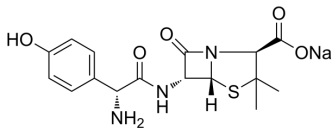
Amoxicillin sodium

Cat. No.:	HY-B0467
CAS No.:	34642-77-8
Molecular Formula:	$C_{16}H_{18}N_3NaO_5S$
Molecular Weight:	387.39
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (258.14 mM; Need ultrasonic)
DMSO : 100 mg/mL (258.14 mM; Need ultrasonic)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	2.5814 mL	12.9069 mL	25.8138 mL
5 mM	0.5163 mL	2.5814 mL	5.1628 mL
10 mM	0.2581 mL	1.2907 mL	2.5814 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (258.14 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.37 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (2.58 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (2.58 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Amoxicillin (Amoxycillin) sodium is an antibiotic with good oral absorption and broad spectrum antimicrobial activity. Amoxicillin sodium inhibits the biosynthesis of polypeptides in the cell wall, thereby inhibiting cell growth[1][2][3].

In Vitro

Amoxicillin (Amoxycillin) sodium (1-100 μM; 24 hours; L. acidophilus) decreases living cells and increases degree of cell wall rupture in a dose-dependent manner[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Amoxicillin (Amoxycillin) sodium (7 mg/kg; i.h.; female ICR/Swiss mice) inhibits strain numbers and improves the survival rate of rats in 1 mg/L or less[2].

Amoxicillin (Amoxycillin) sodium (1.6-9.5 mg/kg; p.o.; daily, for 7 or 14 days; swiss albino mice) has against infection with chlamydia trachomatis in mice[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female ICR/Swiss mice[2]
Dosage:	7 mg/kg
Administration:	Subcutaneous injection; every 8 h, for 24 hours
Result:	Inhibited bacterial numbers in a dose-dependent manner.

Animal Model:	Female ICR/Swiss mice[2]
Dosage:	7 mg/kg
Administration:	Subcutaneous injection; every 8 h, for 4 days
Result:	Survived all animals that were infected with organisms for which MICs were 1 mg/L or less, and with the two strains for which MICs were 2 mg/L, 20 to 40% mortality.

Animal Model:	Swiss albino mice[3]
Dosage:	1.6 and 9.5 mg/kg
Administration:	Oral administration; daily, for 7 or 14 days
Result:	Improved the activity of Chlamydia trachomatis infection in mice.

CUSTOMER VALIDATION

- Nat Commun. 2022 Mar 2;13(1):1116.
- Chemosphere. 2023 Oct 3:344:140353.
- Chemosphere. 2019 Jun;225:378-387.
- Environ Sci Pollut Res Int. 2017 Feb;24(6):5918-5932.
- Antimicrob Agents Chemother. 2021 Feb 17;65(3):e01921-20.

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REFERENCES

[1]. Guo Y, et, al. Metabolic response of Lactobacillus acidophilus exposed to amoxicillin. J Antibiot (Tokyo). 2022 May;75(5):268-281.

[2]. Andes D, et, al. In vivo activities of amoxicillin and amoxicillin-clavulanate against Streptococcus pneumoniae: application to breakpoint determinations. Antimicrob Agents

[3]. Kramer MJ, et, al. Activity of oral amoxicillin, ampicillin, and oxytetracycline against infection with chlamydia trachomatis in mice. J Infect Dis. 1979 Jun;139(6):717-9.

[4]. http://en.wikipedia.org/wiki/Amoxicillin

Caution: Product has not been fully validated for medical applications. For research use only.

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