Amoxicillin

Product Description
Molecular Formula: C$_{16}$H$_{19}$N$_{3}$O$_{5}$S
Molecular Weight: 365.4
CAS Number: 26787-78-0
$\lambda_{\text{max}}$: 230 nm, 274 nm (ethanol)$^{1}$
Extinction coefficient: $E^{\text{M}}_{230} = 10.85$ (230 nm), 1.4 (274 nm) (ethanol)$^{1}$
Synonyms: amoxycillin, [2S-[2$\alpha$,5$\alpha$,6(S*)]]-6-[[amino(4-hydroxyphenyl)acetyl]amino]-3,3-dimethyl-7-oxo-1-azabicyclo[3.2.0]heptane-2-carboxylic acid; (—)-6-[2-amino-2-(p-hydroxyphenyl)acetamido]-3,3-dimethyl-7-oxo-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, Heliobacter pylori, and Salmonella species. Because $\beta$-lactamases inactive amoxicillin, amoxicillin is sometimes used in conjunction with $\beta$-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 µg/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
1. The Merck Index, 12th ed., Entry# 617.


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