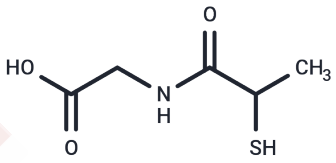
Data Sheet (Cat.No.T1630)

TargetMol

Tiopronin

Chemical Properties



CAS No. : 1953-02-2

Formula: C5H9NO3S

Molecular Weight: 163.19

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	Tiopronin (Acadione), a sulfhydryl acylated derivative of glycine, leads to a reduction in urinary cystine concentration and subsequently reduces cystine stone formation.
Targets(IC50)	ROS
In vitro	Tiopronin is an antioxidant with a free thiol (sulfidryl) group that has been shown to protect against cisplatin nephrotoxicity both in vitro and in vivo. Tiopronin improves the defence of the cochlea and scavenge the reactive oxygen species, whereas vitamin E (a-tocopherol) and vitamin C act by inhibiting lipid peroxidation and preventing free radical formation. [1] Tiopronin (2 mM) completely prevents the Cisplatin-induced increase in enzyme leakage and substantially blocks the decrease of MTT reduction caused by Cisplatin. Tiopronin also significantly protects the renal slices from cisplatin-induced toxic effects. Tiopronin protects against cisplatin-induced nephrotoxicity by acting as an alternative target for Cisplatin both intra- and extracellularly and thus protects against cisplatin-induced depletion of glutathione in the kidney cell. [2] Tiopronin protects rat kidney slices in vitro from the nephrotoxic effects of Cisplatin and does not reduce the antitumour activity of Cisplatin. Tiopronin provides marked protection againstcisplatin-induced increases in urea and creatinine. [3] Tiopronin protects against Cisplatin-induced changes in the adenine nucleotides in rat renal cortical slices. [4]
In vivo	Tiopronin significantly lowers both the serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels, while only the serum ALT level is lowered by ursodeoxycholic acid (UDCA) in rats. Tiopronin significantly decreases the serum and liver levels of triglyceride (TG), total cholesterol (TC) and free fatty acids (FFA) as well as the serum LDL-C level, and increases the serum HDL-C level. [5]

Solubility Information

Solubility	Ethanol: 30 mg/mL (183.83 mM),Sonication is recommended. H2O: 29 mg/mL (177.71 mM),Sonication is recommended. DMSO: 70 mg/mL (428.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (12.26 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 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	6.1278 mL	30.6391 mL	61.2783 mL
5 mM	1.2256 mL	6.1278 mL	12.2557 mL
10 mM	0.6128 mL	3.0639 mL	6.1278 mL
50 mM	0.1226 mL	0.6128 mL	1.2256 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

Fetoni AR, et al. Acta Otolaryngol,2004, 124(4), 421-426.
Huang L, Mao X, Li Y, et al. Multiomics analyses reveal a critical role of selenium in controlling T cell differentiation in Crohn's disease. Immunity. 2021, 54(8): 1728-1744. e7.
Zhang JG, et al. Toxicol Appl Pharmacol,1996, 141(2), 425-433.
Zhang JG, et al. Hum Exp Toxicol,1999, 18(12), 713-717.
Zhang JG, et al. J Pharm Pharmacol,1997, 49(11), 1136-1140.
Wang JQ, et al. Acta Pharmacol Sin,2012, 33(6), 791-797.