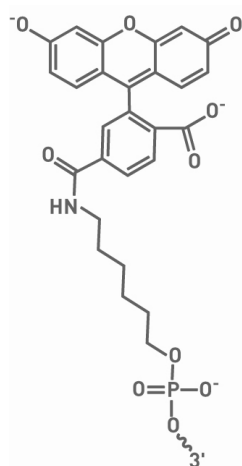


6-FAM™ Fluorescein

Structure



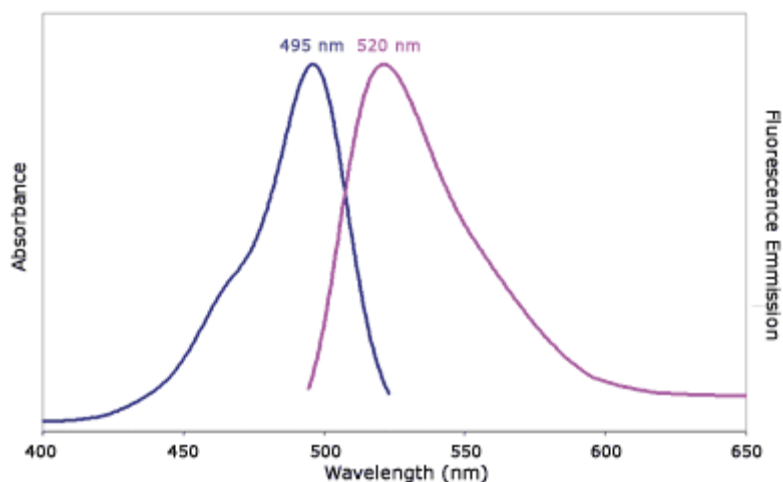
Key data

Ab_{max} 495 nm Em_{max} 520 nm

Extinction Coef (260 nm): 20,960
Extinction Coef (at absorbance max): 75,000

5' MW: 537.5
3' MW: 569.5

Spectra



With permission from IDT

Properties

6-carboxyfluorescein is a single isomer derivative of fluorescein. 6-FAM™ is the most commonly used fluorescent dye for attachment to oligonucleotides and is compatible with most fluorescence detection equipment. Below pH 7, 6-FAM™ becomes protonated, which results in decreased fluorescence. It is typically used in the pH range 7.5-8.5. The quantum yield of fluorescein is measured to 95 % at 0.1 M NaOH at 22 °C with excitation at 496 nm.ⁱ

Stability

Photobleaching

Under high-intensity illumination conditions, the irreversible destruction or photobleaching of the excited fluorophore becomes the factor limiting fluorescence detectability. The multiple photochemical reaction pathways responsible for photobleaching of fluorescein have been investigated and described in considerable details.ⁱⁱ

ⁱ J.R. Lakowicz "Principles of Fluorescence Spectroscopy, 2nd Ed.", Kluwer Academic/Plenum Publishers, New York, London, Moscow, Dordrecht, **1999**; p.53

ⁱⁱ L. Song, C.A. Varma, J.W. Verhoeven, H.J. Tanke "Influence of the triplet excited state on the photobleaching kinetics of fluorescein in microscopy." *Biophys J* **1996**; (70):6 2959-2968