

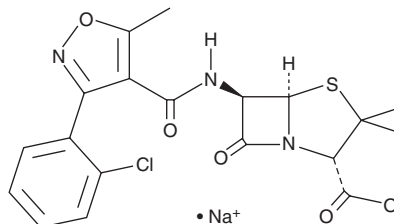
PRODUCT INFORMATION



Cloxacillin (sodium salt)

Item No. 22249

CAS Registry No.: 642-78-4
Formal Name: (2S,5R,6R)-6-[[[3-(2-chlorophenyl)-5-methyl-4-isoxazolyl]carbonyl]amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, monosodium salt
MF: C₁₉H₁₇ClN₃O₅S • Na
FW: 457.9
Purity: ≥95%
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

Cloxacillin (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the cloxacillin (sodium salt) in the solvent of choice, which should be purged with an inert gas. Cloxacillin (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of cloxacillin (sodium salt) in these solvents is approximately 2, 16, and 20 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 cloxacillin (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of cloxacillin (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Cloxacillin is a β -lactam antibiotic and a derivative of oxacillin (Item No. 23954).¹ It is active against clinical isolates of the Gram-positive bacteria *S. aureus* and *S. epidermidis* (MICs = 0.004-0.4 and 0.1-0.8 μ g/ml, respectively) but not 34 Gram-negative bacteria (MICs = >128 μ g/ml for all).^{1,2} Cloxacillin binds to *S. aureus* penicillin-binding protein 1 (PBP1), PBP2, PBP3, and PBP4 (IC₅₀s = 0.04, 0.12, 0.21, and 2.5 μ g/ml, respectively).³ It also binds to recombinant type Ib penicillinase, as well as *P. vulgaris* and *C. freundii* cephalosporinase (K_is = 15, 0.27, and 0.027 μ M, respectively).⁴ Cloxacillin decreases the number of staphylococci in the mammary gland in a mouse model of acute, but not chronic, mastitis induced by *Staphylococcus* infection.⁵

References

1. Gibbs, D.L. and Thornsberry, C. *Curr. Microbiol.* **2(4)**, 239-244 (1979).
2. Sabath, L.D., Garner, C., Wilcox, C., et al. *Antimicrob. Agents Chemother.* **9(6)**, 962-969 (1976).
3. Okonogi, K., Noji, Y., Nakao, M., et al. *J. Infect. Chemother.* **1(1)**, 50-58 (1995).
4. Yamaguchi, A., Adachi, A., Hirata, T., et al. *J. Antibiot. (Tokyo)* **38(1)**, 83-93 (1985).
5. Craven, N. and Anderson, J.C. *Res. Vet. Sci.* **31(3)**, 295-300 (1981).

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.

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