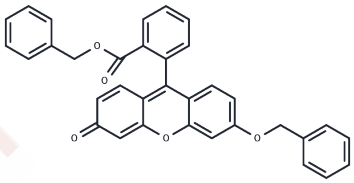
Data Sheet (Cat.No.T78590)

TargetMol

Dibenzylfluorescein

Chemical Properties



CAS No. : 97744-44-0

Formula: C34H24O5

Molecular Weight: 512.55

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Dibenzylfluorescein (DBF), a fluorogenic probe (Fluorescent dye), serves as a substrate for various cytochrome P450 (CYP) isoforms, such as CYP3A4, CYP2C8, CYP2C9, CYP2C19, and aromatase (CYP19). It is commonly utilized at its K_m value range of 0.87-1.9 μM (Ex=485nm, Em=535nm) to monitor alterations in CYP enzymatic activity attributable to pharmaceutical interventions or pathophysiological conditions [1] [2] [3] [4].
Targets(IC50)	Others,Cytochromes P450
In vitro	P450-Catalyzed Metabolism of Dibenzylfluorescein and the Influence of Alkali Experimental Method [3]: During the reaction, P450 enzymes debenzylate Dibenzylfluorescein to yield fluorescent fluorescein benzyl ester, which can be hydrolyzed to fluorescein in the presence of sodium hydroxide. The addition of 2M sodium hydroxide also results in the decomposition of Dibenzylfluorescein into fluorescein benzyl ether. The conditions for CYP2C19 enzyme activity and inhibition experiments include a 150 μL reaction mixture containing 0.1M Tris-HCl buffer (pH 7.4), 10 μM Dibenzylfluorescein, 15 pmol CYP2C19, and 50 μL NADPH regenerating system. The NADPH regenerating system comprises 1.13 mM NADP, 12.5 mM citric 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 citrate dehydrogenase. Samples are incubated at 37°C for 30-60 minutes, rapidly cooled to 4°C to stop the reaction, centrifuged, and the supernatant is analyzed by LC-MS. Analyses are carried out using pure Dibenzylfluorescein, fluorescein benzyl ester, fluorescein benzyl ether, and fluorescein (all at 10 μM) as standards, both in the absence and presence of 2 M NaOH.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.951 mL	9.7551 mL	19.5103 mL
5 mM	0.3902 mL	1.951 mL	3.9021 mL
10 mM	0.1951 mL	0.9755 mL	1.951 mL
50 mM	0.039 mL	0.1951 mL	0.3902 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.