

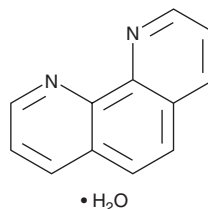
PRODUCT INFORMATION



1,10-Phenanthroline (hydrate)

Item No. 28951

CAS Registry No.: 5144-89-8
Synonym: o-Phenanthroline
MF: $C_{12}H_8N_2 \cdot H_2O$
FW: 198.2
Purity: $\geq 98\%$
UV/Vis.: λ_{max} : 226, 230, 264 nm
Supplied as: A solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



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

Laboratory Procedures

1,10-Phenanthroline (hydrate) is supplied as a solid. A stock solution may be made by dissolving the 1,10-phenanthroline (hydrate) in the solvent of choice, which should be purged with an inert gas. 1,10-Phenanthroline (hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 1,10-phenanthroline (hydrate) in ethanol is approximately 1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

1,10-Phenanthroline (hydrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 1,10-phenanthroline (hydrate) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 1,10-Phenanthroline (hydrate) has a solubility of approximately 0.1 mg/ml in a 1:9 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

1,10-Phenanthrine is a metal chelator and inhibitor of metalloproteases.¹⁻³ It inhibits zinc-dependent hydrolysis of Fa-Gly-Leu-NH₂ by *B. subtilis* neutral protease and *B. thermoproteolyticus* thermolysin.¹ 1,10-Phenanthrine is fungistatic against *P. verrucosa* (MIC = 0.8 $\mu g/ml$) and inhibits zinc-induced *P. verrucosa* metallo-type peptidase activity in a concentration-dependent manner.² It induces uncoupling of and inhibits egg production by adult *S. mansoni* worm pairs *in vitro* when used at concentrations ranging from 0.5 to 150 μM .³ 1,10-Phenanthrine (20 mg/kg per day) reduces worm burden in a mouse model of *S. mansoni* infection.

References

1. Feder, J., Garrett, L.R., and Kochavi, D. Studies on the inhibition of neutral proteases by 1,10-phenanthroline. *Biochim. Biophys. Acta* **235(2)**, 370-377 (1971).
2. Granato, M.Q., Massapust, P.d.A., Rozental, S., et al. 1,10-Phenanthroline inhibits the metallopeptidase secreted by *Phialophora verrucosa* and modulates its growth, morphology and differentiation. *Mycopathologia* **179(3-4)**, 231-242 (2014).
3. Day, T.A. and Chen, G.-Z. The metalloprotease inhibitor 1,10-phenanthroline affects *Schistosoma mansoni* motor activity, egg laying and viability. *Parasitology* **116(Pt. 4)**, 319-325 (1998).

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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