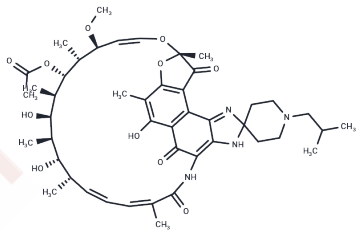
Data Sheet (Cat.No.T1501)

TargetMol

Rifabutin

Chemical Properties



CAS No. : 72559-06-9

Formula: C46H62N4O11

Molecular Weight: 847.00

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	Rifabutin (LM-427) inhibits bacterial DNA-dependent RNA polymerase, thereby suppressing the initiation of RNA formation and leading to inhibition of RNA synthesis and transcription. Rifabutin is a semisynthetic ansamycin antibiotic with potent antimycobacterial properties.
Targets(IC50)	HSP,Antibacterial,Antibiotic,DNA/RNA Synthesis
In vitro	In chimeric mice, the combined use of Rifabutin (100 mg/kg) and emtricitabine (10 mg/kg) resulted in a 75% survival rate among mice infected with either Toxoplasma or Plasmodium. Additionally, in these mice, Rifabutin significantly increased human CYP3A4 mRNA expression (by 7.4-fold), CYP3A4 protein levels (by 3.0-fold), testosterone 6β-hydroxylase activity (by 2.4-fold), and dexamethasone 6-hydroxylase activity (by 1.9-fold).
In vivo	Rifabutin exhibits broad-spectrum antimicrobial activity and, compared to rifampicin, demonstrates higher potency in vitro against the Mycobacterium avium complex (MAC), Mycobacterium tuberculosis, and Mycobacterium leprae. It is also effective against Group A Streptococcus, Campylobacter jejuni, Neisseria gonorrhoeae, Haemophilus influenzae, Staphylococcus species, Haemophilus ducreyi, Helicobacter pylori, Neisseria meningitidis, Chlamydia trachomatis, and Toxoplasma gondii. While rifabutin is active against most atypical mycobacteria, including Mycobacterium kansasii, it is less effective against Mycobacterium chelonae. Its isoenzyme selectivity closely resembles that of rifampicin, although rifampin induces to a greater extent, by 2-4 times. Furthermore, rifabutin enhances the glucuronidation of β-estradiol, 4-hydroxytamoxifen, and 1-naphthol by 2-3 times.

Solubility Information

Solubility	Ethanol: 38.00 mg/mL (44.86 mM),Sonication is recommended. DMSO: 50.00 mg/mL (59.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.00 mg/mL (2.36 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may*

In vivo Formulation	*vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1806 mL	5.9032 mL	11.8064 mL
5 mM	0.2361 mL	1.1806 mL	2.3613 mL
10 mM	0.1181 mL	0.5903 mL	1.1806 mL
50 mM	0.0236 mL	0.1181 mL	0.2361 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

Kunin CM, et al. Clin Infect Dis, 1996, 22 Suppl 1, S3-13.
Ma X, Li H, Ji J, et al.Overexpression of outer membrane protein A (OmpA) increases aminoglycoside sensitivity in mycobacteria.BMC microbiology.2024, 24(1): 472.
Oesch F, et al. J Antimicrob Chemother, 1996, 37(6), 1111-1119.
Katoh M, et al. Xenobiotica, 2005, 35(9), 863-875.
Araujo FG, et al. Antimicrob Agents Chemother, 1994, 38(3), 570-575.