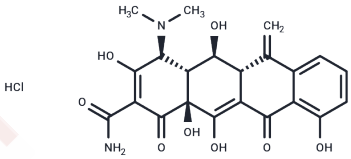
Data Sheet (Cat.No.T0518)

TargetMol

Methacycline hydrochloride

Chemical Properties



CAS No. :	3963-95-9
Formula:	C22H23ClN2O8
Molecular Weight:	478.88
Storage:	Keep away from direct sunlight,Store under nitrogen 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	Methacycline hydrochloride (Rondomycin) is a broad-spectrum semisynthetic antibiotic related to TETRACYCLINE but excreted more slowly and maintaining effective blood levels for a more extended period.
Targets(IC50)	ribosome,Antibacterial,Antibiotic
In vitro	Methacycline, within pulmonary alveolar macrophages, does not alter the response gene of TGF-β1 nor attenuates the aggregation of inflammatory cells. Following tracheal aspiration of bleomycin, intraperitoneal injection of Methacycline at 100 mg/kg, starting on day 10, enhances survival rates by day 17. Methacycline mitigates bleomycin-induced classical EMT (Epithelial-Mesenchymal Transition) markers, including SNAIL1, TWIST1, type I collagen, fibronectin, and their mRNA expressions.
In vivo	Methacycline inhibits the TGF-β1-induced non-Smad signaling pathways, including the activation of c-Jun N-terminal kinase (JNK), p38, and Akt, without suppressing Smad or β-catenin transcriptional activities. It does not affect the baseline activities of JNK, p38, or Akt, nor the TGF-β1 response of lung fibroblasts. Additionally, methacycline inhibits the TGF-β1-induced expression of α-smooth muscle actin (α-SMA), SNAIL1, and type I collagen in primary alveolar epithelial cells.

Solubility Information

Solubility	DMSO: 27.5 mg/mL (57.43 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 2 mg/mL (4.18 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	2.0882 mL	10.441 mL	20.8821 mL
5 mM	0.4176 mL	2.0882 mL	4.1764 mL
10 mM	0.2088 mL	1.0441 mL	2.0882 mL
50 mM	0.0418 mL	0.2088 mL	0.4176 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

Xi Y, et al. Am J Respir Cell Mol Biol,2014, 50(1), 51-60.