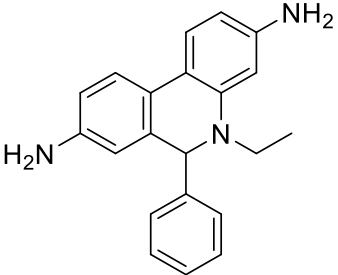


# Product data sheet



MedKoo Cat#: 526644 Name: Dihydroethidium CAS: 104821-25-2 Chemical Formula: C <sub>21</sub> H <sub>21</sub> N <sub>3</sub> Exact Mass: 315.1735 Molecular Weight: 315.42	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

## 1. Product description:

Dihydroethidium, also known as Hydroethidine and PD-MY 003, is a cell-permeable blue fluorescent dye. DHE-derived fluorescence at 570 nm is a convenient method for detection of intracellular and extracellular superoxide produced by phagocytic and vascular NADPH oxidase. Dihydroethidium is neuroprotective by reducing superoxide in mice after stroke.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	0.5	1.59
DMSO	41.67	132.10
DMSO:PBS (pH 7.2) (1:1)	0.5	1.59
Ethanol	1.13	3.57
Water	0.67	2.12

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.17 mL	15.85 mL	31.70 mL
5 mM	0.63 mL	3.17 mL	6.34 mL
10 mM	0.32 mL	1.59 mL	3.17 mL
50 mM	0.06 mL	0.32 mL	0.63 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Tan W, Dai F, Yang D, Deng Z, Gu R, Zhao X, Cheng Y. MiR-93-5p promotes granulosa cell apoptosis and ferroptosis by the NF- $\kappa$ B signaling pathway in polycystic ovary syndrome. *Front Immunol.* 2022 Oct 19;13:967151. doi: 10.3389/fimmu.2022.967151. PMID: 36341347; PMCID: PMC9626535.
2. Pinelis V, Krasilnikova I, Bakaeva Z, Surin A, Boyarkin D, Fisenko A, Krasilnikova O, Pomytkin I. Insulin Diminishes Superoxide Increase in Cytosol and Mitochondria of Cultured Cortical Neurons Treated with Toxic Glutamate. *Int J Mol Sci.* 2022 Oct 20;23(20):12593. doi: 10.3390/ijms232012593. PMID: 36293449; PMCID: PMC9604026.

### In vivo study

1. Zhu C, Cheng X, Gao P, Gao Q, Wang X, Liu D, Ren X, Zhang C. Model establishment and microarray analysis of mice with oxaliplatin-induced hepatic sinusoidal obstruction syndrome. *Mol Med Rep.* 2022 Nov;26(5):346. doi: 10.3892/mmr.2022.12862. Epub 2022 Sep 30. PMID: 36177905; PMCID: PMC9551404.

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2. Liu T, Li CY, Chen H, Liu J, Zhong LL, Tang MM, Wang WB, Huang JP, Jiang XS. tBHQ attenuates podocyte injury in diabetic nephropathy by inhibiting NADPH oxidase-derived ROS generation via the Nrf2/HO-1 signalling pathway. *Heliyon*. 2022 Sep 6;8(9):e10515. doi: 10.1016/j.heliyon.2022.e10515. PMID: 36119860; PMCID: PMC9479023.

## 7. Bioactivity

### Biological target:

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Dihydroethidium (Hydroethidine; PD-MY 003) is a superoxide indicator; exhibits blue-fluorescence in the cytosol until oxidized, where it intercalates within the cell's DNA, staining its nucleus a bright fluorescent red (Ex/Em=518/616 nm).

### In vitro activity

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Subsequently, the levels of reactive oxygen species, malondialdehyde, GPX4, SLC7A11 and Nrf2, which are indicators of ferroptosis, were measured by a dihydroethidium fluorescent dye probe, biochemical kit, western blotting and reverse transcription quantitative polymerase chain reaction.

Reference: *Front Immunol*. 2022 Oct 19;13:967151. <https://pubmed.ncbi.nlm.nih.gov/36341347/>

### In vivo activity

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Furthermore, DHE (dihydroethidium) probe technology was used to analyze changes in ROS levels. The results showed that the ROS levels in the livers of the mice in the OXA group were increased in a dose-dependent manner (Fig. 7E).

Reference: *Mol Med Rep*. 2022 Nov;26(5):346. <https://pubmed.ncbi.nlm.nih.gov/36177905/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*