

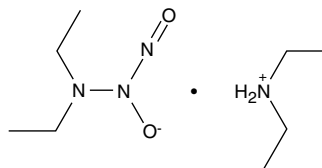
Product Information



DEA NONOate

Item No. 82100

CAS Registry No.: 372965-00-9
Formal Name: Diethylammonium (Z)-1-(N,N-diethylamino)diazen-1-ium-1,2-diolate
Synonyms: DEA/NO, Diethylamine NONOate
MF: C₄H₁₀N₃O₂ • C₄H₁₂N
FW: 206.3
Purity: ≥98%
Stability: ≥1 year at -80°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 250 nm



Laboratory Procedures

For long term storage, keep DEA NONOate sealed under nitrogen at -80°C. It should be stable for at least one year. The crystals are sensitive to moisture and become discolored on exposure to air. Keep the vial sealed until use unless your laboratory is equipped with a glove box with an inert atmosphere for the handling of air sensitive compounds.

DEA NONOate is supplied as a crystalline solid. A stock solution may be made by dissolving the DEA NONOate in an organic solvent purged with an inert gas. DEA NONOate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of DEA NONOate is approximately 25 mg/ml in ethanol and 2 mg/ml in DMSO and DMF.

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. Organic solvent-free aqueous solutions of DEA NONOate can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of DEA NONOate in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

DEA NONOate dissociates to the free amine and NO in a pH-dependent manner following first order kinetics. Alkaline solutions of NONOates (in 0.01 M NaOH) are very stable and can be stored at 0°C for 24 hours. DEA NONOate is highly soluble in water and relatively concentrated solutions can be prepared for further dilution. To initiate the release of NO, add a portion of the stock alkaline solution of DEA NONOate to excess buffer of pH 7.0-7.4. The half-life of DEA NONOate is 2 minutes and 16 minutes at 37°C and 22-25°C, respectively, in 0.1 M phosphate buffer (pH 7.4). DEA NONOate liberates 1.5 moles of NO per mole of parent compound.^{1,2} The decomposition of NONOates is nearly instantaneous at pH 5.¹

DEA NONOate is a nitric oxide (NO) donor. The intact DEA NONOate has a characteristic UV absorbance at 250 nm ($\epsilon = 6,500 \text{ M}^{-1}\text{cm}^{-1}$), permitting quantitation in aqueous solutions.¹ The concentration of the basic stock solution of DEA NONOate can be measured by UV if there is any uncertainty about the condition under which it was prepared or stored.

The concentration of DEA NONOate required to produce 50% relaxation in a norepinephrine-constricted strip of isolated rabbit aorta is 0.19 μM .¹ The IC₅₀ for the inhibition of DNA synthesis in A375-C6 human melanoma cells and for inhibition of O⁶-methylguanine-DNA-methyltransferase activity by DEA NONOate is 128 μM and 80 μM , respectively.^{3,4}

References

1. Maragos, C.M., Morley, D., Wink, D.A., *et al. J. Med. Chem.* **34**, 3242-3247 (1991).
2. Keefer, L.K., Nims, R.W., Davies, K.M., *et al. Methods Enzymol.* **268**, 281-293 (1996).
3. Maragos, C.M., Wang, J.M., Hrabie, J.A., *et al. Cancer Res.* **53**, 564-568 (1993).
4. Laval, F. and Wink, D.A. *Carcinogenesis* **5**, 443-447 (1994).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/82100

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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