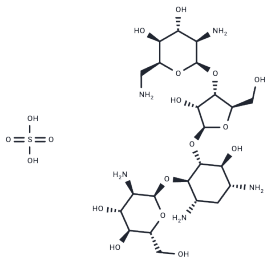
Data Sheet (Cat.No.T1104)

TargetMol

Paromomycin Sulfate

Chemical Properties



CAS No. : 1263-89-4

Formula: C23H47N5O18S

Molecular Weight: 713.71

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	Paromomycin binds specifically to the RNA oligonucleotide at the A site of bacterial 30S ribosomes, thereby causing misreading and premature termination of translation of mRNA and inhibition of protein synthesis followed by cell death. Paromomycin Sulfate (Aminosidine sulfate) is the sulfate salt form of paromomycin, a structural derivative of neomycin, an aminoglycoside antibiotic with amebicidal and bactericidal effects against predominantly aerobic gram-negative bacteria.
Targets(IC50)	Antibacterial,Antibiotic,Parasite
In vitro	In both clinical cases and experimental models of cutaneous leishmaniasis (CL), lesions caused by L. major show a faster and more complete recovery when treated with paromomycin ointment as compared to those caused by L. panamensis and L. amazonensis.
In vivo	Paromomycin, an aminoglycoside antibiotic, exhibits robust antimicrobial activity against a broad spectrum of Gram-positive bacteria, Gram-negative bacteria, some protozoa, and tapeworms. In vitro analysis of amastigote sensitivity within a mouse macrophage model indicated that L. tropica and the L. major strains (ED50s: 1~5 μM) are more sensitive to Paromomycin than L. mexicana (ED50: 39 μM) and L. braziliensis (ED50: 12 μM). The L. donovani strain demonstrates moderate sensitivity (ED50: 6~18 μM), with the exception of the Indian strain, DD8, exhibiting significantly reduced susceptibility (ED50 >150 μM).
Kinase Assay	Concentration-response and kinetic studies: The microsomal protein (30 μg), [1β-3H] androstenedione (6.6 × 105 dpm) and NADPH (270 μM) are used for the concentration-response experiment with an incubation time of 20 minutes. The Aminoglutethimide is initially tested at 10 μM and 100 μM concentrations, followed by a full concentration-response study with at least 8 concentrations ranging from 0.01 μM to 160 μM. For the initial velocity study the concentration of [1β-3H]androstenedione is varied from 7.5 to 100 nM and the incubation time is set to 5 minutes. The tritiated water formed during the conversion of the tritiated substrate, [1β-3H]androstenedione, to estrone is quantified by liquid scintillation counting. Each assay is performed three times in duplicate and the results are treated by nonlinear regression analysis allowing the determination of the half-maximal inhibitory concentration (IC50).

Solubility Information

Solubility	H2O: 255 mg/mL (357.29 mM),Sonication is recommended. DMSO: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4011 mL	7.0056 mL	14.0113 mL
5 mM	0.2802 mL	1.4011 mL	2.8023 mL
10 mM	0.1401 mL	0.7006 mL	1.4011 mL
50 mM	0.028 mL	0.1401 mL	0.2802 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

Davidson RN, et al. ParomomycinTrans R Soc Trop Med Hyg, 2009, 103(7), 653-660.
Xu G, Li T, Chen J, et al. Autosomal dominant retinitis pigmentosa-associated gene PRPF8 is essential for hypoxia-induced mitophagy through regulating ULK1mRNA splicing. Autophagy. 2018, 14(10): 1818-1830
Sun Y, Wu J, Shen B, et al.Discovery of TRPV4-Targeting Small Molecules with Anti-Influenza Effects Through Machine Learning and Experimental Validation.International Journal of Molecular Sciences.2025, 26(3): 1381.
Simon L. Croft, et al. Clin Microbiol Rev, 2006, 19(1), 111-126
Li Zhu, Ruonan Liu, Tangrong Liu, Xuan Zou, Zhe Xu, Huashi Guan. A novel strategy to screen inhibitors of multiple aminoglycoside-modifying enzymes with ultra-high performance liquid chromatography-quadrupole-time-of-flight mass spectrometry[J]. Journal of Pharmaceutical and Biomedical Analysis. 2019 Feb 5;164:520-527.