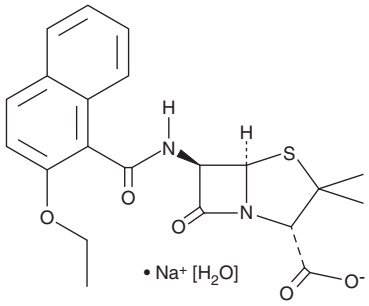
PRODUCT INFORMATION

Nafcillin (sodium salt hydrate)

Item No. 21008

CAS Registry No.: 7177-50-6
Formal Name: 6-[[(2-ethoxy-1-naphthalenyl)carbonyl] amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, monosodium salt, monohydrate
MF: $C_{21}H_{21}N_2O_5S \bullet Na\ [H_2O]$
FW: 454.5
Purity: ≥95%
UV/Vis.: λ_{max}: 226, 228, 279, 333 nm
Supplied as: A crystalline 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 (sodium salt hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the nafcillin (sodium salt hydrate) in the solvent of choice, which should be purged with an inert gas. Nafcillin (sodium salt hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of nafcillin (sodium salt hydrate) in these solvents is approximately 1, 10, and 15 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 nafcillin (sodium salt hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of nafcillin (sodium salt 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

Nafcillin is a semisynthetic and penicillinase-resistant penicillin antibiotic.[1] 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.[2] It also reduces the number of right atrial CFUs in a rabbit model of *S. aureus*-induced endocarditis.[3] 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
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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