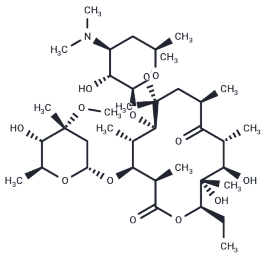
Data Sheet (Cat.No.T1434)

TargetMol

Clarithromycin

Chemical Properties



CAS No. : 81103-11-9

Formula: C38H69NO13

Molecular Weight: 747.95

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	Clarithromycin (A-56268) is a Macrolide Antimicrobial. The mechanism of action of clarithromycin is as a Cytochrome P450 3A4 Inhibitor, and Cytochrome P450 3A Inhibitor, and P-Glycoprotein Inhibitor. The chemical classification of clarithromycin is Macrolides.
Targets(IC50)	ribosome,Antibacterial,Antibiotic,Autophagy,Cytochromes P450,MRP
In vitro	Clarithromycin suppresses this production in a dose-dependent manner in both monocytes and THP-1 cells. Clarithromycin regulates three other promoters that have either the NF-kappa B or the AP-1 binding sequences: two synthetic (pAP-1-Luc and pNF-kappa B-Luc) and one naturally occurring (ELAM-Luc). [1] Clarithromycin suppresses NF-kappaB activation induced by TNF-alpha in U-937 and Jurkat cells in a concentration-related manner. Clarithromycin inhibits NF-kappaB activation induced by TNF-alpha in U-937, Jurkat, and A549 cells and PBMC and by SEA in PBMC. Clarithromycin prevents NF-kappaB-dependent reporter gene expression in U-937 cells. [2] Clarithromycin results in a significant suppression of production of each cytokine in 71% and a significant increase in 29% of the human monocytes. [3] Clarithromycin inhibits tumor necrosis factor (TNF)-alpha-induced IL-8 gene expression in a dose- and incubation time-dependent manner. Clarithromycin represses AP-1 binding in TNF-alpha-treated BET-1A cells. Clarithromycin represses IL-8 gene transcription mainly via the AP-1 binding site in human bronchial epithelial cells. [4] Clarithromycin suppresses IL-1 beta gene expression in human nasal epithelial cells stimulated by H. influenzae endotoxin (HIE). Clarithromycin suppresses intercellular adhesion molecule-1 gene expression in nasal fibroblasts stimulated by IL-1 beta. Clarithromycin reduces DNA-binding activity of NF-kappa B in both human nasal epithelial cells and fibroblasts stimulated by HIE or IL-1 beta, respectively. [5]

Solubility Information

Solubility	DMSO: 38 mg/mL (50.81 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (2.67 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 vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.337 mL	6.6849 mL	13.3699 mL
5 mM	0.2674 mL	1.337 mL	2.674 mL
10 mM	0.1337 mL	0.6685 mL	1.337 mL
50 mM	0.0267 mL	0.1337 mL	0.2674 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

Kikuchi T, et al. J Antimicrob Chemother, 2002, 49(5), 745-755.
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
Ichiyama T, et al. Antimicrob Agents Chemother, 2001, 45(1), 44-47.
Khan AA, et al. Int J Antimicrob Agents, 1999, 11(2), 121-132.
Abe S, et al. Am J Respir Cell Mol Biol, 2000, 22(1), 51-60.
Miyanohara T, et al. Laryngoscope, 2000, 110(1), 126-131.