Fluo-3, AM Ester

Membrane-permeant AM ester form of Fluo-3 that can be loaded into cells via incubation. Because of the relatively low water solubility of the AM ester, Pluronic F-127, a mild detergent, is often used as a dispersing agent to facilitate dye loading.



Product attributes

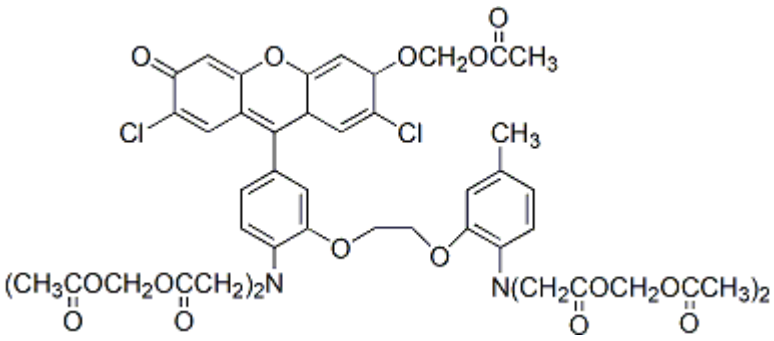
CAS number	121714-22-5
Cell permeability	Membrane permeant
Indicator type	Non-ratiometric
Excitation/Emission	506/526 nm (after hydrolysis)

Product Description

Membrane-permeant AM ester form of Fluo-3 that can be loaded into cells via incubation. Fluo-3 AM ester itself does not bind Ca^{2+}, but it is readily hydrolyzed to Fluo-3 by endogenous esterases once the dye is inside the cells. An important application of Fluo-3 AM ester is its use in high throughput drug screening. For information on Fluo-3, see catalog number 50010.

Because of the relatively low water solubility of the AM ester, Pluronic® F-127 (cat# 59004), a mild detergent, is often used as a dispersing agent to facilitate dye loading. See the product information sheet for more information.

- Orange red solid soluble in DMSO
- Store -20°C and protect from light, especially when in solution
- $C_{51}H_{50}Cl_2N_2O_{23}$
- MW: 1129.9
- Abs/Em (after hydrolysis): 506/526 nm (low or high [Ca^{2+}])
- ε (after hydrolysis): 86,000 M^{-1} cm^{-1} (506 nm)
- K_d (Ca^{2+}) (after hydrolysis): 450 nM
- [121714-22-5]



BAPTA-based ion indicators like Fluo-3 have been shown to be fixable in situ by EDC/EDAC (cat# 59002). The fixation of indicator dyes is useful for downstream immunofluorescence and IHC studies (Cell Calcium 1997, 21(3), 175).

As the indicator does not covalently bind to cellular components, it may be actively effluxed from the cell by organic anion transporters. The rate of efflux increases with temperature, and may vary between cell types, resulting in variable retention times of a few minutes to hours. Experiments using indicators in cells usually are performed within one or two hours of loading, but it may be possible to re-load cells with indicator if needed. The organic anion transporter inhibitor Probenecid (#50027) can be used to slow the rate of indicator efflux from cells.

Pluronic is a registered trademark of BASF.

References

1. Cell Calcium 11, 121 (1990), DOI: 10.1016/0143-4160(90)90065-3
2. J Cell Biol 111, 183 (1990), DOI: 10.1083/jcb.111.1.183
3. J Biol Chem 268, 2134 (1993), DOI: 10.1016/s0021-9258(18)53972-7
4. Methods Cell Biol, 99, 113, (2021), DOI: 10.1016/B978-0-12-374841-6.00005-0