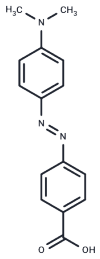
Data Sheet (Cat.No.T18963)

TargetMol

Dabcyl acid

Chemical Properties



CAS No. : 6268-49-1

Formula: C15H15N3O2

Molecular Weight: 269.3

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	Dabcyl acid (DABCYL) is the original dark fluorescence quencher.
Targets(IC50)	Others
Cell Research	I. Fluorescence resonance energy transfer (FRET) experiment a. Reagent preparation: synthesize or purchase DABCYL-labeled donor molecules and matching fluorophore-labeled acceptor molecules, such as FITC, etc. Prepare appropriate buffer, such as PBS, etc. b. Experimental steps: 1. Dissolve the labeled donor and acceptor molecules in buffer respectively to prepare solutions of appropriate concentrations. 2. Add appropriate amounts of donor solution and acceptor solution to the cuvette or fluorescence enzyme labeling plate in sequence to make the final concentrations of the two meet the experimental design requirements, such as 10 nM for the donor concentration and 20 nM for the acceptor concentration. 3. Use a fluorescence spectrometer to set the appropriate excitation wavelength and emission wavelength range, first scan the fluorescence spectra of the donor and acceptor separately, and then scan the fluorescence spectrum of the mixture of the two, and observe the FRET phenomenon, that is, the decrease in the fluorescence intensity of the donor and the increase in the fluorescence intensity of the acceptor. II. Protein labeling and activity detection experiment a. Reagent preparation: Dissolve DABCYL-NHS ester in an anhydrous organic solvent such as DMF or DMSO. Prepare a solution of a certain concentration. Prepare the protein solution to be labeled and place it in a suitable buffer, such as Tris-HCl buffer. b. Experimental steps: 1. Take an appropriate amount of protein solution and slowly add DABCYL-NHS ester solution to make the molar ratio of DABCYL to protein reach a predetermined value, such as 1:5, etc., and stir the reaction at room temperature or 4°C for 1-2 hours. 2. After the reaction, remove the unreacted DABCYL by dialysis or gel filtration. 3. The labeled protein can be tested for its labeling efficiency by SDS-PAGE and other methods, and corresponding activity tests, such as enzyme activity assays, can be performed to evaluate the effect of labeling on protein activity. III. Cell uptake experiment

Cell Research	a. Reagent preparation: Synthesize DABCYL-labeled cell penetrating peptides or other carrier molecules and dissolve them in cell culture medium or PBS. Prepare the corresponding cell line, such as HeLa Cells, etc., and culture to the logarithmic growth phase. b. Experimental steps: 1. Inoculate the cells in the culture plate and culture to the appropriate density. 2. Add a solution containing DABCYL labeled molecules to make the final concentration reach the set value, such as 10 μM, etc., and incubate in a 37℃, 5% CO_2 incubator for a certain time, such as 1-4 hours. 3. After the incubation, wash the cells with PBS to remove the unabsorbed labeled molecules. 4. The fluorescence distribution in the cells can be observed by fluorescence microscopy, or the cell uptake of DABCYL labeled molecules can be quantitatively analyzed using flow cytometry. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 25 mg/mL (92.83 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.7133 mL	18.5667 mL	37.1333 mL
5 mM	0.7427 mL	3.7133 mL	7.4267 mL
10 mM	0.3713 mL	1.8567 mL	3.7133 mL
50 mM	0.0743 mL	0.3713 mL	0.7427 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

Tokunaga Y, et al. Pharmacophore generation from a drug-like core molecule surrounded by a library peptide via the 10BASEd-T on bacteriophage T7. Molecules. 2014 Feb 21;19(2):2481-96.
Guimaraes CP, et al. Site-specific C-terminal and internal loop labeling of proteins using sortase-mediated reactions. Nat Protoc. 2013 Sep;8(9):1787-99.
Kempf O, et al. Hydrodabcyl: A Superior Hydrophilic Alternative to the Dark Fluorescence Quencher Dabcyl. Anal Chem. 2017 Nov 21;89(22):11893-11897.

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