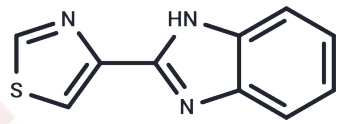
Data Sheet (Cat.No.T0938)

TargetMol

Thiabendazole

Chemical Properties



CAS No. : 148-79-8

Formula: C10H7N3S

Molecular Weight: 201.25

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	Thiabendazole (2-(4-Thiazolyl)benzimidazole) is a benzimidazole derivative with anthelminthic property.
Targets(IC50)	Caspase,Microtubule Associated,Mitochondrial Metabolism,CDK,Parasite,Interleukin, VEGFR,MDM-2/p53
In vitro	Thiabendazole provokes a strong DNA-damaging activity in the human lymphoblastoid cell line that constitutively expresses human CYP1A1 cDNA, but not in the parental line, indicating that CYP1A1 is chiefly implicated in carbaryl and thiabendazole genotoxicity. [1] Thiabendazole provokes a dose- and time-dependent increase in CYP1A1 (EROD activity, protein and mRNA levels) in primary culture of rat hepatocytes. [2] Thiabendazole results in the induction of 7-ethoxyresorufin O-deethylase and 7-pentoxyresorufin O-depentylase activities, CYP1A1, CYP1A2, CYP2B1 and CYP2B1/2 mRNA levels and CYP1A2 and CYP2B1/2 apoprotein levels. Thiabendazole markedly induces GSTP1 mRNA levels, but has only a small effect on GSTT1 mRNA levels. [3] Thiabendazole is rapidly transported by passive diffusion through the human intestinal cells by comparison with the protein-bound residues which are not able to cross the intestinal barrier. Thiabendazole will be firstly metabolized to 5OH-TBZ and subsequently converted to a chemically reactive metabolic intermediate binding to proteins. [4]
In vivo	Thiabendazole results in nephrosis or hydronephrosis and this organ toxicity may lead to the high dose-dependent mortality in treated mice. Thiabendazole results in hormone imbalance and this imbalance may play an important role in the changes of the reproductive or endocrine system in treated mice. [5]

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 1 mg/mL (4.97 mM),Sonication is recommended. DMSO: 50 mg/mL (248.45 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 5 mg/mL (24.84 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% Corn oil: 5 mg/mL (24.84 mM),Solution. 10% DMSO+90% (20% SBE-β-CD in Saline): < 5 mg/mL (24.84 mM),Lower concentrations

In vivo Formulation	may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: < 5 mg/mL (24.84 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.9689 mL	24.8447 mL	49.6894 mL
5 mM	0.9938 mL	4.9689 mL	9.9379 mL
10 mM	0.4969 mL	2.4845 mL	4.9689 mL
50 mM	0.0994 mL	0.4969 mL	0.9938 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

Delescluse C, et al. Biochem Pharmacol, 2001, 61(4), 399-407.
Lemaire G, et al. Life Sci, 2004, 74(18), 2265-2278.
Price RJ, et al. Food Chem Toxicol, 2004, 42(6), 899-908.
Coulet M, et al. Chem Biol Interact, 2000, 127(2), 109-124.
Tada Y, et al. Toxicology, 2001, 169(3), 163-176.