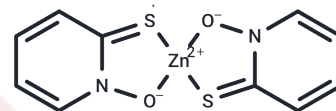


Zinc pyrithione

Chemical Properties

CAS No. :	13463-41-7
Formula:	C ₁₀ H ₈ N ₂ O ₂ S ₂ Zn
Molecular Weight:	317.71
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	Zinc pyrithione (OM-1563), an antibacterial and antifungal agent can disrupt membrane transport by blocking the proton pump.
Targets(IC50)	Proton pump,Antibacterial,Antifungal,Cuproptosis
In vitro	In exposed mussel tissues, Zinc pyrithione accumulates rapidly, with the rate of accumulation being proportional to both exposure concentration and time. Despite a 7-day LC50 (lethal concentration for 50% of the population) of 8.27 μM in relatively higher concentrations of Zinc pyrithione, this indicates a potential threat to coastal ecosystems and marine life, necessitating further investigation into its sub-lethal biological effects.
In vivo	As a specific synthetic potentiator, Zinc pyrithione activates homotypic and heterotypic M channels by inducing a resting potential. It is considered a zinc complex. The Pyrithione ligand (formally a monoanion) chelates with Zn ²⁺ through oxygen and iron-sulfur centers. In the crystalline state, Zinc pyrithione exists as a centrosymmetric dimer, with each zinc atom coordinated to two sulfur and three oxygen centers. However, in solution, the dimers dissociate through the cleavage of zinc-oxygen bonds. Although Zinc pyrithione is a dimer, its activity causing cytoplasmic membrane depolarization may originate from the monomer, with an effective concentration for half-maximum effect (K _{1/2}) of approximately 0.3 mM.

Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 33 mg/mL (103.87 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (6.3 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1475 mL	15.7376 mL	31.4752 mL
5 mM	0.6295 mL	3.1475 mL	6.295 mL
10 mM	0.3148 mL	1.5738 mL	3.1475 mL
50 mM	0.063 mL	0.3148 mL	0.6295 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Ermolayeva E, et al. Appl Environ Microbiol, 1995, 61(9), 3385-3390.

Xiong Q, et al. Nat Chem Biol, 2007, 3(5), 287-296.

Marcheselli M, et al. Environ Toxicol Chem, 2010, 29(11), 2583-2592.

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