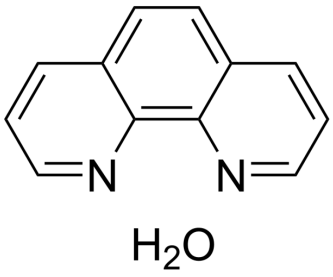
o-Phenanthroline monohydrate

Cat. No.: HY-Y1841
CAS No.: 5144-89-8
Molecular Formula: $C_{12}H_{10}N_2O$
Molecular Weight: 198.22
Target: MMP
Pathway: Metabolic Enzyme/Protease
Storage: Store at room temperature, keep dry and cool



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (504.49 mM; Need ultrasonic)
H_2O : 2 mg/mL (10.09 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.0449 mL	25.2245 mL	50.4490 mL
5 mM	1.0090 mL	5.0449 mL	10.0898 mL
10 mM	0.5045 mL	2.5224 mL	5.0449 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.61 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.61 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

o-Phenanthroline (1,10-Phenanthroline) monohydrate, a metal chelator, prevents the induction of chromosomal aberrations in streptozotocin-treated cells. o-Phenanthroline monohydrate forms a red chelate with Fe^{2+} that absorbs maximally at 510 nm. o-Phenanthroline (1,10-Phenanthroline) monohydrate is also a MMP inhibitor[1][2].

In Vitro

o-Phenanthroline (1,10-Phenanthroline, 1mM) inhibits autolysis of sea cucumber body wall[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2023 May 2;14(1):2523.
- Mol Cell. 2023 Nov 2:S1097-2765(23)00856-0.
- Ind Crops Prod. 2024 Sep 1, 215, 118652.

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REFERENCES

[1]. Guan NanMu, et al. Synergistic inhibition between o-phenanthroline and chloride ion on cold rolled steel corrosion in phosphoric acid. Materials Chemistry and Physics Volume 86, Issue 1, 15 July 2004, Pages 59-68.

[2]. Zi-Qiang Liu, et al. The role of matrix metalloprotease (MMP) to the autolysis of sea cucumber (Stichopus japonicus). J Sci Food Agric. 2019 Oct;99(13):5752-5759.

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