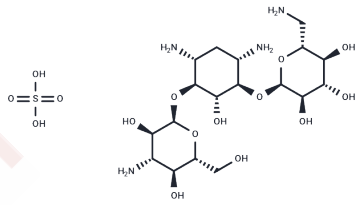
Data Sheet (Cat.No.T0793)

TargetMol

Kanamycin sulfate

Chemical Properties



CAS No. :	25389-94-0
Formula:	C18H38N4O15S
Molecular Weight:	582.58
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	Kanamycin sulfate (Kanamycin monosulfate) is an aminoglycoside antibiotic that interferes with protein synthesis by binding to the 70S ribosomal subunit of bacteria. Kanamycin sulfate exhibits antimicrobial activity against both Gram-positive and Gram-negative bacteria, as well as mycoplasmas.
Targets(IC50)	ribosome,Antibacterial,Antibiotic
In vitro	**METHODS**: Human cell lines HEK293, OVCAR8 and CA46 were treated with Kanamycin sulfate (0-1 mM) and cell viability was measured using the CCK-8 assay. **RESULTS**: Kanamycin showed no cytotoxic effects in any of the cell lines. [1] **METHODS**: Mycobacteria H37Rv, H2, H37RvR-PAS, Ravenel, Kirchbergand and BCG were treated with Kanamycin sulfate (0.1-100 μg/mL) for 2 weeks and tested for antibacterial activity. **RESULTS**: Kanamycin showed good antimicrobial activity against various Mycobacterium species with MICs of 1 μg/mL and 5 μg/mL for Kirchbergand strains, respectively. [2]
In vivo	**METHODS**: To detect ototoxicity, Kanamycin sulfate (800 mg/kg) was administered subcutaneously to C57BL/6J mice twice daily for fifteen days. **RESULTS**: Different ototoxic regimens were evaluated by ABR and DPOAE measurements before and after treatment. Sensory cell loss was quantified by counting hair cells in the cochlea. The study demonstrated that the Kanamycin ototoxicity regimen was safe, well tolerated, and detected early significant changes in hearing thresholds by DPOAE in a small group of mice. [3]

Solubility Information

Solubility	H2O: 100 mg/mL (171.65 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	1.7165 mL	8.5825 mL	17.165 mL
5 mM	0.3433 mL	1.7165 mL	3.433 mL
10 mM	0.1717 mL	0.8583 mL	1.7165 mL
50 mM	0.0343 mL	0.1717 mL	0.3433 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

Zhu Y, et al. Evaluating the influence of common antibiotics on the efficacy of a recombinant immunotoxin in tissue culture. BMC Res Notes. 2019 May 27;12(1):293.
YANAGISAWA K, et al. Studies on kanamycin, a new antibiotic against tubercle bacilli. I. Effect on virulent tubercle bacilli in vitro and in mice. J Antibiot (Tokyo).
Horvath L, et al. Functional and morphological analysis of different aminoglycoside treatment regimens inducing hearing loss in mice. Exp Ther Med. 2019 Aug;18(2):1123-1130.
Firth EC, et al. Effect of induced synovial inflammation on pharmacokinetics and synovial concentration of sodium ampicillin and kanamycin sulfate after systemic administration in ponies. J Vet Pharmacol Ther. 1988 Mar;11(1):56-62.