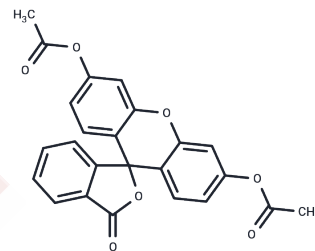


Fluorescein diacetate

Chemical Properties

CAS No. :	596-09-8
Formula:	C ₂₄ H ₁₆ O ₇
Molecular Weight:	416.38
Appearance:	no data available
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year



Biological Description

Description	Fluorescein diacetate (Di-O-acetylfluorescein) is a cell permeable esterase-substrate for hGSTP1-1.
Targets(IC50)	Others
In vitro	Fluorescein diacetate (FDA) serves as a fluorogenic substrate in assessing the efficacy of inhibitors against the enzyme GSTP1-1 in vitro. Notably, Ethacrynic acid (EA) and NBDHEX are effective in inhibiting the enzyme-activated fluorescence of FDA, demonstrating concentration-dependent inhibition with IC ₅₀ values of 3.3±0.5 μM and 0.61±0.04 μM, respectively. FDA, an acetylated variant of fluorescein, is activated fluorescently through the esterolytic action of the human Pi-class glutathione S-transferase (hGSTP1), marking it specific among various cytosolic GSTs. This fluorogenic activity allows for the usage of FDA in vital staining. Particularly, when MCF7 cells overexpress hGSTP1, an observable fluorescence activation due to GST inhibitors is noted, an effect not seen in cells overexpressing hGSTA1 or hGSTM1. The enzyme-dependent fluorescence activation is further corroborated by incubating FDA with recombinant hGSTP1-1 and GSH, showing significant fluorescence only in the presence of both, indicating the necessity of hGSTP1-1 activity for such activation. This specificity is underscored by the established linear relation between fluorescence increase rate and hGSTP1-1 concentration, determining the enzyme's specific activity for FDA to be 79±15 nmol/min/mg protein.

Solubility Information

Solubility	DMSO: 6.88 mg/mL (16.51 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4017 mL	12.0083 mL	24.0165 mL
5 mM	0.4803 mL	2.4017 mL	4.8033 mL
10 mM	0.2402 mL	1.2008 mL	2.4017 mL
50 mM	0.048 mL	0.2402 mL	0.4803 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.

Reference

Boyd V, et al. Limitations in the Use of Fluorescein Diacetate/Propidium Iodide (FDA/PI) and Cell Permeable Nucleic Acid Stains for Viability Measurements of Isolated Islets of Langerhans. Curr Trends Biotechnol Pharm. 2008 Mar;2 (2):66-84.

Fujikawa Y, et al. Fluorescein diacetate (FDA) and its analogue as substrates for Pi-class glutathione S-transferase (GSTP1) and their biological application. Talanta. 2018 Mar 1;179:845-852.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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