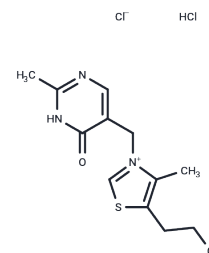


Oxythiamine chloride HCl

Chemical Properties

CAS No. :	614-05-1
Formula:	C ₁₂ H ₁₇ Cl ₂ N ₃ O ₂ S
Molecular Weight:	338.25
Storage:	Keep away from moisture Powder: -20°C for 3 years In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



Biological Description

Description	Oxythiamine chloride HCl is an antimetabolite analog that can inhibit the non-oxidative synthesis pathway of ribose. As a thiamine antagonist, Oxythiamine chloride HCl inhibits transketolase. Oxythiamine chloride HCl can inhibit the proliferation of tumor cells and regulate the apoptosis of cancer cells.
Targets(IC50)	Apoptosis,Endogenous Metabolite
In vitro	<p>Methods: MIA PaCa-2 cells were treated with Oxythiamine chloride HCl (0-40 μM) for 2 days.</p> <p>Results: Oxythiamine chloride HCl inhibited the viability of MIA PaCa-2 cells, with an IC50 of 14.95 μM.</p> <p>Methods: MIA PaCa-2 cells were treated with Oxythiamine chloride HCl (0-500 μM) for 48 hours.</p> <p>Results: Oxythiamine chloride HCl inhibited the expression of 14-3-3 protein beta/alpha in MIA PaCa-2 cells [1].</p> <p>Methods: A549 cells were treated with Oxythiamine chloride HCl (0.1-100 μM) for 6-48 h.</p> <p>Results: Oxythiamine chloride HCl inhibited the proliferation of A549 cells.</p> <p>Methods: A549 cells were treated with Oxythiamine chloride HCl (0.1-100 μM) for 24 h.</p> <p>Results: Oxythiamine chloride HCl induced apoptosis in A549 cells [3].</p> <p>Methods: Lewis lung cancer (LLC) cells were treated with Oxythiamine chloride HCl (0-20 μM).</p> <p>Results: Oxythiamine chloride HCl inhibited the invasion and migration of Lewis lung cancer (LLC) cells, with an IC50 of 8.75 μM [4].</p>
In vivo	<p>Methods: Ehrlich ascites tumor-bearing mice were intraperitoneally injected with Oxythiamine chloride HCl (100-500 mg/kg, i.p.) for 4 consecutive days.</p> <p>Results: Oxythiamine chloride HCl inhibited tumor growth in Ehrlich ascites tumor-bearing mice [2].</p> <p>Methods: Mice subcutaneously implanted with LLC cells were intraperitoneally injected with Oxythiamine chloride HCl (250 or 500 mg/kg) once daily for 5 consecutive weeks.</p> <p>Results: Oxythiamine chloride HCl inhibited tumor cell metastasis by suppressing the expression of MMPs in mice [4].</p>

Solubility Information

A DRUG SCREENING EXPERT

Solubility	H2O: 80 mg/mL (236.51 mM),Sonication is recommended. DMSO: 40 mg/mL (118.26 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9564 mL	14.782 mL	29.5639 mL
5 mM	0.5913 mL	2.9564 mL	5.9128 mL
10 mM	0.2956 mL	1.4782 mL	2.9564 mL
50 mM	0.0591 mL	0.2956 mL	0.5913 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

Wang J, et al. Inhibition of transketolase by oxythiamine altered dynamics of protein signals in pancreatic cancer cells. *Exp Hematol Oncol*. 2013 Jul 27;2:18.

Raïs B, et al. Oxythiamine and dehydroepiandrosterone induce a G1 phase cycle arrest in Ehrlich's tumor cells through inhibition of the pentose cycle. *FEBS Lett*. 1999 Jul 30;456(1):113-8.

Bai L, et al. A dose- and time-dependent effect of oxythiamine on cell growth inhibition in non-small cell lung cancer. *Cogn Neurodyn*. 2022 Jun;16(3):633-641.

Yang CM, et al. The in vitro and in vivo anti-metastatic efficacy of oxythiamine and the possible mechanisms of action. *Clin Exp Metastasis*. 2010 May;27(5):341-9.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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