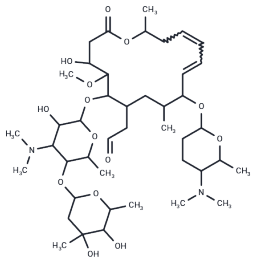
Data Sheet (Cat.No.T0819)

TargetMol

Spiramycin

Chemical Properties



CAS No. : 8025-81-8

Formula: C43H74N2O14

Molecular Weight: 843.07

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Spiramycin (Rovamycin) is a macrolide antibiotic produced by Streptomyces ambofaciens, effective against gram-positive aerobic pathogens, N. gonorrhoeae, and staphylococci, and is used to treat infections caused by bacteria and Toxoplasma gondii.
Targets(IC50)	Antibacterial,Antibiotic,Parasite
In vivo	Spiramycin acts by binding to the bacterial 50S ribosomal subunit, thereby inhibiting translocation. Its primary mechanism during translocation involves stimulating the dissociation of peptidyl-tRNA from the ribosome. The compound reduces the protective effect of anisomycin on 23S rRNA nucleotides. Spiramycin exhibits potent antibacterial activity against the genus Prevotella, Streptococcus mitis, Archaea, strains of Porphyromonas, and Bacteroides, with metronidazole enhancing its efficacy. At 30°C, Spiramycin can inhibit protein synthesis in wild-type cells but not kill mutant or wild-type cells. Treating lipopolysaccharide-stimulated human monocytes with Spiramycin and erythromycin increases the total production of IL-6 without affecting TNFα, IL-1α, or IL-1β production. Spiramycin inhibits protein synthesis by stimulating the dissociation of peptidyl-tRNA from ribosomes. It dose-dependently inhibits the proliferative response of human mononuclear cells stimulated by pulse-width modulation and polyhydroxyalkanoate esters. Additionally, Spiramycin induces a reduction in tritiated thymidine uptake, suggesting interference with an early stage of the cell cycle.

Solubility Information

Solubility	DMSO: 93 mg/mL (110.31 mM),Sonication is recommended. Ethanol: 93 mg/mL (110.31 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1861 mL	5.9307 mL	11.8614 mL
5 mM	0.2372 mL	1.1861 mL	2.3723 mL
10 mM	0.1186 mL	0.5931 mL	1.1861 mL
50 mM	0.0237 mL	0.1186 mL	0.2372 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.

Reference

Poulsen SM, et al. J Mol Biol, 2000, 304(3), 471-481.
Li H, Li J, Li J, et al.Carrimycin inhibits coronavirus replication by decreasing the efficiency of programmed-1 ribosomal frameshifting through directly binding to the RNA pseudoknot of viral frameshift-stimulatory element. Acta Pharmaceutica Sinica B.2024
Brisson-Noël A, et al. J Antimicrob Chemother, 1988, 22, 13-23.
Menninger JR, et al. Antimicrob Agents Chemother, 1982, 21(5), 811-818.
Roche Y, et al. J Antimicrob Chemother, 1986, 17(2), 195-203.
Bailly S, et al. Antimicrob Agents Chemother, 1991, 35(10), 2016-2019.
Etewa SE, et al. Assessment of spiramycin-loaded chitosan nanoparticles treatment on acute and chronic toxoplasmosis in mice. J Parasit Dis. 2018 Mar;42(1):102-113.