

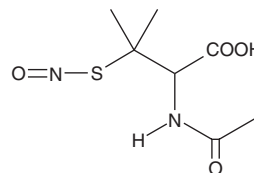
PRODUCT INFORMATION



SNAP

Item No. 82250

CAS Registry No.: 67776-06-1
Formal Name: N-(acetyloxy)-3-nitrosothiovaline
Synonyms: S-Nitroso-N-Acetyl-D,L-Penicillamine
MF: C₇H₁₂N₂O₄S
FW: 220.2
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

SNAP is supplied as a crystalline solid. Stock solutions of SNAP should be prepared by directly dissolving the crystalline compound in acidic deoxygenated buffers (i.e. citrate/HCl buffer (pH 2.0) or 0.5-1 M HCl). These solutions will be stable on ice, in the dark, for several hours. Prior to biological experiments, these stock solutions should be diluted in PBS (pH 7.2) to obtain the desired pH and concentration; the solubility of SNAP in PBS (pH 7.2) is approximately 11 mg/ml. The stability of SNAP is dependent on the presence of trace transition metal ions, which are typically present in all buffers.¹ The stability of SNAP is increased by the addition of EDTA or a metal ion chelator to the aqueous buffer.^{1,2}

Organic stock solutions may be made by dissolving the SNAP in an organic solvent purged with an inert gas. SNAP is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of SNAP in these solvents is approximately 25 mg/ml.

Description

SNAP is an S-nitrosothiol which serves as a NO donor and a potent vasodilator. Its stability in solution varies from seconds to hours depending on temperature, buffer composition and metal content.³⁻⁶ At pH 6-8 and 37°C, the half-life of SNAP is approximately six hours in the presence of transition metal ion chelators.^{1,6} The second-order rate constant for the decomposition of SNAP is 20 M⁻¹s⁻¹.^{1,2}

References

1. Singh, R.J., Hogg, N., Joseph, J., *et al.* Mechanism of nitric oxide release from S-nitrosothiols. *J. Biol. Chem.* **271**, 18596-18603 (1996).
2. Askew, S.C., Barnett, D.J., McAninly, J., *et al.* Catalysis by Cu²⁺ of nitric oxide release from S-nitrosothiols (RSNO). *J. Chem. Soc. Perkin Trans. 2*, 741-745 (1995).
3. Butler, A.R. and Rhodes, P. Chemistry, analysis, and biological roles of S-nitrosothiols. *Anal. Biochem.* **249**, 1-9 (1997).
4. Gasco, A., Fruttero, R., and Sorba, G. NO-donors: An emerging class of compounds in medicinal chemistry. *Il Farmaco* **51**, 617-635 (1996).
5. Cook, J.A., Kim, S.Y., Teague, D., *et al.* Convenient colorimetric and fluorometric assays for S-nitrosothiols. *Anal. Biochem.* **238**, 150-158 (1996).
6. Roy, B., d'Hardemare, A.M., Fontecave, M. New thionitrites: Synthesis, stability, and nitric oxide generation. *J. Org. Chem.* **59**, 7019-7026 (1994).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/25/2022

CAYMAN CHEMICAL

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