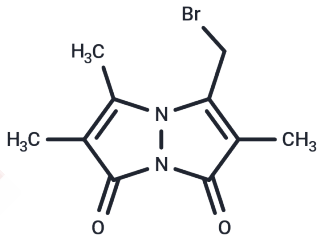
Data Sheet (Cat.No.T18929)

TargetMol

Bromobimane

Chemical Properties



CAS No. : 71418-44-5

Formula: C10H11BrN2O2

Molecular Weight: 271.11

Storage: Store at low temperature
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	Bromobimane (Monobromobimane) is a non-fluorescent substance, but reacts with thiols to produce a fluorescent product.Bromobimane is used as a probe, often in clinical medicine, to test for sulfide levels in blood.
Targets(IC50)	Others
In vitro	Bromobimanes in solution (aqueous or organic solvents of medium polarity) react with small thiols, and with reactive protein thiol groups (e.g., hemoglobin). The reactions of bromobimanes with thiols are second-order and dependent on pH, the active nucleophile being the thiolate anion. The reaction of bromobimane with a thiolate converts the nonfluorescent agent into water-soluble fluorescent products [1]. The highly selective, rapid reactivity of bromobimanes toward thiols, the stability and fluorescence yield of the thiol derivatives, the ease of separation of the derivatives by reversed-phase HPLC, and the availability of both cell-penetrating and nonpenetrating forms, make the use bromobimanes an extremely powerful approach to the analysis of low molecular weight biothiols [2].
Cell Research	Instructions I. Solution preparation: 1. Mother solution preparation: Dissolve Bromobimane in an appropriate solvent, such as anhydrous DMSO, DMF or methanol, to prepare a stock solution of the required concentration. 2. Working solution preparation: The recommended concentration of the stock solution is 100 mM for subsequent dilution. Dilute the stock solution to the working concentration, usually 10-50 μM. II. Operation steps Cell staining 1. Grow cells to an appropriate density; wash cells with PBS and remove the culture medium. 2. Add the diluted Bromobimane solution to the cells and incubate at 37°C in the dark for 15-30 minutes. 3. After incubation, wash the cells 3 times with PBS to remove unbound dye. 4. Fluorescence detection: Use a fluorescence microscope or flow cytometer for detection. The excitation wavelength of Bromobimane is about 390 nm and the emission wavelength is about 478 nm.

Cell Research	Precautions: 1) Wear gloves during operation to avoid contact between skin or mucous membranes and reagents. 2) Avoid light exposure during incubation and storage to prevent fluorescence quenching. 3) After staining, fluorescence detection and analysis should be performed immediately. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 125 mg/mL (461.07 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.5 mg/mL (9.22 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.6885 mL	18.4427 mL	36.8854 mL
5 mM	0.7377 mL	3.6885 mL	7.3771 mL
10 mM	0.3689 mL	1.8443 mL	3.6885 mL
50 mM	0.0738 mL	0.3689 mL	0.7377 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

Kosower EM, Kosower NS. Bromobimane probes for thiols. Methods Enzymol. 1995;251:133-48.
Newton GL, Fahey RC. Determination of biothiols by bromobimane labeling and high-performance liquid chromatography. Methods Enzymol. 1995;251:148-66.
Spinck M,et al. Genetically programmed cell-based synthesis of non-natural peptide and depsipeptide macrocycles. Nat Chem. 2023 Jan;15(1):61-69.

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