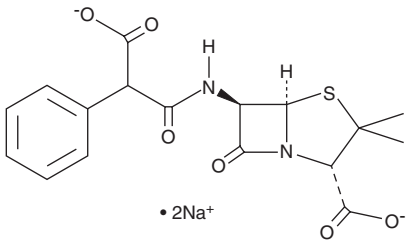
PRODUCT INFORMATION

Carbenicillin (sodium salt)

Item No. 20871

CAS Registry No.: 4800-94-6
Formal Name: (2S,5R,6R)-6-[(2-carboxy-2-phenylacetyl) amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, disodium salt
Synonyms: BRL 2064, α-Carboxybenzylpenicillin, CP 15,639-2, NSC 111071
MF: $C_{17}H_{16}N_2O_6S \bullet 2Na$
FW: 422.4
Purity: ≥80%
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

Carbenicillin (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the carbenicillin (sodium salt) in the solvent of choice, which should be purged with an inert gas. Carbenicillin (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of carbenicillin (sodium salt) in these solvents is approximately 2.5, 15, and 10 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 carbenicillin (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of carbenicillin (sodium salt) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Carbenicillin is a broad-spectrum carboxypenicillin antibiotic.[1] It is active against Gram-negative and certain Gram-positive bacteria, including *S. pyogenes*, *S. epidermidis*, *P. mirabilis*, *P. vulgaris*, *E. coli*, and *P. aeruginosa* (MICs = 0.19, 1.56, 1.56, 3.12, 3.12, and 50 µg/ml, respectively). It is also active against penicillinase-producing and non-producing strains of *S. aureus* (MICs = 1.56 and 12.5 µg/ml, respectively). Carbenicillin is protective against systemic *S. pyogenes*, *P. vulgaris*, *E. coli*, and *S. aureus* infection in a mouse model of systemic lethal infection with 50% protective dose (PD_{50}) values of 7.8, 224, 19.3, and 34 mg/kg, respectively. It also decreases viable colony counts in the kidney in a rat model of *P. vulgaris* or *E. coli* urinary tract infection when administered at a dose of 100 mg/kg. Formulations containing carbenicillin have previously been used in the treatment of upper and lower urinary tract infections and prostatitis.

Reference

1. English, A.R., Retsema, J.A., Ray, V.A., *et al.* Carbenicillin indanyl sodium, an orally active derivative of carbenicillin. *Antimicrob. Agents Chemother.* **1(3)**, 185-191 (1972).

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