

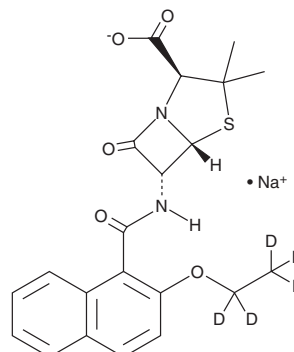
# PRODUCT INFORMATION



## Nafcillin-d<sub>5</sub> (sodium salt)

Item No. 33468

**CAS Registry No.:** 1356354-25-0  
**Formal Name:** (2S,5R,6R)-6-(2-(ethoxy-d<sub>5</sub>)-1-naphthamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate, monosodium salt  
**MF:** C<sub>21</sub>H<sub>16</sub>D<sub>5</sub>N<sub>2</sub>O<sub>5</sub>S • Na  
**FW:** 441.5  
**Chemical Purity:** ≥95% (Nafcillin)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</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

Nafcillin-d<sub>5</sub> (sodium salt) is intended for use as an internal standard for the quantification of nafcillin (Item No. 21008) 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).

Nafcillin-d<sub>5</sub> (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the nafcillin-d<sub>5</sub> (sodium salt) in the solvent of choice, which should be purged with an inert gas. Nafcillin-d<sub>5</sub> (sodium salt) is slightly soluble in methanol and DMSO.

### Description

Nafcillin is a semisynthetic and penicillinase-resistant penicillin antibiotic.<sup>1</sup> It is active against 20 clinical isolates of *S. aureus* with minimum bactericidal concentration (MBC) values ranging from 0.078 to 0.312 µg/ml. Nafcillin (100-800 mg/kg) reduces the number of kidney colony forming units (CFUs) in a mouse model of *S. aureus* infection.<sup>2</sup> It also reduces the number of right atrial CFUs in a rabbit model of *S. aureus*-induced endocarditis.<sup>3</sup> Formulations containing nafcillin have been used in the treatment of various bacterial infections.

### References

1. Tuazon, C.U., Lin, M.Y., and Sheagren, J.N. In vitro activity of rifampin alone and in combination with nafcillin and vancomycin against pathogenic strains of *Staphylococcus aureus*. *Antimicrob. Agents Chemother.* **13**(5), 759-761 (1978).
2. Yuchenco, J.A., Hopper, M.W., Vince, T.D., et al. Nafcillin and oxacillin: Comparative antistaphylococcal activity in mice. *J. Antibiot. (Tokyo)* **29**(4), 460-465 (1976).
3. Carrizosa, J., Kobasa, W.D., and Kaye, D. Effectiveness of nafcillin, methicillin, and cephalothin in experimental *Staphylococcus aureus* endocarditis. *Antimicrob. Agents Chemother.* **15**(5), 735-737 (1979).

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/18/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
[WWW.CAYMANCHEM.COM](http://WWW.CAYMANCHEM.COM)