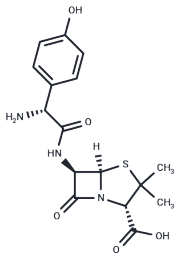
Data Sheet (Cat.No.T1005)

TargetMol

Amoxicillin

Chemical Properties



CAS No. : 26787-78-0

Formula: C16H19N3O5S

Molecular Weight: 365.4

Storage: Store at low temperature
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	Amoxicillin (Amoxycillin) binds to and inactivates penicillin-binding proteins (PBPs) located on the inner membrane of the bacterial cell wall. Amoxicillin Anhydrous is the anhydrous form of a broad-spectrum, semisynthetic aminopenicillin antibiotic with bactericidal activity. Inactivation of PBPs interferes with the cross-linkage of peptidoglycan chains necessary for bacterial cell wall strength and rigidity. This interrupts bacterial cell wall synthesis and results in the weakening of the bacterial cell wall and causes cell lysis.
Targets(IC50)	Antibacterial,Antibiotic
In vivo	Amoxicillin was released more rapidly from phosphate buffer solution at pH 7.8 than from hydrochloric acid at pH 1.0. Amoxicillin was degraded in hydrochloric acid solution at 37°C, pH 1.0, indicating that Amoxicillin is less stable in acidic environment. Amoxicillin (≤8 mg/ml) inhibited 4 out of 15 strains.Amoxicillin (4 mg/ml) in combination with clavulanic acid (≤2 mg/ml) Amoxicillin (4 mg/ml) in combination with clavulanic acid (≤2 mg/ml) inhibited 14 out of 15 strains. In combination with cefotaxime (4 mg/ml), the IC50 of Amoxicillin on the strains was reduced from 0.5 mg/ml to 0.06 mg/ml, ranging from 0.01 to 0.25 mg/ml.Amoxicillin-treated cells secreted large amounts of IL-5, with little or no secretion of IL-4, TNFα, and interferon-gamma. Amoxicillin-specific T-cell clones did not exhibit drug-specific cytotoxicity, but were present to kill target cells at concanavalin A, suggesting that its primary capacity is cytolysis.

Solubility Information

Solubility	DMSO: 250 mg/mL (684.18 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: 2 mg/mL (5.47 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	2.7367 mL	13.6836 mL	27.3673 mL
5 mM	0.5473 mL	2.7367 mL	5.4735 mL
10 mM	0.2737 mL	1.3684 mL	2.7367 mL
50 mM	0.0547 mL	0.2737 mL	0.5473 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

Yawalkar N, et al. J Invest Dermatol, 2000, 115(4), 647-652.
Shen X, Zhang W, Peng C, et al. In vitro anti-bacterial activity and network pharmacology analysis of Sanguisorba officinalis L. against Helicobacter pylori infection. Chinese medicine. 2021, 16(1): 1-19.
Liu Z, et al. J Control Release, 2005, 102(1), 135-144.
Yan J, Peng C, Chen P, et al. In-vitro anti-Helicobacter pylori activity and preliminary mechanism of action of Canarium album raeusch. Fruit extracts. Journal of Ethnopharmacology. 2021: 114578.
Peng C, Sang S, Shen X, et al. In vitro anti-Helicobacter pylori activity of Syzygium aromaticum and the preliminary mechanism of action. Journal of Ethnopharmacology. 2022: 114995.
Cynamon MH, et al. Antimicrob Agents Chemother, 1983, 24(3), 429-431.
Mainardi JL, et al. Antimicrob Agents Chemother, 1995, 39(9), 1984-1987.
Shen X, Zhang W, Peng C, et al. In vitro anti-bacterial activity and network pharmacology analysis of Sanguisorba officinalis L. against Helicobacter pylori infection[J]. Chinese medicine. 2021, 16(1): 1-19.

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