# **PRODUCT** INFORMATION



Dihydroethidium

Item No. 12013

CAS Registry No.: Formal Name:	104821-25-2 5-ethyl-5,6-dihydro-6-phenyl- 3,8-phenanthridinediamine	NH <sub>2</sub>
Synonyms:	Hydroethidine, PD-MY 003	
MF:	$C_{21}H_{21}N_3$	
FW:	315.4	
Purity:	≥98%	H <sub>2</sub> N · · · · · ·
UV/Vis.:	λ <sub>max</sub> : 224, 271, 354 nm	
Em./Ex. Max:	490/590 nm	
Supplied as:	A crystalline solid	
Storage:	-20°C	
Stability:	≥4 years	$\sim$

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

## Laboratory Procedures

Dihydroethidium is supplied as a crystalline solid. A stock solution may be made by dissolving the dihydroethidium in the solvent of choice, which should be purged with an inert gas. Dihydroethidium is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of dihydroethidium in these solvents is approximately 0.25, 12, and 0.5 mg/ml, respectively.

Dihydroethidium is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, dihydroethidium should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Dihydroethidium has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

## Description

Dihydroethidium is a cell-permeable blue fluorescent dye that upon entering cells interacts with superoxide to form oxyethidium, which intercalates with nucleic acids and emits a red fluorescence detectable gualitatively by fluorescent microscopy or quantitatively by HPLC.<sup>1</sup> It displays excitation/emission spectra of 490/590 nm.<sup>2</sup> This selective and sensitive probe has been used to detect reactive oxygen species during the phagocytic respiratory burst and for the detection of intracellular superoxide in cultured cells.<sup>3-5</sup>

## References

- 1. Cai, H., Dikalov, S., Griendling, K.K., et al. Methods Mol. Med. 139, 293-311 (2007).
- 2. Laurindo, F.R.M., Fernandes, D.C., and Santos, C.X.C. Methods Enzymol. 441, 237-260 (2008).
- 3. Fink, B., Laude, K., McCann, L., et al. Am. J. Physiol. Cell Physiol. 287, C895-C902 (2004).
- 4. Robinson, K.M., Janes, M.S., Pehar, M., et al. Proc. Nat. Acad. Sci. USA 103(41), 15038-15043 (2006).
- 5. Salih, H.R., Husfeld, L., and Adam, D. Clin. Microbiol. Infect. 6(5), 251-258 (2000).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFFTY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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1180 EAST ELLSWORTH RD ANN ARBOR, MI 48108 · USA PHONE: [800] 364-9897 [734] 971-3335 FAX: [734] 971-3640 CUSTSERV@CAYMANCHEM.COM WWW.CAYMANCHEM.COM