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SIMA phosphoramidite, 6-isomer

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

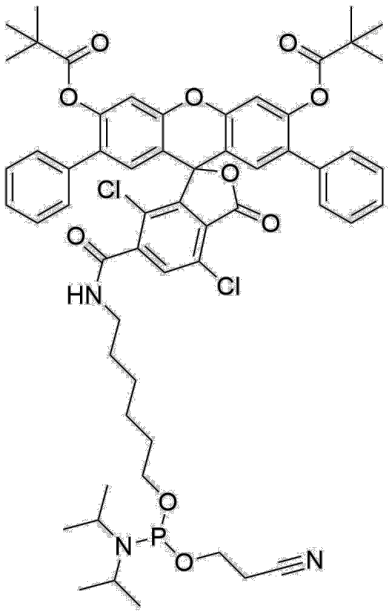
SIMA (dichloro-diphenyl-fluorescein) is a xanthene dye with spectral characteristics similar to those of HEX but with a higher quantum yield. SIMA has higher stability during deprotection under alkaline conditions, so deprotection can be run with aqueous ammonium hydroxide at higher temperatures or with AMA (1:1 mixture, concentrated aqueous ammonium hydroxide/40% aqueous methylamine) at room temperature for 2 h or 65°C for 10 min. When used for deprotection with aqueous ammonium hydroxide at 55°C overnight, oligonucleotide-bound SIMA does not degrade, while with HEX the fluorophore degrades by at least 10%.

SIMA phosphoramidite is used in oligonucleotide synthesis to produce fluorescently labeled primers and hybridization probes for quantitative PCR.

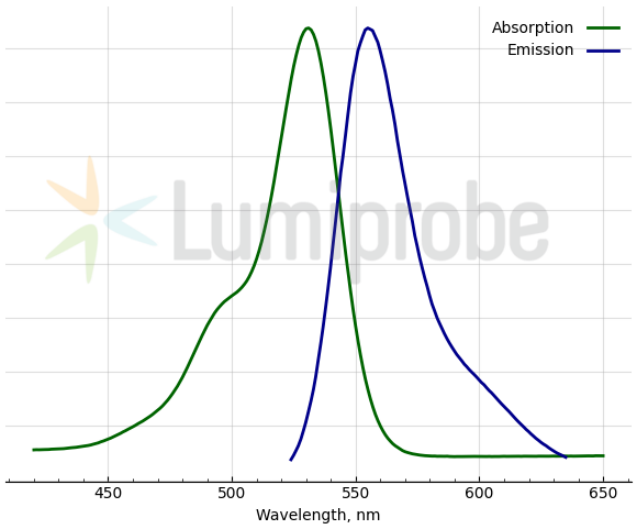
Recommendations for using the reagent:

Coupling: 3 min.

Deprotection: Standard conditions with 25% ammonium hydroxide; deprotection time depends on the composition of nucleic acids and their protective groups. AMA (1:1 mixture of concentrated aqueous ammonium hydroxide / 40% aqueous methylamine) can be used for 2 hours at room temperature or 10 min at 65°C.



Structure of SIMA phosphoramidite, 6-isomer



Absorption and emission spectra of SIMA

General properties

Appearance:	white powder
Mass spec M+ increment:	757.1
Molecular weight:	1065.02
CAS number:	1411797-05-1
Molecular formula:	$C_{58}H_{64}N_3Cl_2O_{10}P$
Solubility:	Good solubility in acetonitrile and DCM
Quality control:	NMR ^{1}H and ^{31}P, HPLC-MS (95%)
Storage conditions:	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:	531
ε, $L \cdot mol^{-1} \cdot cm^{-1}$:	92300
Emission maximum, nm:	555
Fluorescence quantum yield:	0.63
CF_{260}:	0.57
CF_{280}:	0.18

Oligo synthesis details

Diluent:	anhydrous acetonitrile
Coupling conditions:	3 minute coupling time recommended
Deprotection conditions:	identical to protected nucleobases