Lumiprobe Corporation
115 Airport Dr Suite 160
Westminster, Maryland 21157
USA
Phone: +1 888 973 6353
Fax: +1 888 973 6354
Email: order@lumiprobe.com

FAM phosphoramidite, 6-isomer

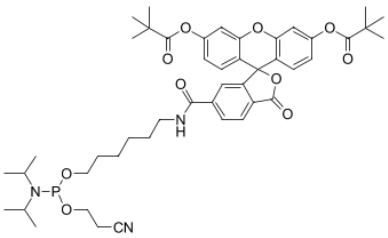
http://www.lumiprobe.com/p/6-fam-phosphoramidite

FAM (fluorescein) phosphoramidite 6-isomer is specifically designed for incorporation at the 5′-end of oligonucleotides, which is essential for many biochemical assays and applications. It is primarily utilized for labeling oligonucleotides, enhancing their visibility in various assays such as PCR, sequencing and hybridization studies. It is commonly employed in real-time PCR assays where fluorescent signals are monitored during amplification. The incorporation of FAM at the 5′-end allows for efficient monitoring of the reaction progress through fluorescence.

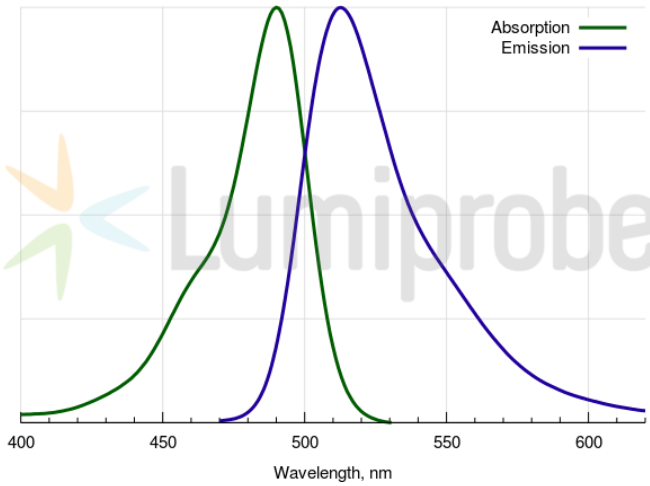
FAM emits fluorescence with a maximal emission wavelength around 517 nm, which is ideal for various detection methods. It can be quenched by agents like DusQ 1 or DABCYL, allowing for applications in assays that require precise control over fluorescence signals.

Internal sequence additions can be achieved using modified nucleotides such as FAM-dT phosphoramidite, allowing for flexible design of probes with multiple fluorescent tags while maintaining effective spacing. However, it is essential to include spacers between the labels to prevent self-quenching of fluorescence signals, which can occur due to close proximity.

The dye soluble in common organic solvents such as acetonitrile, DCM, DMF, DMSO. Once conjugated to biomolecules, the resulting FAM conjugates can be used in aqueous applications.



6-FAM phosphoramidite structure



FAM absorbance and emission spectra

General properties

Appearance:	off-white solid
Molecular weight:	843.94
CAS number:	204697-37-0
Molecular formula:	$C_{46}H_{58}N_3O_{10}P$
Solubility:	acetonitrile, DCM, DMF, DMSO
Quality control:	NMR ^{1}H and ^{31}P, HPLC-MS (95+%), isomeric purity > 97%
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:	492

ε, $L \cdot mol^{-1} \cdot cm^{-1}$:	74000
Emission maximum, nm:	517
Fluorescence quantum yield:	0.93
CF_{260}:	0.22
CF_{280}:	0.17

Oligo synthesis details

Diluent:	anhydrous acetonitrile (prepare a 0.1 M solution, storage 1 week).
Coupling conditions:	coupling time 10 min
Cleavage conditions:	ammonia, 2 h at room temperature
Deprotection conditions:	identical to protected nucleobases; when AMA is used, deblock with ammonia alone for 30 min, then add methylamine