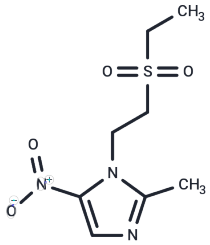
Data Sheet (Cat.No.T0893)

TargetMol

Tinidazole

Chemical Properties



CAS No. :	19387-91-8
Formula:	C8H13N3O4S
Molecular Weight:	247.27
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	Tinidazole (CP12574)a is a 5-nitroimidazole derivative with the antiprotozoal property. Although the mechanism of action has not been fully elucidated, it has been suggested that tinidazole is metabolized and yields nitrite anions and metronidazole. Metronidazole's nitro group, in turn, is reduced via the parasite ferredoxin, thereby generating a series of free nitro radicals including nitro anions. Toxicity is achieved via depletion of sulfhydryl groups and DNA strand breaks with multiple hits having an additive effect and ultimately leading to cell death.
Targets(IC50)	Antibacterial,Antibiotic,Parasite
In vivo	Tinidazole exhibits antimicrobial activity against a broad range of bacteria, including notable anaerobic species (e.g., Bacteroides fragilis, Clostridium difficile), pathogenic protozoa (e.g., Trichomonas vaginalis, Entamoeba histolytica, Giardia duodenalis), and microaerophilic Helicobacter pylori. The compound is active against clinical isolates of 10 Prevotella bivia strains, 11 Bacteroides fragilis strains, and 40 Clostridium difficile strains. The average minimum inhibitory concentrations (MIC) for Tinidazole and metronidazole are, respectively: C. difficile, 0.31 μg/mL and 0.28 μg/mL; B. fragilis, 0.5 μg/mL and 0.71 μg/mL; P. bivia, 2.33 μg/mL and 1.52 μg/mL. In susceptible bacterial and protozoal cells, Tinidazole is reduced to a cytotoxic intermediate that covalently binds to DNA, causing irreversible damage. At low minimum lethal concentrations (MLC), Tinidazole can kill metronidazole-sensitive strains but is only effective against 4 out of 12 metronidazole-resistant strains. Additionally, Tinidazole inhibits all 104 T. vaginalis strains tested with an average MLC of 1014.9 μM and alters morphology, viability, and compliance of trophozoites to Giardia duodenalis.

Solubility Information

Solubility	DMSO: 74.29 mg/mL (300.44 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 7.43 mg/mL (30.05 mM),Solution. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.5 mg/mL (10.11 mM),Sonication is recommended. *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*

In vivo Formulation	*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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.0442 mL	20.2208 mL	40.4416 mL
5 mM	0.8088 mL	4.0442 mL	8.0883 mL
10 mM	0.4044 mL	2.0221 mL	4.0442 mL
50 mM	0.0809 mL	0.4044 mL	0.8088 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

Narcisi EM, et al. Antimicrob Agents Chemother, 1996, 40(5), 1121-1125.
Fung HB, et al. Clin Ther, 2005, 27(12), 1859-1884.
Crowell AL, et al. Antimicrob Agents Chemother, 1996, 40(5), 1121-1125.
Meloni BP, et al. Trans R Soc Trop Med Hyg, 1990, 84(3), 375-379.