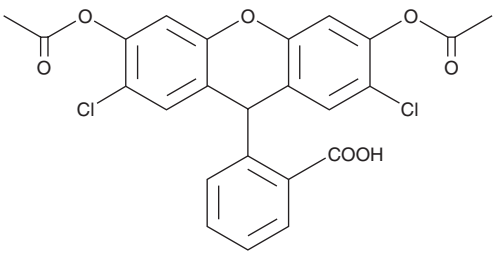
PRODUCT INFORMATION

2,7-Dichlorodihydrofluorescein diacetate

Item No. 85155

CAS Registry No.:	4091-99-0
Formal Name:	2-(2,7-dichloro-3,6-diacetyloxy-9H-xanthen-9-yl)-benzoic acid
Synonyms:	DCFH, DCFH-DA
MF:	$C_{24}H_{16}Cl_2O_7$
FW:	487.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 258 nm
Ex./Em.:	502/523 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

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

DCFH-DA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, DCFH-DA can be directly disolved in 0.1 M Na_2CO_3 (5 mg/ml) and then immediately diluted with PBS (pH 7.2) to achieve the desired concentration or pH. Upon neutralization of the solution the concentration may not be greater than 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DCFH (commonly known as dichlorofluorescin) is used as an indicator of peroxynitrite formation.[1,2] DCFH is supplied as the diacetate ester. Following enzymatic or base-catalyzed cleavage of the diacetate groups, it is readily oxidized to the highly fluorescent product dichlorofluorescein (DCF). Peroxynitrite is an efficient mediator of this oxidation and neither NO, superoxide, nor hydrogen peroxide alone appear to oxidize DCFH. Formation of DCF can be monitored by fluorescence spectroscopy using excitation and emission wavelengths of 502 and 523 nm, respectively, or by absorbance spectroscopy at 500 nm (ε = 59,500 $M^{-1}cm^{-1}$).[1,2]

References

1. Crow, J.P. Dichlorodihydrofluorescein and dihydrorhodamine 123 are sensitive indicators of peroxynitrite *in vitro*: Implications for intracellular measurement of reactive nitrogen and oxygen species. *Nitric Oxide* **1(2)**, 145-157 (1997).
2. Kooy, N.W., Royall, J.A., and Ischiropoulos, H. Oxidation of 2',7'-dichlorofluorescin by peroxynitrite. *Free Radic. Res.* **27(3)**, 245-254 (1997).

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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