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Lieferung & Zahlungsart

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Zuschläge

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Dibenzylfluorescein

Cat. No.: HY-116862

CAS No.: 97744-44-0

Molecular Formula: $C_{34}H_{24}O_5$

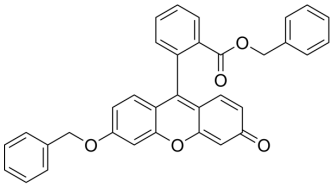
Molecular Weight: 512.55

Target: Cytochrome P450; Fluorescent Dye

Pathway: Metabolic Enzyme/Protease; Others

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (97.55 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9510 mL	9.7551 mL	19.5103 mL
	5 mM	0.3902 mL	1.9510 mL	3.9021 mL
	10 mM	0.1951 mL	0.9755 mL	1.9510 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Dibenzylfluorescein (DBF) is a fluorogenic probe (Fluoresecent dye) that acts as a substrate for specific cytochrome P450 (CYP) isoforms, including CYP3A4, CYP2C8, CYP2C9, CYP2C19, and aromatase (CYP19). Dibenzylfluorescein is typically used near its K_m value of 0.87-1.9 μM (Ex=485nm，Em=535nm). Dibenzylfluorescein is used to detect changes in CYP catalytic activity caused by drugs or disease[1][2][3][4].

In Vitro

The protocol of P450-catalyzed metabolism of Dibenzylfluorescein and effect of base[3]:

Reaction Process: Dibenzylfluorescein is dealkylated by P450 to form a fluorescein benzyl ester, which is further hydrolyzed to fluorescein by NaOH (if present). Addition of 2 M NaOH causes also decomposition of Dibenzylfluorescein to fluorescein benzyl ether.

1. Incubation mixtures for CYP2C19 enzyme-catalyzed samples each 150 μL contains 0.1 M Tris-HCl buffer (pH 7.4), 10 μM Dibenzylfluorescein, 15 pmol of CYP2C19 enzyme, and 50 μL of NADPH-regenerating system.NADPH-regenerating system contains 1.13 mM NADP, 12.5 mM isocitric acid, 56.33 mM KCl, 187.5 mM Tris-HCl, pH 7.4, 12.5 mM MgCl2, 0.0125 mM MnCl2, and 0.075 U/ml isocitrate dehydrogenase.
2. The samples were incubated for 30-60 min at 37°C. The reactions were terminated by rapid cooling to 4°C and after centrifugation, the supernatants were analyzed by LC-MS.
3. Pure Dibenzylfluorescein, fluorescein benzyl ester, fluorescein benzyl ether, and fluorescein (all 10 μM) were used as standards and were analyzed in the absence and presence of 2 M NaOH.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Stresser DM., et al. Substrate-dependent modulation of CYP3A4 catalytic activity: Analysis of 27 test compounds with four fluorometric substrates. Drug Metabolism and Disposition 28(12), 1440-1448 (2000).

[2]. Donato MT., 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 KA, et al. Simple, direct, and informative method for the assessment of CYP2C19 enzyme inactivation kinetics. Drug Metabolism and Disposition 39(3), 412-418 (2011).

[4]. Moutinho D, 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 Metabolism and Disposition 40(4), 754-760 (2012).

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