

FAM phosphoramidite, 6-isomer

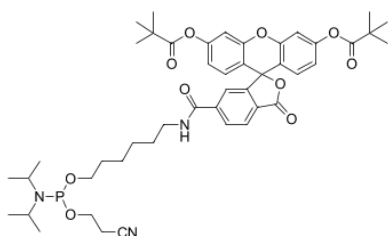
<http://www.lumiprobe.com/p/6-fam-phosphoramidite>

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.

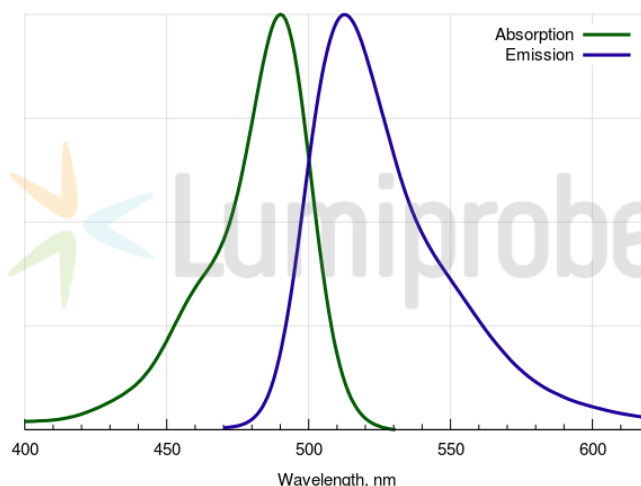
FAM emits fluorescence with a maximal emission wavelength around 517 nm, which is ideal for various detection methods. It can be quenched by agents like [DusQ 1](#) or DABCYL, allowing for applications in assays that require precise control over fluorescence signals.

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 is 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 1H and ^{31}P , HPLC-MS (95+%), isomeric purity > 97%
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.
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·mol ⁻¹ ·cm ⁻¹ :	74000
Emission maximum, nm:	517
Fluorescence quantum yield:	0.93
CF ₂₆₀ :	0.22
CF ₂₈₀ :	0.17

Oligo synthesis details

Diluent:	acetonitrile
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