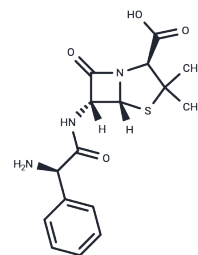


Ampicillin

Chemical Properties

CAS No. :	69-53-4
Formula:	C ₁₆ H ₁₉ N ₃ O ₄ S
Molecular Weight:	349.4
Appearance:	no data available
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year



Biological Description

Description	Ampicillin (Aminobenzylpenicillin) is a semi-synthetic penicillin belonging to the β -lactam group of antibiotics. Ampicillin has bactericidal activity against a wide range of Gram-positive and Gram-negative bacteria.
Targets(IC50)	Antibacterial,Antibiotic
In vitro	METHODS: E. coli was treated with Ampicillin (0.1-10 μg/mL) for 6 h. Growth was measured using a Fisher Electrophotometer. RESULTS: No differences in E. coli growth were observed at concentrations of 0, 0.1, and 1.0 μG. 2.5, 5, and 10 μG concentrations of Ampicillin inhibited E. coli growth. [1] METHODS: Pharyngeal cancer cells Detroit-562 were treated with Ampicillin (10-100 μM) for 72 h. Cell viability was measured by MTT. RESULTS: The Ampicillin-treated groups at concentrations of 10, 25 and 50 μM showed higher cell viability than the control cells, with values of 112%, 107% and 106%, respectively. At concentrations of 75 and 100 μM, there was a slight but not significant decrease in cell viability with values of approximately 95% and 94%, respectively. [2]
In vivo	METHODS: To test the neuroprotective mechanism in a mouse model of transient total forebrain ischemia, Ampicillin (200 mg/kg) was injected intraperitoneally into C57BL/6 mice once a day for five days, and forebrain ischemia was induced 24 h after the last injection. RESULTS: Pretreatment with Ampicillin significantly attenuated neuronal damage in the CA1 subregion of the hippocampus, and Ampicillin may provide neuroprotection against cerebral ischemia/reperfusion injury by inducing GLT-1 protein and inhibiting MMP activity in the hippocampus of mice. [3] METHODS: To study the in vivo activity, Ampicillin (10-100 mg/kg) was administered by gavage to C57BL/6 mice once daily for two days. RESULTS: Exposure of mice to Ampicillin induced anxiety and colitis, and increased Aspergillus flora in the gut microbiota. [4]

Solubility Information

Solubility	DMSO: 22.5 mg/mL (64.4 mM),Sonication is recommended. 0.1 M NaOH: 25 mg/mL (71.55 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.862 mL	14.3102 mL	28.6205 mL
5 mM	0.5724 mL	2.862 mL	5.7241 mL
10 mM	0.2862 mL	1.431 mL	2.862 mL
50 mM	0.0572 mL	0.2862 mL	0.5724 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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- Du H X, Yue S Y, Niu D, et al. Alcohol intake exacerbates experimental autoimmune prostatitis through gut microbiota driving cholesterol biosynthesis-mediated Th17 differentiation. International Immunopharmacology. 2024, 139: 112669.

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