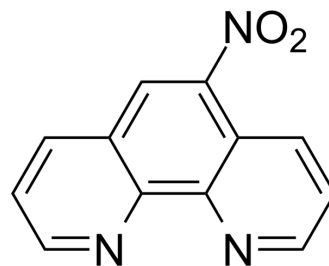


5-Nitro-1,10-phenanthroline

Cat. No.:	HY-W004570
CAS No.:	4199-88-6
Molecular Formula:	C ₁₂ H ₇ N ₃ O ₂
Molecular Weight:	225.2
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



BIOLOGICAL ACTIVITY

Description	5-Nitro-1,10-phenanthroline (5-NP), is a o-Phenanthroline (HY-W004544) derivative, as a mediator of glucose oxidase (GOX) with antituberculous activity. 5-Nitro-1,10-phenanthroline can be applied as redox mediators for oxidases and is suitable for the development of reagent-less biosensors and biofuel cells ^{[1][1]} .								
In Vitro	<p>5-Nitro-1,10-phenanthroline (25 μM; 24 h) kills naturally resistant intracellular bacteria by inducing autophagy in THP-1 macrophages^[2].</p> <p>5-Nitro-1,10-phenanthroline (1x, 5x, 20x or 50x MIC, MIC=0.78 μM; 1 h) also modulates the host machinery to kill intracellular pathogens by inhibiting mycolic acid biosynthesis of Mtb^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[2]</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>Mtb H37Rv, M. bovis BCG and M. bovis BCG-5NP resistant strain</td> </tr> <tr> <td>Concentration:</td> <td>0-12.5 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>Inhibited pathogens with MIC₉₉ values of 0.78 μM (Mtb H37Rv), 0.78 μM (M. bovis BCG), and >12.5 μM (M. bovis BCG-5NP), respectively.</td> </tr> </table>	Cell Line:	Mtb H37Rv, M. bovis BCG and M. bovis BCG-5NP resistant strain	Concentration:	0-12.5 μM	Incubation Time:	24 hours	Result:	Inhibited pathogens with MIC ₉₉ values of 0.78 μM (Mtb H37Rv), 0.78 μM (M. bovis BCG), and >12.5 μM (M. bovis BCG-5NP), respectively.
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REFERENCES

- [1]. Oztekin Y, et al. 1,10-Phenanthroline derivatives as mediators for glucose oxidase. Biosens Bioelectron. 2010 Sep 15;26(1):267-70.
- [2]. Kidwai S, et al. Dual Mechanism of Action of 5-Nitro-1,10-Phenanthroline against Mycobacterium tuberculosis. Antimicrob Agents Chemother. 2017 Oct 24;61(11):e00969-17.

Caution: Product has not been fully validated for medical applications. For research use only.

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