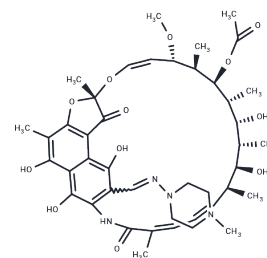


Rifampicin

Chemical Properties

CAS No. :	13292-46-1
Formula:	C ₄₃ H ₅₈ N ₄ O ₁₂
Molecular Weight:	822.94
Storage:	Keep away from moisture Powder: -20°C for 3 years In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



Biological Description

Description	Rifampicin (Rifamycin AMP) is a broad-spectrum antibiotic. Rifampicin has a strong antibacterial effect against Mycobacterium tuberculosis and is also effective against gram-positive and gram-negative bacteria and viruses.
Targets(IC50)	Antibacterial, Antibiotic, Influenza Virus, Virus Protease
In vitro	<p>METHODS: PC12 cells were treated with Rifampicin (25-100 μM) for 3-24 h. The expression levels of target proteins were detected by Western Blot.</p> <p>RESULTS: At 6 h of incubation, Rifampicin induced a significant increase in GRP78 protein expression in PC12 cells. Prolonged incubation with Rifampicin further enhanced the induction of GRP78 up to 24 h. PC12 cells showed a dose-dependent induction of GRP78 when incubated with Rifampicin at concentrations in the 25-100 μM range. [1]</p> <p>METHODS: Human colon cancer cells LS180 were treated with Rifampicin (10 μM) for 24-144 h. Gene levels were measured by RT-PCR.</p> <p>RESULTS: The total expression of NR112 mRNA was reduced by 40% after 24 h of Rifampicin treatment, and the expression of PXR.3 mRNA was reduced by 45% after 24 h of Rifampicin treatment. [2]</p>
In vivo	Rifampicin (200, 400 mg/kg) can induce fatty liver at high concentrations [4]. Rifampicin (30mg/kg, i.p.) treatment of S464P biofilms in vivo causes a slight decline in bioluminescence from these catheters compared with the parental signal, but it does not affect bioluminescence in mice infected with mutant H481Y [5].

Solubility Information

Solubility	DMSO: 87.5 mg/mL (106.33 mM), Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (6.08 mM), Solution. <i>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 vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.2152 mL	6.0758 mL	12.1516 mL
5 mM	0.243 mL	1.2152 mL	2.4303 mL
10 mM	0.1215 mL	0.6076 mL	1.2152 mL
50 mM	0.0243 mL	0.1215 mL	0.243 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

- Jing X, et al. Rifampicin protects PC12 cells from rotenone-induced cytotoxicity by activating GRP78 via PERK-eIF2 α -ATF4 pathway. *PLoS One*. 2014 Mar 17;9(3):e92110.
- Zhang Y, Cai Y, Wang T, et al. A common tolerance mechanism of bacterial biofilms to antibiotics. *bioRxiv*. 2023: 2023.01. 30.526163.
- Zhang Y, Cai Y, Jin X, et al. Persistent glucose consumption under antibiotic treatment protects bacterial community. *Nature Chemical Biology*. 2024: 1-9.
- Nilles J, et al. The differences in drug disposition gene induction by rifampicin and rifabutin are unlikely due to different effects on important pregnane X receptor (NR112) splice variants. *Naunyn Schmiedeberg's Arch Pharmacol*. 2024 Apr;397(4):2485-2496.
- Batten J. Rifampicin in treatment of experimental tuberculosis in mice. *Tubercle*. 1969 Sep;50(3):294-8.
- Piriou A, et al. Fatty liver induced by high doses of rifampicin in the rat: possible relation with an inhibition of RNA polymerases in eukariotic cells. *Arch Toxicol Suppl*. 1979;(2):333-7.
- Yu J, et al. Monitoring in vivo fitness of rifampicin-resistant *Staphylococcus aureus* mutants in a mouse biofilm infection model. *J Antimicrob Chemother*. 2005 Apr;55(4):528-34. Epub 2005 Mar 2.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel: 781-999-4286 E_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481