Lumiprobe Corporation
201 International Circle, Suite 135
Hunt Valley, Maryland 21030
USA
Phone: +1 888 973 6353
Fax: +1 888 973 6354
Email: order@lumiprobe.com

HEX phosphoramidite, 6-isomer

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

HEX phosphoramidite for oligonucleotide synthesis, pure 6-isomer.

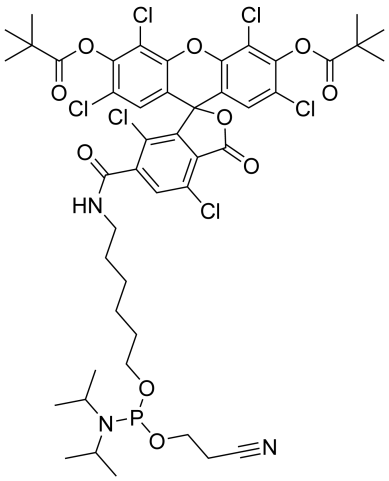
HEX (hexachlorofluorescein) is a fluorescein derivative with emission in the yellow spectrum range (absorption maximum at 533 nm, emission maximum at 549 nm).

HEX phosphoramidite is used for synthesis of fluorescent-labeled primers and hybridization probes such as TaqMan, Molecular Beacon, and Scorpion for qPCR. HEX is most effectively quenched by non-fluorescent DusQ 1 dark quencher because of significant overlapping of their spectra (convenient for use with DusQ 1 CPG 500 solid support with a pore size of 500 Å). Many automated sequencers based on capillary gel electrophoresis have a detection channel for HEX. Therefore, this phosphoramidite is commonly used for synthesis of 5'-labeled oligonucleotides for fragment analysis, particularly for microsatellite analysis, when microsatellite loci are amplified using a fluorescent-labeled forward primer and a non-labeled reverse primer.

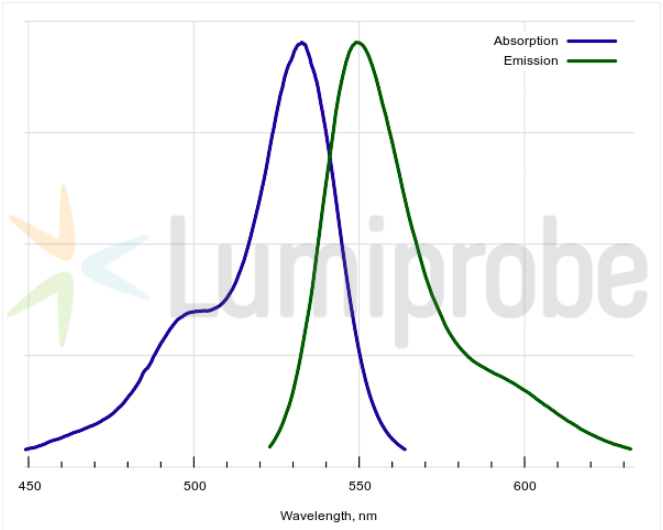
Usage

Coupling: 3 min.

Deprotection: standard conditions using 25% ammonium; deprotection time depends on oligonucleotide composition and nucleobase protecting groups (deprotection for 17 h at 55 °C removes all protecting groups from standard nucleobases). AMA (solution of concentrated aqueous ammonium/40% aqueous methylamine 1:1 v/v) can be used with ~5% of non-fluorescent side product forming. To avoid formation of the side product, start deprotection with ammonium hydroxide (30 min at room temperature), then add an equal volume of 40% aqueous methylamine and continue deprotection as required with AMA (e.g. 10 min at 65 °C).



Structure of HEX phosphoramidite, 6-isomer



Absorption and emission spectra of HEX

General properties

Appearance:	off white solid
Molecular weight:	1050.61
CAS number:	1360547-55-2
Molecular formula:	$C_{46}H_{52}N_3Cl_6O_{10}P$
Solubility:	Good solubility in acetonitrile and DCM
Quality control:	NMR ^1H and HPLC-MS (95+%)
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:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.

Spectral properties

Excitation/absorption maximum, nm:	533
ε, $L \cdot mol^{-1} \cdot cm^{-1}$:	87770
Emission maximum, nm:	549
Fluorescence quantum yield:	0.57
CF_{260}:	0.30
CF_{280}:	0.13

Oligo synthesis details

Diluent:	anhydrous acetonitrile (prepare a 0.1 M solution, storage 1 week).
Coupling conditions:	standard coupling, identical to normal nucleobases
Deprotection conditions:	identical to protected nucleobases