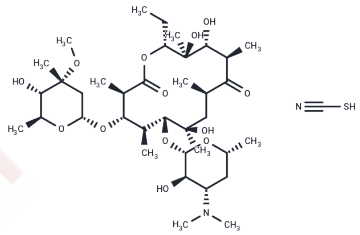
Data Sheet (Cat.No.T11233)

TargetMol

Erythromycin thiocyanate

Chemical Properties



CAS No. : 7704-67-8

Formula: C38H68N2O13S

Molecular Weight: 793.02

Storage: Keep away from moisture
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	Erythromycin thiocyanate is a macrolide antibiotic produced by actinomycetes with a broad antibacterial spectrum. It inhibits RNA-dependent protein synthesis by binding to the bacterial 50S ribosomal subunit and blocking transpeptidation and translocation, without interfering with nucleic acid synthesis. It has also shown antitumor and neuroprotective activities in multiple studies.
Targets(IC50)	Antibacterial,Antibiotic,DNA/RNA Synthesis
In vitro	Methods: The inhibitory effect of erythromycin thiocyanate on the growth of Plasmodium falciparum was detected in vitro. Results: Erythromycin thiocyanate inhibited the growth of Plasmodium falciparum, with an IC_{50} of 58.2 μM and an IC_{90} of 104.0 μM [1]. Methods: Cells were treated with 10 μM and 100 μM erythromycin thiocyanate for 24 h and 72 h, and its antioxidant and anti-inflammatory effects were examined. Results: Erythromycin thiocyanate exerted antioxidant and anti-inflammatory effects by significantly inhibiting the accumulation of 4-HNE and 8-OHdG, and reducing the expression of Iba-1 and TNF-α (all $p<0.01$) [4].
In vivo	Methods: Mice were intragastrically administered erythromycin thiocyanate (0.1–50 mg/kg for 30–120 consecutive days). Results: At doses ≥5 mg/kg, it inhibited tumor growth and prolonged the survival time of mice [3]. Methods: Tumor-bearing mice were intragastrically administered erythromycin thiocyanate (5 mg/kg or 50 mg/kg). Results: The 5 mg/kg dose allowed mice to survive 120 days after inoculation, whereas the 50 mg/kg dose shortened the mean survival time of tumor-bearing mice by 4–5 days [3]. Methods: A single subcutaneous injection (i.h.) of erythromycin thiocyanate (50 mg/kg) was administered to rats with cerebral ischemia-reperfusion injury. Results: Erythromycin thiocyanate exerted protective effects in this model [4].

Solubility Information

Solubility	DMSO: 80 mg/mL (100.88 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.261 mL	6.305 mL	12.610 mL
5 mM	0.2522 mL	1.261 mL	2.522 mL
10 mM	0.1261 mL	0.6305 mL	1.261 mL
50 mM	0.0252 mL	0.1261 mL	0.2522 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

Hamada K, et al. Antitumor effect of erythromycin in mice. Chemotherapy. 1995 Jan-Feb. 41(1):59-69.
Katayama Y, et al. Neuroprotective effects of erythromycin on cerebral ischemia reperfusion-injury and cell viability after oxygen-glucose deprivation in cultured neuronal cells. Brain Res. 2014 Nov 7. 1588:159-67.
Gribble MJ, et al. Erythromycin. Med Clin North Am. 1982 Jan;66(1):79-89.
Nakornchai S, et al. Activity of azithromycin or erythromycin in combination with antimalarial drugs against multidrug-resistant Plasmodium falciparum in vitro. Acta Trop. 2006 Dec;100(3):185-91. Epub 2006 Nov 28.