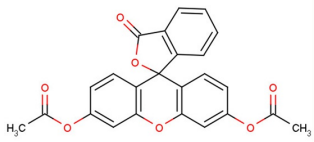
Data Sheet (Cat.No.T19323)

TargetMol
A DRUG SCREENING EXPERT

Fluorescein Diacetate

Chemical Properties



CAS No.:	596-09-8
Formula:	C24H16O7
Molecular Weight:	416.38
Appearance:	N/A
Storage:	0-4℃ for short term (days to weeks), or -20℃ for long term (months).

Biological Description

Description	Fluorescein diacetate can be used as a fluorogenic substrate for hGSTP1-1. Fluorescein diacetate is a cell permeable esterase-substrate.
Targets(IC_{50})	Others: None
In vitro	Fluorescein diacetate is applicable as a fluorogenic substrate for evaluating inhibitors of GSTP1-1 in vitro. For Fluorescein diacetate as a substrate, both Ethacrynic acid (EA) and NBDHEX suppress the hGSTP1-1-dependent fluorescent increase in a concentration-dependent manner, with IC50s of 3.3±0.5 μM and 0.61±0.04 μM, respectively.Fluorescein diacetate (FDA) is an acetylated derivative of the green fluorescent dye fluorescein. Fluorescein diacetate (FDA), a fluorescent probe used for vital staining, is a fluorescently activated by esterolytic activity of human Pi-class glutathione S-transferase (hGSTP1) selectively among various cytosolic GSTs. Fluorescence activation of Fluorescein diacetate susceptible to GST inhibitors is observed in MCF7 cells exogenously overexpressing hGSTP1, but not in cells overexpressing hGSTA1 or hGSTM1. Fluorescein diacetate can be used as a fluorogenic substrate for hGSTP1-1. To investigate whether the fluorescence activation is due to hGSTP1 activity, Fluorescein diacetate is incubated with recombinant hGSTP1-1 and GSH in vitro. Remarkable fluorescence activation is observed in the presence of both hGSTP1-1 and GSH, whereas only slight activation is observed in the absence of either of them or when the enzyme is heat inactivated. This suggests that the fluorescence activation of Fluorescein diacetate depends on hGSTP1-1 activity. From the linear relationship between the rate of increase in fluorescence and the hGSTP1-1 concentration, the specific activity of the enzyme for 1 μM Fluorescein diacetate is determined to be 79±15 nmol/min/mg protein.

Solubility Information

Solubility	DMSO: 26.67 mg/mL (64.05 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.402 mL	12.008 mL	24.017 mL
5 mM	0.48 mL	2.402 mL	4.803 mL
10 mM	0.24 mL	1.201 mL	2.402 mL
50 mM	0.048 mL	0.24 mL	0.48 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

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

Tel:781-999-4286 E-mail:info@targetmol.com Address:36 Washington Street,Wellesley Hills,MA 02481