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TAMRA phosphoramidite, 6-isomer

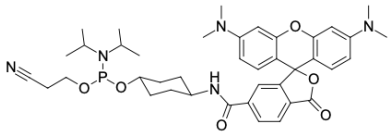
http://www.lumiprobe.com/p/tamra-phosphoramidite-6

This phosphoramidite is used for synthesis of oligonucleotides 5′-labeled with TAMRA.

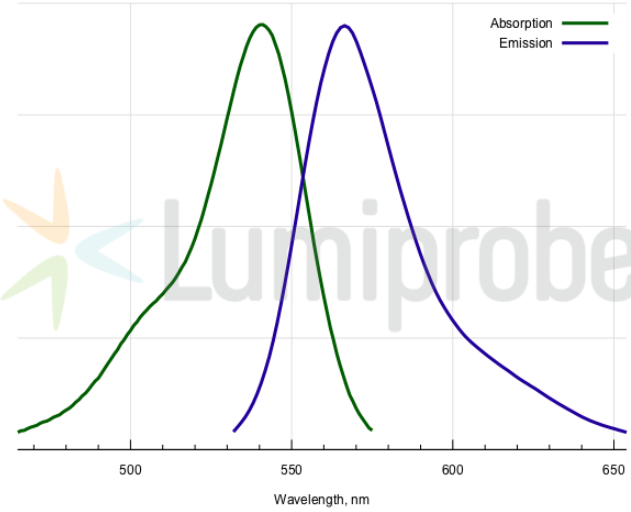
TAMRA (carboxytetramethylrhodamine) is a xanthene dye from the rhodamine family with emission in the orange spectrum range (maximum at 563 nm). This fluorophore is traditionally used as a FRET-acceptor (and a quencher) in a pair with fluorescein (FAM) due to significant overlapping of their spectra. Thus, this phosphoramidite is convenient for the synthesis of dual-labeled probes TaqMan, which contain 5′-terminal TAMRA and FAM in the middle of the sequence or at the 3′-end (using Fluorescein dT Phosphoramidite and FAM CPG, respectively).

TAMRA 5′-labeled oligonucleotides are commonly used for quantitative PCR and fragment analysis (for example, for microsatellite marker analysis) because the equipment available has a detection channel for TAMRA frequently.

The TAMRA dye is not stable in the presence of ammonium and sterically non-hindered primary amines, so it is strongly recommended to follow specified conditions for labeled oligonucleotide deprotection.



Structure of TAMRA phosphoramidite, 6-isomer



Absorption and emission spectra of 6-TAMRA

General properties

Appearance:	red solid
Mass spec M+ increment:	589.60
Molecular weight:	727.83
Molecular formula:	$C_{40}H_{50}N_5O_6P$
Solubility:	good in acetonitrile, DCM
Quality control:	NMR ^{1}H and ^{31}P, HPLC-MS (95%), functional testing
Storage conditions:	Storage: 12 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Avoid prolonged exposure to light. Desiccate.
Legal statement:	Product is offered and sold for research purposes only. Product is not tested for safety and efficacy in food, drug, medical device, cosmetic, no express or implied authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, for humans or animals or for commercial purposes.

Spectral properties

Excitation/absorption maximum, nm:	541
ε, $L \cdot mol^{-1} \cdot cm^{-1}$:	84000
Emission maximum, nm:	567

CF_{260}:	0.32
CF_{280}:	0.19

Oligo synthesis details

Coupling conditions:	coupling time 7.5 min
Deprotection conditions:	Tret-buthylamine : methanol : water 1 : 1 : 3 (v/v/v) («TAMRA cocktail») for 6 hours at 60 °C, then cool down to room temperature. Due to complete and irreversible degradation of the TAMRA dye, do NOT use aqueous ammonium and AMA for deprotecting a modified oligonucleotide from the solid-phase support.