

## FAM-11-dUTP, 6-isomer

<http://www.lumiprobe.com/p/fam-11-dutp-6>

6-FAM-11-2'-deoxyuridine-5'-triphosphate, trilithium salt, is a common agent for non-radioactive DNA labeling.

FAM (fluorescein) is a popular green-fluorescent dye with an emission maximum at 513 nm. This derivative is a pure FAM 6-isomer.

6-FAM-11-dUTP is a modified triphosphate that can be incorporated into DNA instead of dTTP by various enzymes, including Klenow fragment, Taq-Polymerase, DNA-Polymerase I, Phi 29 Polymerase, reverse transcriptase or terminal transferase.

In contrast to triphosphates with a dye directly linked to aminoallyl-dUTP, this triphosphate contains a linker of 11 atoms between the fluorophore and the nitrogenous base. This linker length prevents FAM-label from potential static quenching and increases the efficiency of nucleotide incorporation during DNA synthesis.

6-FAM-11-dUTP can be used to produce a labeled product during PCR and cDNA synthesis and for labeled DNA-probes synthesis by random primed labeling and Nick-translation. Synthesized fluorescence-labeled DNA probes can be used to detect specific sequences by Southern blot, Northern blot, *in situ* hybridization, or by microarray analysis.



### Absorption and emission spectra of FAM

#### General properties

Appearance:	yellow-greenish solid
Molecular weight:	1013.49
Molecular formula:	C <sub>29</sub> H <sub>39</sub> N <sub>4</sub> Li <sub>3</sub> O <sub>21</sub> P <sub>3</sub>
IUPAC name:	((2R,3S,5R)-5-(5-(3-(6-(3-carboxy-4-(6-hydroxy-3-oxo-3H-xanthen-9-yl)benzamido)hexanamido)prop-1-yn-1-yl)-2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)-3-hydroxytetrahydrofuran-2-yl)methyl hydrogen triphosphate
Solubility:	soluble in water
Quality control:	HPLC-MS (95%), testing in enzymatic reaction
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 and excessive freeze-thaw cycles.

#### Spectral properties

Excitation/absorption maximum, nm:	490
$\epsilon$ , L·mol <sup>-1</sup> ·cm <sup>-1</sup> :	80000
Emission maximum, nm:	513
Fluorescence quantum yield:	0.93
CF <sub>280</sub> :	0.20
CF <sub>280</sub> :	0.17