

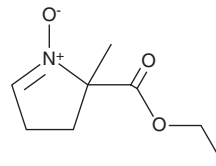
PRODUCT INFORMATION



EMPO

Item No. 20618

CAS Registry No.:	61856-99-3
Formal Name:	3,4-dihydro-2-methyl-2H-Pyrrole-2-carboxylic acid 1-oxide, ethyl ester
Synonym:	5-(Ethoxycarbonyl)-5-methyl-1-Pyrroline-N-Oxide
MF:	C ₈ H ₁₃ NO ₃
FW:	171.2
Purity:	≥98%
UV/Vis.:	λ _{max} : 238 nm
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

EMPO is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of EMPO in ethanol and DMF is approximately 30 mg/ml and approximately 15 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of EMPO is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of EMPO in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

EMPO is a hydrophilic cyclic nitron analog of the free radical spin trap DMPO (Item No. 10006436). The EMPO-superoxide adduct (EMPO-OOH) exhibits an ESR spectrum that is similar to the DMPO-OOH spectrum.¹ However, the EMPO-OOH adduct is about 5-8 times more stable ($t_{1/2} = 4.8 - 8.6$ min) and does not spontaneously decay to the hydroxyl adduct, making spectral interpretation less difficult.¹⁻³

References

- Olive, G., Mercier, A., Le Moigne, F., *et al.* 2-ethoxycarbonyl-2-methyl-3,4-dihydro-2H-pyrrole-1-oxide: Evaluation of the spin trapping properties. *Free Radic. Biol. Med.* **28(3)**, 403-408 (2000).
- Stolze, K., Udilova, N., and Nohl, H. Spin adducts of superoxide, alkoxy, and lipid-derived radicals with EMPO and its derivatives. *Biol. Chem.* **383(5)**, 813-820 (2002).
- Zhang, H., Joseph, J., Vasquez-Vivar, J., *et al.* Detection of superoxide anion using an isotopically labeled nitron spin trap: Potential biological applications. *FEBS Lett.* **473(1)**, 58-62 (2000).

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

SAFETY 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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