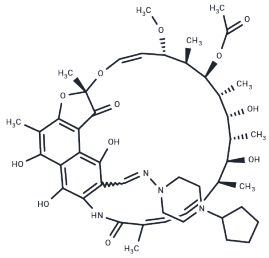
Data Sheet (Cat.No.T1629)

TargetMol

Rifapentine

Chemical Properties



CAS No. : 61379-65-5

Formula: C47H64N4O12

Molecular Weight: 877.03

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	Rifapentine (Rifapentinum) is a long-acting, cyclopentyl-substituted derivative of rifamycin used to treat mycobacterium infections.
Targets(IC50)	Antibacterial,Antibiotic,DNA/RNA Synthesis
In vitro	Rifapentine inhibits the function of DNA-dependent RNA polymerase in strains of M. tuberculosis, while inducing no effect on mammalian cells. Both Rifapentine and its active metabolite, 25-desacetylrifapentine, localize within monocyte-derived macrophages, thus allowing for intracellular inhibition of M. tuberculosis at a greater kill rate as compared with that of the parent or metabolite alone. Rifapentine is deacetylated in the liver and induces cytochrome P450 much less than rifampin. [1] Rifapentine has shown higher bacteriostatic and bactericidal activities (MICs and MBCs) than RMP, especially against intracellular bacteria growing in human monocyte-derived macrophages. [2]
In vivo	Rifapentine inhibits bacterial RNA synthesis by binding to the β-subunit of DNA-dependent RNA polymerase in susceptible species. Rifapentine is generally more active than rifampicin against sensitive strains of M. tuberculosis. [3] Rifapentine significantly increases the rate of antipyrine and pentobarbital metabolism in vivo. Rifapentine also increases liver weight, the content of liver microsomal protein and cytochrome P-450, the activity of NADPH-cytochrome C reductase and NADPH oxidase. [4] Rifapentine combined with isoniazid (INH) and pyrazinamide (PZA) administered daily results in an apparent clearance of M.tuberculosis organisms in the lungs and spleens of infected mice after 10 weeks of treatment. [5]

Solubility Information

Solubility	DMSO: 93 mg/mL (106.04 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 14 mg/mL (15.96 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: 3.3 mg/mL (3.76 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*

In vivo Formulation	*used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1402 mL	5.7011 mL	11.4021 mL
5 mM	0.228 mL	1.1402 mL	2.2804 mL
10 mM	0.114 mL	0.5701 mL	1.1402 mL
50 mM	0.0228 mL	0.114 mL	0.228 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

Temple ME, et al. Ann Pharmacother, 1999, 33(11), 1203-1210.
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.
Mor N, et al. Antimicrob Agents Chemother, 1995, 39(9), 2073-2077.
Jarvis B, et al. Drugs, 1998, 56(4), 607-616.
Liu DY, et al. Methods Find Exp Clin Pharmacol, 1990, 12(2), 109-113.
Lenaerts AM, et al. Antimicrob Agents Chemother, 1999, 43(10), 2356-2360.