

Cyanine3 phosphoramidite

<http://www.lumiprobe.com/p/cy3-phosphoramidite-5>

Cyanine3 is a fluorophore that is widely used in molecular biology experiments such as oligonucleotide labeling followed by oligonucleotide detection. By its spectral characteristics, Cyanine3 is a dye with a fluorescence maximum at 570 nm in the yellow spectrum range.

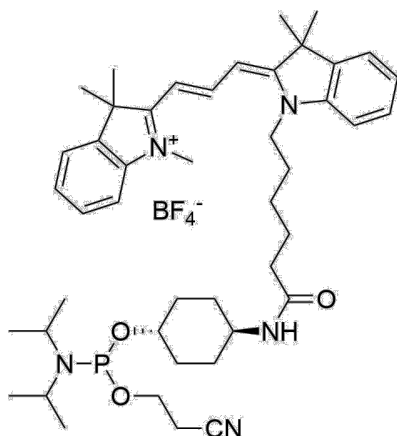
Cyanine3 phosphoramidite 5' is used in oligonucleotide synthesis for the production of 5'-cyanine3-labeled oligonucleotides. The reagent is compatible with various oligonucleotide synthesizers.

This phosphoramidite can be used for the synthesis of fluorescence-labeled primers and hybridization probes such as TaqMan and Molecular Beacon. Such labeled probes can be detected in multiplex real-time PCR in the TAMRA channel.

Usage:

Condensation: 3 min. Use 0.02 M iodine solution at the oxidation step to avoid degradation of the cyanine dye.

Deprotection: At room temperature with 30% aqueous ammonium solution. It is recommended to use nucleic bases with labile protective groups for deprotection for not more than 2 h at less than 55°C. AMA (30% aqueous ammonium solution/40% aqueous methylamine 1:1 (v/v)) can be used for 10 min at 65°C in the presence of acetyldeoxycytidine. If deoxyguanine with a dimethylformamidinium protective group is used during synthesis, deprotect with 30% aqueous ammonium solution for 2 h at 65°C. If deoxyguanine with an isobutyryl protective group is used during synthesis, deprotect for 24-36 h at room temperature.



Structure of Cyanine3 phosphoramidite

General properties

Appearance:	red powder
Molecular weight:	841.81
Molecular formula:	C ₄₅ H ₆₅ N ₅ BF ₄ O ₃ P
Solubility:	good in acetonitrile, dichloromethane
Quality control:	NMR ¹ H, ³¹ P, HPLC-MS (80%)
Storage conditions:	Storage: 12 months after receipt at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Avoid prolonged exposure to light. Desiccate.

Spectral properties

Excitation/absorption maximum, nm:	555
ε, L·mol ⁻¹ ·cm ⁻¹ :	150000
Emission maximum, nm:	570

Fluorescence quantum yield:	0.31
CF ₂₆₀ :	0.04
CF ₂₈₀ :	0.09

Oligo synthesis details

Diluent:	acetonitrile
Coupling conditions:	6 min coupling time recommended
Deprotection conditions:	recommended 48 h at +4°C or ultramild protective groups; 24 h at rt possible

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