

PRODUCT INFORMATION



CFSE

Item No. 16802

CAS Registry No.: 92557-80-7

Formal Name: 3',6'-dihydroxy-3-oxo-spiro[isobenzofuran-1(3H),9'-[9H]xanthene]-5-carboxylic acid, 2,5-dioxo-1-pyrrolidinyl ester

Synonyms: 5-Carboxyfluorescein NHS ester, 5-Carboxyfluorescein-N-hydroxysuccinimide ester, 5-Carboxyfluorescein N-Succinimidyl ester, 5-FAM SE, 5-FAM N-succinimidyl ester

MF: C₂₅H₁₅NO₉

FW: 473.4

Purity: ≥95%

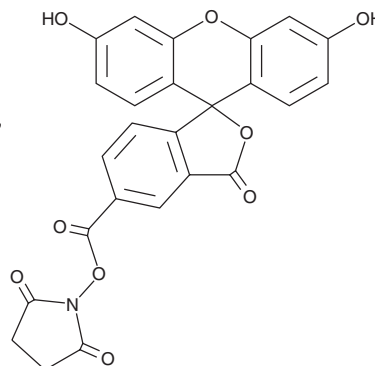
UV/Vis.: λ_{max}: 215, 225, 475 nm

Ex./Em. Max: 491/518 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

CFSE is supplied as a crystalline solid. A stock solution may be made by dissolving the CFSE in the solvent of choice. CFSE is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of CFSE in these solvents is approximately 10 and 5 mg/ml, respectively.

CFSE is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CFSE should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. CFSE has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

CFSE is a fluorescent product of CFDA-SE (Item No. 14456) cleavage by intracellular esterases.¹ CFSE lacks the diacetate groups of CFDA-SE and, as a result, is less cell permeable. CFSE fluorescence is cytoplasmic, and it has excitation/emission maxima of 491 and 518 nm, respectively.² It covalently couples to intracellular molecules *via* its succinimidyl group and can be retained within cells for at least eight weeks. The dilution of CFSE fluorescence resulting from cell division can be used to analyze cell proliferation.³ Its fluorescence can also be used to track cell migration *in vivo*.⁴

References

1. Breeuwer, P., Drocourt, J., Rombouts, F.M., *et al.* A novel method for continuous determination of the intracellular pH in bacteria with the internally conjugated fluorescent probe 5 (and 6-)-carboxyfluorescein succinimidyl ester. *Appl. Environ. Microbiol.* **62**(1), 178-183 (1996).
2. Weston, S.A. and Parish, C.R. New fluorescent dyes for lymphocyte migration studies. Analysis by flow cytometry and fluorescence microscopy. *J. Immunol. Methods* **133**(1), 87-97 (1990).
3. Lyons, A.B. Analysing cell division *in vivo* and *in vitro* using flow cytometric measurement of CFSE dye dilution. *J. Immunol. Methods* **243**, 147-154 (2000).
4. Parish, C.R., Glidden, M.H., Quah, B.J.C., *et al.* Use of the intracellular fluorescent dye CFSE to monitor lymphocyte migration and proliferation. *Curr. Protoc. Immunol.* 4.9.1-4.9.13 (2009).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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