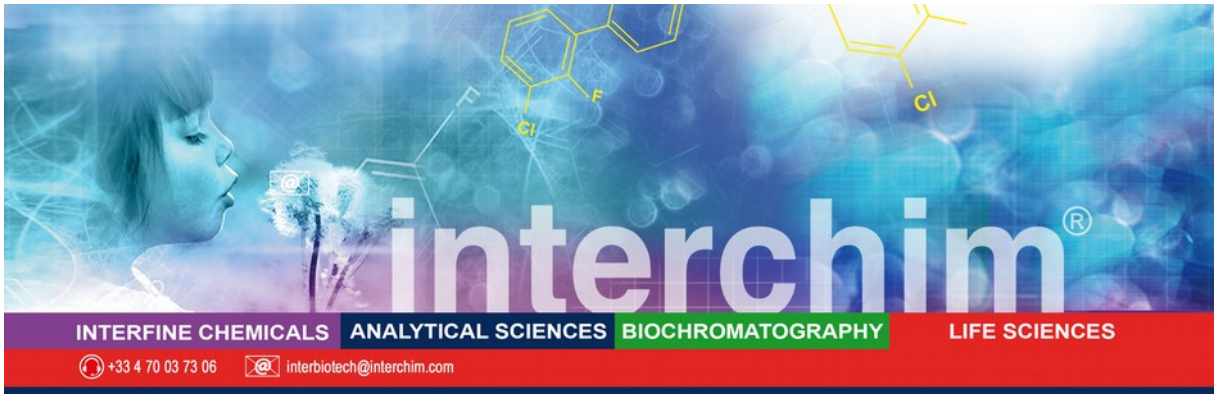
FT-33953A



CFDA

Fluorescein derivatives for general use in pH measurements and cell viability measurements.

Product Information

Product name cat.number	Structure	MW (g·mol^{-1})	λ_{exc}\λ_{em}. max. (nm)	mol. abs. (M^{-1}cm^{-1})	Soluble in
CFDA 5-(and-6)-carboxyfluorescein diacetate **FP-33953A**, 100 mg	$C_{25}H_{16}O_9$	460.4	492 / 517[(a)]	80 000	DMSO
5-CFDA 5-carboxyfluorescein diacetate **FP-M1162A**, 100 mg	$C_{25}H_{16}O_9$	460.4	492 / 517	80 000	DMSO
6-CFDA 6-carboxyfluorescein diacetate **FP-M1163A**, 100 mg	$C_{25}H_{16}O_9$	460.4	492 / 517	80 000	DMSO
5-CFDA, AM ester **FP-91748A**, 5 mg	$C_{28}H_{20}O_{11}$	532.46	492 / 517	80 000	DMSO

(a) pH9.0, after hydrolysis

Storage: CFDA, 5-CFDA, 6-CFDA are stored at –20°C >1 year. (M)
CFDA, AM ester should be stored at +4°C (K)
Protect from light and moisture

Introduction

CFDA (carboxyfluorescein diacetate) contains extra negative charges and is therefore better retained in cells. It is mainly used as a mixture of 5-and 6- isomers for intracellular pH measurements, as both isomers exhibit essentially quite identical pH-dependent spectra with a pKa ~6.5.

CFDA and its AM ester are used for cell viability - including bacteria, fungi (e.g., *Saccharomyces cerevisiae*), spermatozoa, natural killer (NK) cells and tumor cells- apoptosis and cell adhesion monitoring.

CFDA, AM is membrane-permeant and thus can be loaded into cells via incubation. Once inside the cells, CFDA is hydrolyzed by intracellular esterases to carboxyfluorescein (FAM, FP-46641A). CFDA does not fluoresce until acetates hydrolyse, then its fluorescent properties are similar to fluorescein.

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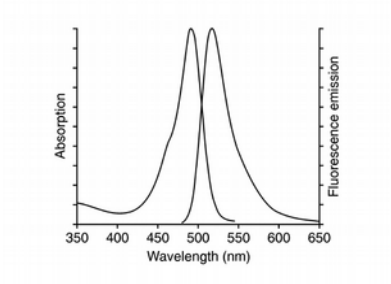

Absorption and emission spectra of carboxyfluorescein (FAM),
final product of CFDA, at pH 9.

Directions for use

Handling and Storage

CDFA should be dissolved in DMSO (10-30mM) and should be stored at –20°C.

Guidelines for use – on mammalian cell staining

1. Prepare a stock solution of 20-30 mM CFDA in DMSO.
2. Wash mammalian cells with HBSS without Ca and Mg and concentrated to 10^7 cells per ml.
3. Stain with 10^7 cells per ml in 650 µM CFDA in HBSS. Incubate at +37°C for 15 min.
4. Stop the reaction by adding HBSS and washing (twice) by centrifugation at 400x g for 10 minutes at room temperature.

Guidelines for use – on yeast cell staining [0]

1. Prepare a stock solution of 20-30 mM CFDA in DMSO.
2. Wash cells, resuspend in buffer containing 100mM citric acid, 200 mM disodium hydrogen phosphate dihydrate, pH4
3. Add CFDA to a final concentration of 43 µM. Incubate cells at 40°C for 15 minutes, then place on ice until analysis.

Other protocol may found in the literature.

Related products

- CFDA-SE, FP-52493A
- FAM, carboxyfluorescein, FP-46641A

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