Doxycycline

Chemical Properties

CAS No. :	564-25-0
Formula：	C22H24N2O8
Molecular Weight：	444.43
Appearance：	no data available
Storage：	Powder: -20°C for 3 years	In solvent: -80°C for 1 year
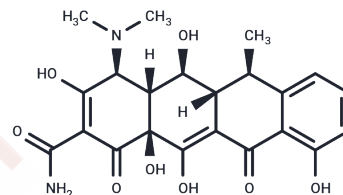
Biological Description

Description	Doxycycline (Doxiciclina) belongs to the tetracycline class of antibiotics and is a broad-spectrum metalloproteinase (MMP) inhibitor with oral activity. Doxycycline has antibacterial activity and antitumor activity.
Targets(IC50)	MMP,ribosome,Antibacterial,Antibiotic,Parasite
In vitro	**METHODS**: Twenty-two tumor cells were treated with Doxycycline for 48 h. Cell viability was measured by MTT. **RESULTS**: Lung cancer cells were more sensitive to Doxycycline than most other cell lines. NCI-H446 and A549 cells were sensitive to Doxycycline with IC50s of 1.70 μM and 1.06 μM, respectively. [1] **METHODS**: Human pancreatic cancer cells PANC-1 were treated with Doxycycline (10-40 μg/mL) for 8-24 h. The cell cycle was detected by Flow Cytometry. **RESULTS**: Doxycycline caused the cells to arrest in the G1-S phase of the cell cycle. [2]
In vivo	**METHODS**: To detect anti-tumor activity in vivo, Doxycycline (50 mg/kg) was administered intraperitoneally once daily for fifteen days to BALB/c mice harboring human mammary carcinoma tumor 4T1. **RESULTS**: Doxycycline delayed tumor growth and reduced the number of tumor-associated macrophages and blood vessels. [3] **METHODS**: To assay antimicrobial activity in vivo, Doxycycline (40 mg/kg) was administered intraperitoneally to BALB/c mice exposed to B. pseudomallei 1026b twice daily for two weeks. **RESULTS**: Doxycycline-treated mice survived 100% of the time, and no B. pseudomallei DNA was amplified from the lungs or spleens of the majority of the surviving mice. [4]

Solubility Information

Solubility	10% DMSO+90% Saline: 4 mg/mL (9 mM),Solution. DMSO: 200 mg/mL (450.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2501 mL	11.2504 mL	22.5007 mL
5 mM	0.450 mL	2.2501 mL	4.5001 mL
10 mM	0.225 mL	1.125 mL	2.2501 mL
50 mM	0.045 mL	0.225 mL	0.450 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.

Reference

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