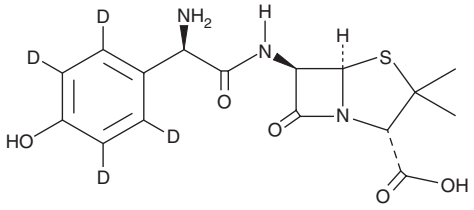
PRODUCT INFORMATION

Amoxicillin-d_4

Item No. 25428

CAS Registry No.: 2673270-36-3
Formal Name: (2S,5R,6R)-6-((R)-2-amino-2-(4-hydroxyphenyl-2,3,5,6-d_4)acetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid
MF: $C_{16}H_{15}D_4N_3O_5S$
FW: 369.4
Chemical Purity: ≥95% (Amoxicillin)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Amoxicillin-d_4 is intended for use as an internal standard for the quantification of amoxicillin (Item No. 19188) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Amoxicillin-d_4 is supplied as a solid. A stock solution may be made by dissolving the amoxicillin-d_4 in the solvent of choice, which should be purged with an inert gas. Amoxicillin-d_4 is soluble in 0.1 M acetic acid (warmed).

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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