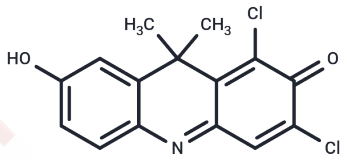
Data Sheet (Cat.No.T15082)

TargetMol

DDAO

Chemical Properties



CAS No. : 118290-05-4

Formula: C15H11Cl2NO2

Molecular Weight: 308.16

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	DDAO is a promising near-infrared (NIR) red fluorescent probe with a long emission wavelength (λem = 656 nm) and a tunable excitation wavelength (600-650 nm). It can be designed for detecting the activities of various enzymes such as β-galactosidase, sulfatase, protein phosphatase 2A, carboxylesterase 2, human albumin, and esterases.
Targets(IC50)	Others,Lipid
Cell Research	Instructions I. Reagent preparation: 1. Preparation of stock solution: DDAO is dissolved in an appropriate solvent (such as DMSO, ethanol or water), and the stock solution is prepared according to the specific needs of the experiment. 2. Preparation of working solution: The concentration of the stock solution is usually 1 mM (but the concentration can be adjusted according to the experiment). II. Operation steps 1. Enzyme activity detection: Sample preparation: It is necessary to prepare the sample to be tested (such as cells, tissues or solutions) and the corresponding enzyme. For example, when detecting β-galactosidase, β-galactoside can be used as a substrate. 2. Reaction steps: 1) Add DDAO fluorescent probe solution to the sample solution. 2) According to the experimental requirements and enzyme activity, adjust the pH value (usually use an appropriate buffer solution). 3) Incubate the sample at an appropriate temperature for a certain time, usually 10-60 minutes, and the specific time is adjusted according to the type of enzyme and experimental requirements. 4) During this process, DDAO will react with the target enzyme to generate a fluorescent signal. 3. Fluorescence detection: 1) Use a fluorescence spectrophotometer or fluorescence microscope for detection, set the excitation wavelength at 600-650 nm and the emission wavelength at 656 nm. 2) Evaluate enzyme activity based on changes in fluorescence intensity. 3) Calculate the speed or activity level of the enzyme reaction, and usually require control group data for comparison. 3. Data analysis:

Cell Research	1) Based on the measured changes in fluorescence intensity, a standard curve can be drawn and the activity of the enzyme can be evaluated by comparing the fluorescence values of the sample and the control group. 2) Different substrates and optimized experimental conditions may be required for the activity of different enzymes. Notes: 1. Solubility: Ensure that DDAO can be completely dissolved in an appropriate solvent and avoid excessive concentrations, which may have toxic effects on cell or enzyme activity. 2. Photostability: DDAO is light-sensitive, so strong light exposure should be avoided during storage and operation to prevent fluorescence bleaching. 3. Enzyme selection and optimization: Different enzymes may require different substrates or reaction conditions, so when using them, they need to be optimized according to the properties of the specific enzyme. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 10.42 mg/mL (33.81 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.2451 mL	16.2253 mL	32.4507 mL
5 mM	0.649 mL	3.2451 mL	6.4901 mL
10 mM	0.3245 mL	1.6225 mL	3.2451 mL
50 mM	0.0649 mL	0.3245 mL	0.649 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.

Reference

Želinská K,et al. Solubilisation of model membrane by DDAO surfactant - partitioning, permeabilisation and liposome-micelle transition. Gen Physiol Biophys. 2020 Mar;39(2):107-122.
Goncharenko AA,et al. DDAO Controlled Synthesis of Organo-Modified Silica Nanoparticles with Encapsulated Fluorescent Boron Dipyrrins and Study of Their Uptake by Cancerous Cells. Molecules. 2020 Aug 21;25(17):3802.
Leira F, et al. Characterization of 9H-(1,3-dichlor-9, 9-dimethylacridin-2-ona-7-yl)-phosphate (DDAO) as substrate of PP-2A in a fluorimetric microplate assay for diarrhetic shellfish toxins (DSP). Toxicon. 2000 Dec;38(12):1833-44.