

Dihydroethidium

Chemical Properties

CAS No. : 104821-25-2

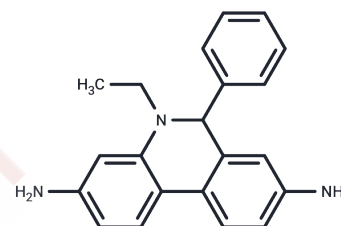
Formula: C₂₁H₂₁N₃

Molecular Weight: 315.41

Keep away from direct sunlight

Storage: 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	Dihydroethidium (PD-MY 003) is a peroxide indicator with blue fluorescence in the cytoplasm ($\lambda_{ex}=518$ nm, $\lambda_{em}=616$ nm), which disappears when oxidized and is cell permeable.
Targets(IC50)	Others
In vitro	<p>METHODS: Detection of cellular peroxides by Dihydroethidium:</p> <ol style="list-style-type: none"> 1. Prepare a 5-10 mM stock solution of Dihydroethidium dye in DMSO, protect from light, and store in portions at -20°C. Dilute the stock solution with physiological buffers (e.g., PBS, HBSS, HEPES) to obtain a working solution of 5-20 μM Dihydroethidium dye. The optimal working concentration must be determined empirically. 3. Add the Dye Working Solution to the cells at a 1:1 ratio (100 μL of Dye Working Solution to 100 μL of Cell Suspension) and incubate for 5-60 minutes at room temperature or 37°C. 4. Wash with PBS and then perform fluorescence microscopy or flow cytometry. <p>Dihydroethidium itself is blue fluorescent with a maximum excitation wavelength of 370 nm and a maximum emission wavelength of 420 nm, and after dehydrogenation, it binds to RNA or DNA to produce red fluorescence with a maximum excitation wavelength of 300 nm and a maximum emission wavelength of 610 nm, and 518 nm can be used as the excitation wavelength in practice.</p> <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>
Cell Research	<p>Dihydroethidium detection of cell peroxides</p> <ol style="list-style-type: none"> 1. Prepare 5-10 mM Dihydroethidium dye stock solution with DMSO, protect from light, and store in aliquots at -20°C. 2. Dilute the stock solution with physiological buffer (such as PBS, HBSS, HEPES) to obtain 5-20 μM Dihydroethidium dye working solution. The optimal working concentration must be determined empirically. 3. Add the dye working solution to the cells at a ratio of 1:1 (100 μL cell suspension to 100 μL dye working solution) and incubate at room temperature or 37°C for 5-60 minutes. 4. After washing with PBS, perform fluorescence microscopy or flow cytometry

Cell Research	<p>detection. Dihydroethidium itself is a blue fluorescent substance with a maximum excitation wavelength of 370 nm and a maximum emission wavelength of 420 nm. After dehydrogenation, it combines with RNA or DNA to produce red fluorescence with a maximum excitation wavelength of 300 nm and a maximum emission wavelength of 610 nm. In actual observation, 518 nm can also be used as the excitation wavelength.</p> <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>
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Solubility Information

Solubility	DMSO: 125 mg/mL (396.31 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	<p>10% DMSO+40% PEG300+5% Tween 80+45% Saline: 0.5 mg/mL (1.59 mM),Solution.</p> <p><i>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.</i></p>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1705 mL	15.8524 mL	31.7048 mL
5 mM	0.6341 mL	3.1705 mL	6.341 mL
10 mM	0.317 mL	1.5852 mL	3.1705 mL
50 mM	0.0634 mL	0.317 mL	0.6341 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

- Li J, et al. Combination of monoammonium glycyrrhizinate and cysteine hydrochloride protects mice against acetaminophen-induced liver injury via Keap1/Nrf2/ARE pathway. *J Pharm Pharmacol.* 2022 May 20;74(5):730-739.
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- Liu T, et al. Murine double minute 2-mediated estrogen receptor 1 degradation activates macrophage migration inhibitory factor to promote vascular smooth muscle cell dedifferentiation and oxidative stress during thoracic aortic aneurysm progression. *Biochim Biophys Acta Mol Cell Res.* 2024 Mar;1871(3):119661.
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