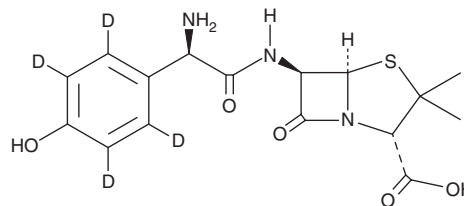


# PRODUCT INFORMATION



## Amoxicillin-d<sub>4</sub> 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<sub>4</sub>)acetamido-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid  
**MF:** C<sub>16</sub>H<sub>15</sub>D<sub>4</sub>N<sub>3</sub>O<sub>5</sub>S  
**FW:** 369.4  
**Chemical Purity:** ≥95% (Amoxicillin)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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<sub>4</sub> 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<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the amoxicillin-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Amoxicillin-d<sub>4</sub> is soluble in 0.1 M acetic acid (warmed).

### Description

Amoxicillin is an orally bioavailable, semisynthetic  $\beta$ -lactam antibiotic.<sup>1</sup> 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  $\mu\text{g/ml}$ , respectively, but resistance develops in strains of *Klebsiella*, *Enterobacter*, and indole-positive *Proteus* species.<sup>2</sup> Amoxicillin is susceptible to bacterial  $\beta$ -lactamases but is active against  $\beta$ -lactamase-producing bacteria when used in combination with  $\beta$ -lactamase antibiotics such as clavulanic acid with MIC values of greater than 4,096 and 16  $\mu\text{g/ml}$  without or with clavulanic acid, respectively, against 46 clinical isolates of  $\beta$ -lactamase-producing *E. coli*.<sup>1</sup> 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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