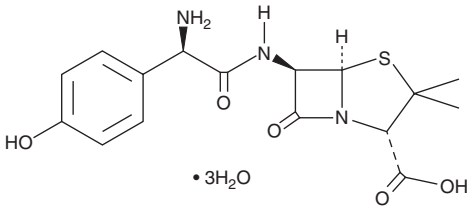
PRODUCT INFORMATION

Amoxicillin (hydrate)

Item No. 19188

CAS Registry No.: 61336-70-7
Formal Name: (2S,5R,6R)-6-[[(2R)-2-amino-2-(4-hydroxyphenyl)acetyl]amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, trihydrate
MF: $C_{16}H_{19}N_3O_5S \bullet 3H_2O$
FW: 419.4
Purity: ≥98%
UV/Vis.: λ_{max}: 232, 275 nm
Supplied as: A crystalline solid
Storage: Room Temperature
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Amoxicillin (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the amoxicillin (hydrate) in the solvent of choice. Amoxicillin (hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of amoxicillin (hydrate) in these solvents is approximately 25 and 5 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of amoxicillin (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of amoxicillin (hydrate) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Amoxicillin is an orally bioavailable, semisynthetic β-lactam antibiotic.[1] It inhibits the growth of 30 isolates of *P. mirabilis* and 89% of 30 *E. coli* strains when used at concentrations greater than or equal to 5 and 10 µg/ml, respectively, but resistance develops in strains of *Klebsiella*, *Enterobacter*, and indole-positive *Proteus* species.[2] Amoxicillin is susceptible to bacterial β-lactamases but is active against β-lactamase-producing bacteria when used in combination with β-lactamase antibiotics such as clavulanic acid with MIC values of greater than 4,096 and 16 µg/ml without or with clavulanic acid, respectively, against 46 clinical isolates of β-lactamase-producing *E. coli*.[1] Formulations containing amoxicillin have been used in the treatment of a variety of bacterial infections.

References

1. Stapleton, P., Wu, P.J., King, A., *et al.* Incidence and mechanisms of resistance to the combination of amoxicillin and clavulanic acid in *Escherichia coli*. *Antimicrob. Agents Chemother.* **39(11)**, 2478-2483 (1995).
2. Handsfield, H.H., Clark, H., Wallace, J.F., *et al.* Amoxicillin, a new penicillin antibiotic. *Antimicrob. Agents Chemother.* **3(2)**, 262-265 (1973).

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