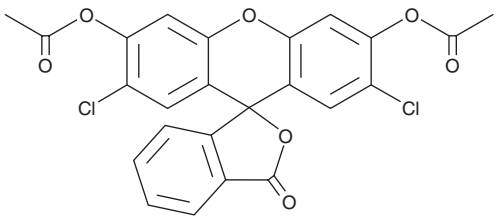
PRODUCT INFORMATION

2',7'-Dichlorofluorescein diacetate

Item No. 20656

CAS Registry No.:	2044-85-1
Formal Name:	3',6'-*bis*(acetyloxy)-2',7'-dichloro-spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one
Synonyms:	DCFDA, MFCD 37501
MF:	$C_{24}H_{14}Cl_2O_7$
FW:	485.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 301 nm
Em./Ex. Max:	492/515 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

2',7'-Dichlorofluorescein diacetate is supplied as a crystalline solid. A stock solution may be made by dissolving the 2',7'-dichlorofluorescein diacetate in the solvent of choice, which should be purged with an inert gas. 2',7'-Dichlorofluorescein diacetate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 2',7'-dichlorofluorescein diacetate in ethanol and DMF is approximately 25 mg/ml and approximately 33 mg/ml in DMSO. The solubility of 2',7'-dichlorofluorescein diacetate in 0.1 M Na_2CO_3 is approximately 5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 2',7'-dichlorofluorescein diacetate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 2',7'-dichlorofluorescein diacetate in PBS (pH 7.2) is approximately 0.02 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

2',7'-Dichlorofluorescein diacetate is a cell-permeable fluorogenic probe to quantify reactive oxygen species (ROS) and nitric oxide (NO).[1,2] It is rapidly de-esterified in cells and oxidized to form fluorescent 2',7'-dichlorofluorescein.[3] 2'7-Dichlorofluorescein displays excitation/emission spectra of 492/515 nm.

References

1. Gabriel, C., Camins, A., Sureda, F.X., *et al.* Determination of nitric oxide generation in mammalian neurons using dichlorofluorescin diacetate and flow cytometry. *J. Pharmacol. Toxicol. Methods* **38(2)**, 93-98 (1997).
2. Owusu-Ansah, E., Yavari, A., and Banerjee, U. A protocol for in vivo detection of reactive oxygen species *Protocol Exch.* (2008).
3. Tetz, L.M., Kamau, P.W., Cheng, A.A., *et al.* Troubleshooting the dichlorofluorescein assay to avoid artifacts in measurement of toxicant-stimulated cellular production of reactive oxidant species. *J. Pharmacol. Toxicol. Methods* **67(2)**, 56-60 (2013).

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