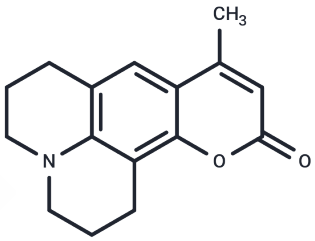
Data Sheet (Cat.No.T77564)

TargetMol

Coumarin102

Chemical Properties



CAS No. : 41267-76-9

Formula: C16H17NO2

Molecular Weight: 255.31

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	Coumarin102 (Exciton 480) is a fluorescent dye.Coumarin102 has weak inhibitory activity against Monoamine oxidase B, MAO-B and MAO-A and can be used to study neurological disorders.
Targets(IC50)	Others,MAO,Monoamine Oxidase
Cell Research	I. MAO activity monitoring 1. Material preparation: (1) Coumarin102 dye: It is recommended to dissolve in DMSO or ethanol with a final concentration of 1-10 μM. (2) Enzyme source: MAO-B and MAO-A can be extracted from tissues, or commercially purified MAO enzymes can be used. (3) Fluorescence spectrometer: The excitation wavelength is 365-400 nm, and the emission wavelength is in the range of 460-500 nm. 2. Experimental steps: (1) Prepare a reaction system containing Coumarin102 and add a specific concentration of MAO-B or MAO-A. (2) Add substrates (such as phenylethylamine or tyramine) to the reaction system to start the enzyme reaction. (3) Monitor the changes in fluorescence signals on the fluorescence spectrometer. The interaction between Coumarin102 and substrates or metabolites will cause changes in fluorescence intensity, reflecting MAO activity. (4) Titration experiments were performed using different concentrations of Coumarin102 to evaluate its inhibitory effect on enzyme activity (IC50 value). 2. Application in the study of nervous system diseases (1) Cell model study: Using neural cell lines expressing MAO-B or MAO-A (such as SH-SY5Y cells), the intracellular distribution of Coumarin102 and changes in its fluorescence intensity were detected. (2) Animal model study: In brain tissue sections, the distribution of Coumarin102 was observed by tissue staining and fluorescence microscopy to evaluate its relationship with neuroinflammation or oxidative stress. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 50 mg/mL (195.84 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.9168 mL	19.584 mL	39.1681 mL
5 mM	0.7834 mL	3.9168 mL	7.8336 mL
10 mM	0.3917 mL	1.9584 mL	3.9168 mL
50 mM	0.0783 mL	0.3917 mL	0.7834 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

Qin HY, et al. Parametric investigations on the saturation intensity of Coumarin 102 for stimulated emission depletion application. J Microsc. 2018;10.1111/jmi.12703.

Liu Y, et al. Time-dependent density functional theory study on electronically excited States of coumarin 102 chromophore in aniline solvent: reconsideration of the electronic excited-state hydrogen-bonding dynamics. J Phys Chem A. 2008;112(28):6244-6248.