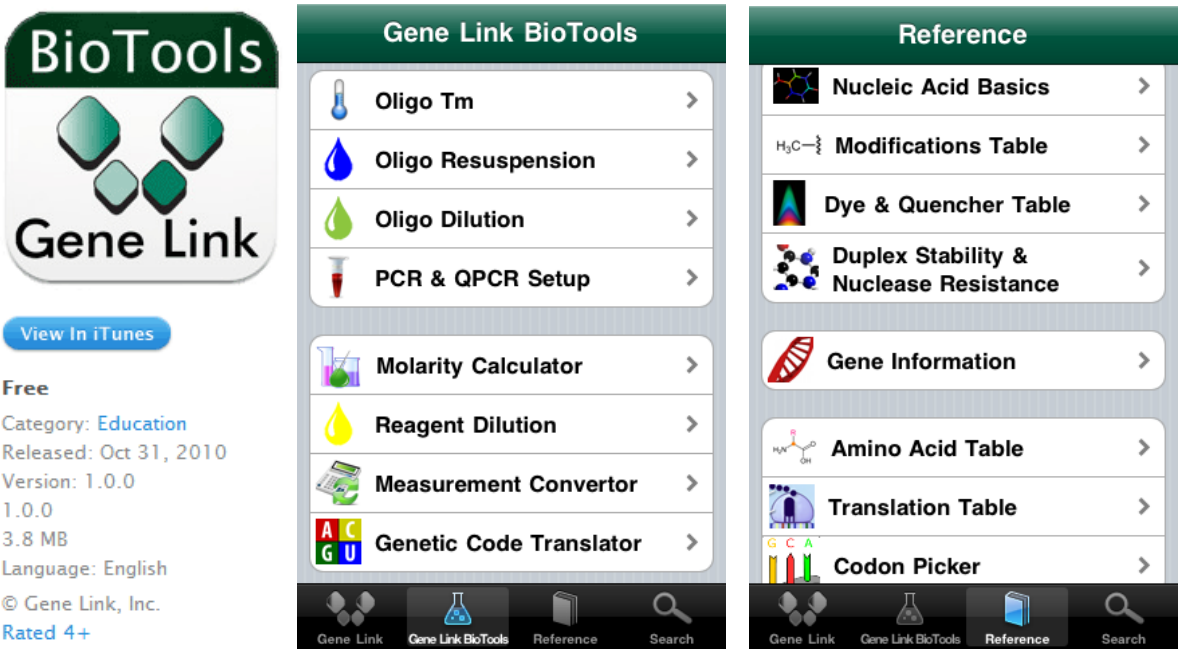
Sterile water with a pH of 7.5 can also be used if desired to avoid EDTA and Tris. Note that standard water mostly has an acidic pH.

Preparation of Stock Solution of 100 pmols/µl [100µM]
Gene Link provides the exact amount of nmols of each oligo supplied on the tube and on the Oligo Report. Multiply the 'nmol' amount by 10 to arrive at the volume of TE to be added.
Example: 45.10nmols x 10 = 451µl
Dissolve the oligo in 451µl to get 100pmols/µl stock solution.
Use as required.
Dilute 10 fold to prepare a 10pmols/µl [10µM]. Use as required.

For optimal long-term storage, it is recommended that the oligonucleotides should be stored dry at -20°C in the dark. If numerous experiments are planned using the same oligonucleotide, prepare aliquots, dry them and store the aliquots at -20°C.

Stability
Gene Link guarantees the stability of oligos for 1 year and fluorescent molecular probes for 6 months if reconstituted and stored appropriately as recommended by Gene Link. The stability can be increased several fold by instituting proper handling conditions, avoiding exposure to light and multiple freeze thaws.

BioTools application from Gene Link for iPhone / iPod / iPad
BioTools: An Array of Genetic Tools



The BioTools app also has advanced modules for setup of Polymerase Chain Reaction (PCR) and Quantitative Real Time PCR (Q-PCR).

The main focus of this app is to have a handy source of calculation modules and quick reference sections for designing and executing experiments involving PCR and Q-PCR.

BioTools	Reference
1. Oligo Tm: A robust oligo melting temperature calculation module using three methods; it also calculates other physical attributes. 2. Oligo Resuspension 5. Oligo Dilution 6. PCR & QPCR: Convenient calculator for multiple reaction setup for PCR, TaqMan QPCR and Molecular Beacon QPCR setup. Includes stock solution information and cycling profiles 7. Molarity Calculator 8. Reagent Dilution 9. Measurement Convertor: A convenient selection of calculators to convert length, area, mass, temperature and volume units. 10. Genetic Code Translator: Enter DNA sequence to see coding pattern.	A selection of topics, relevant to life scientists for quick access to basic information. This section includes the following sections and sub sections. 1. Nucleic Acid Basics 2. Modifications Table: A list of common modifications with molecular structure and basic properties. 3. Dye & Quencher Table: A convenient list of fluorophores and quencher matching the emission max. 4. Duplex Stability & Nuclease Resistance 5. Gene Information: Simply enter the accession number and retrieve detailed gene information from NCBI database, 6. Amino Acid Table: Molecular structure and detailed physical properties of all amino acids. 7. Translation Table: Genetic code for all amino acids. 8. Codon Picker: Select codon sequence and see the corresponding amino acid and detailed information.