

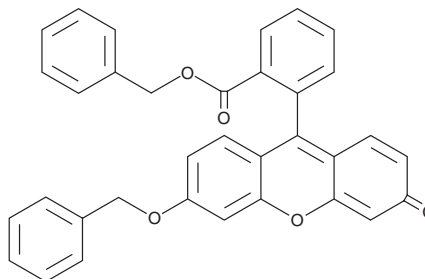
# PRODUCT INFORMATION



## Dibenzylfluorescein

Item No. 16808

**CAS Registry No.:** 97744-44-0  
**Formal Name:** 2-[3-oxo-6-(phenylmethoxy)-3H-xanthen-9-yl]-benzoic acid, phenylmethyl ester  
**Synonyms:** DBF, NSC 645658  
**MF:** C<sub>34</sub>H<sub>24</sub>O<sub>5</sub>  
**FW:** 512.6  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 235, 365, 460, 490 nm  
**Ex./Em. Max:** 485/538 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

Dibenzylfluorescein (DBF) is supplied as a crystalline solid. A stock solution may be made by dissolving the DBF in the solvent of choice, which should be purged with an inert gas. DBF is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of DBF in these solvents is approximately 10 and 25 mg/ml, respectively.

DBF is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, DBF should first be dissolved in DMF and then diluted with the aqueous buffer of choice. DBF has a solubility of approximately 0.25 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

DBF is a fluorogenic probe that acts as a substrate for specific cytochrome P450 (CYP) isoforms, including CYP3A4, CYP2C8, CYP2C9, CYP2C19, and aromatase (CYP19).<sup>1-3</sup> DBF is dealkylated by these CYP isoforms to produce fluorescein benzyl ether, which is further hydrolyzed to fluorescein by the addition of base (typically 2 M NaOH).<sup>3</sup> DBF is typically used near its apparent K<sub>m</sub> value of 0.87-1.9 μM.<sup>1-3</sup> The fluorescence of fluorescein is evaluated using excitation/emission wavelengths of 485/538 nm. DBF is used to detect changes in CYP catalytic activity caused by drugs or disease.<sup>1,4</sup>

### References

1. Stresser, D.M., Blanchard, A.P., Turner, S.D., *et al.* Substrate-dependent modulation of CYP3A4 catalytic activity: Analysis of 27 test compounds with four fluorometric substrates. *Drug Metab. Dispos.* **28(12)**, 1440-1448 (2000).
2. Donato, M.T., Jiménez, N., Castell, J.V., *et al.* Fluorescence-based assays for screening nine cytochrome P450 (P450) activities in intact cells expressing individual human P450 enzymes. *Drug Metab. Dispos.* **32(7)**, 699-706 (2004).
3. Salminen, K.A., Leppänen, J., Venäläinen, J.I., *et al.* Simple, direct, and informative method for the assessment of CYP2C19 enzyme inactivation kinetics. *Drug Metab. Dispos.* **39(3)**, 412-418 (2011).
4. Moutinho, D., Marohnic, C.C., Panda, S.P., *et al.* Altered human CYP3A4 activity caused by Antley-Bixler syndrome-related variants of NADPH-cytochrome P450 oxidoreductase measured in a robust in vitro system. *Drug Metab. Dispos.* **40(4)**, 754-760 (2012).

#### 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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