

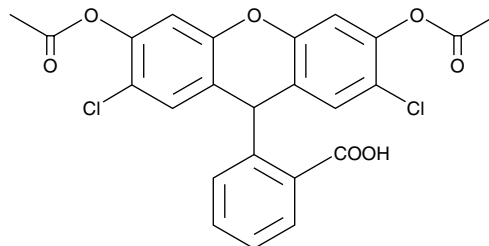
# Product Information



## 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%  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A crystalline solid  
**UV/Vis:**  $\lambda_{max}$ : 258 nm



### Laboratory Procedures

For long term storage, we suggest that 2,7-dichlorodihydrofluorescein diacetate (DCFH-DA) be stored as supplied at -20°C. It should be stable for at least one year.

DCFH-DA is supplied as a crystalline solid. A stock solution may be made by dissolving the DCFH-DA in an organic solvent. DCFH-DA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. 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 dissolved 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.

DCFH (commonly known as dichlorofluorescein) is used as an indicator peroxynitrite formation.<sup>1,2</sup> DCFH is supplied as the diacetate ester. Following enzymatic or base-catalyzed cleavage of the diacetate groups, DCFH is readily oxidized to the highly fluorescent product dichlorofluorescein (DHF). Peroxynitrite is an efficient mediator of this oxidation and neither nitric oxide, superoxide, nor hydrogen peroxide alone appear to oxidize DCFH. Formation of DHF can be monitored by fluorescence spectroscopy using excitation and emission wavelengths of 502 and 523 nm, respectively, or by absorbance spectroscopy at 500 nm ( $\epsilon = 59,500 \text{ M}^{-1}\text{cm}^{-1}$ ).<sup>1,2</sup>

### References

1. Kooy, N.W., Royall, J.A., and Ischiropoulos, H. Oxidation of 2',7'-dichlorofluorescein by peroxynitrite. *Free Rad. Res.* **27**, 245-254 (1997).
2. 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: Biology and Chemistry* **1**, 145-157 (1997).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/85155](http://www.caymanchem.com/catalog/85155)

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