

Product Information

Amoxicillin

Product Number **A 8523**

Storage Temperature 2-8 °C

Product Description

Molecular Formula: C₁₆H₁₉N₃O₅S

Molecular Weight: 365.4

CAS Number: 26787-78-0

λ_{\max} : 230 nm, 274 nm (ethanol)¹

Extinction coefficient: E^{mm} = 10.85 (230 nm),
1.4 (274 nm) (ethanol)¹

Synonyms: amoxycillin, [2S-[2 α ,5 α ,6(S*)]]-6-[[amino(4-hydroxyphenyl)acetyl]amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid; (—)-6-[2-amino-2-(*p*-hydroxyphenyl)acetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid^{1,2}

Amoxicillin, the 4-hydroxy analog of ampicillin, is an antibiotic with similar ranges of actions and utility to ampicillin. It has particular antibacterial activity against *Enterococcus faecalis*, *Helicobacter pylori*, and *Salmonella* species. Because β -lactamases inactive amoxicillin, amoxicillin is sometimes used in conjunction with β -lactamase inhibitors such as clavulanic acid to extend its spectrum of activity.²

The mode of absorption of amoxicillin in HT29-19A and Caco2 epithelial cell monolayers and in epithelium either treated or not treated with *Helicobacter pylori* has been studied.³ The use of amoxicillin (0 - 1 μ g/ml) to probe the susceptibility of HEP-2 cells to attached versus free-floating *Helicobacter pylori* has been investigated.⁴

An analytical method for amoxicillin in plasma that combines ion pairing and HPLC has been published.⁵ A combination HPLC-fluorimetric method for the detection of amoxicillin in plasma and gastric samples has been described.⁶ The use of HPLC combined with electrospray MS to analyze tissue samples for amoxicillin has been reported.⁷

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in 1 M ammonium hydroxide (50 mg/ml), yielding a clear, colorless to light yellow solution.

Storage/Stability

A study of the solution stability of amoxicillin sodium (10 mg/ml) in sterile water has indicated that amoxicillin sodium is unstable in aqueous solutions stored between -20 to 0 °C. Solutions of amoxicillin sodium should be stored below -30 °C.⁸

References

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4. Simala-Grant, J. L., et al., Antibiotic susceptibility of attached and free-floating *Helicobacter pylori*. *J. Antimicrob. Chemother.*, **47(5)**, 555-563 (2001).
5. Cass, Q. B., et al., Determination of amoxycillin in human plasma by direct injection and coupled-column high-performance liquid chromatography. *J. Chromatogr. A*, **987(1-2)**, 235-241 (2003).
6. Wibawa, J. I., et al., Measurement of amoxicillin in plasma and gastric samples using high-performance liquid chromatography with fluorimetric detection. *J. Chromatogr. B Analyt. Technol. Biomed. Life Sci.*, **774(2)**, 141-148 (2002).

7. De, B. S., et al., Quantitative analysis of amoxycillin and its major metabolites in animal tissues by liquid chromatography combined with electrospray ionization tandem mass spectrometry. *Anal. Chem.*, **74(6)**, 1393-1401 (2002).
8. Concannon, J., et al., Stability of aqueous solutions of amoxicillin sodium in the frozen and liquid states. *Am. J. Hosp. Pharm.*, **43(12)**, 3027-3030 (1986).

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