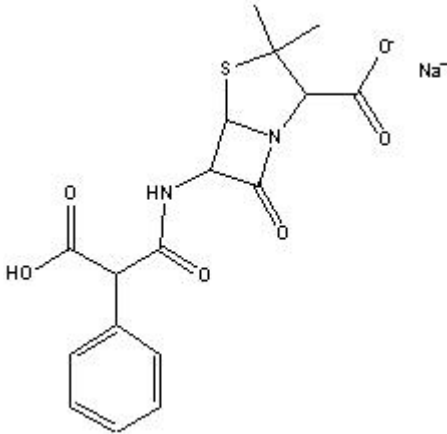


TECHNICAL INFORMATION

Catalog Number: 195092
Carbencillin, Disodium Salt

Structure:



Molecular Formula: C₁₇H₁₆N₂O₆SNa₂

Molecular Weight: 422.4

CAS # 4800-94-6

Synonym: a-Carboxybenzylpenicillin; BRL-2064; CP-15639-2; Anabactyl; Carbapen; Carbecin; Geopen; Hyoper; Microcillin; Pyocianil; Pyopen; [2S-(2.a,5.a,6.b)]-6-[(Carboxyphenylacetyl) amino]- 3,3-dimethyl- 7-oxo-4-thia-1-azabicyclo [3.2.0] heptane-2-carboxylic acid, disodium salt; N-(2-carboxy- 3,3-dimethyl- 7-oxo-4-thia-1- azabicyclo [3.2.0] hept-6-yl)-2-phenylmalonamic acid, disodium salt; 6-(a-carboxyphenylacetamido) penicillanic acid, disodium salt; a-phenyl (carboxymethylpenicillin), disodium salt

Physical Description: Fine white powder

Recommended Storage: +4°C

pKa (in water): 3.3

Description: Semi-synthetic antibiotic related to penicillin. It is a benzyl penicillin derivative with substitution of a-carboxyl group on the benzyl side chain. The product interferes with final cell wall synthesis of susceptible bacteria. It is completely ionized in the blood. Carbencillin disodium is about 50% reversibly protein bound in plasma and its tissue distribution is similar to other penicillins.

Though Carbencillin disodium has substantial *in vitro* activity against a variety of both gram-positive and gram-negative microorganisms, the most important aspect of its profile is in its antipseudomonal and antiproteal effect.

In vitro studies have demonstrated the susceptibility of most strains of the following organisms:

Staphylococcus aureus (non-penicillinase producing)

Enterobacter species

Proteus mirabilis

Staphylococcus epidermidis

Morganella morganii (formerly *Proteus morganii*)

Streptococcus pneumoniae

Providencia rettgeri (formerly *Proteus rettgeri*)

Beta-hemolytic *Streptococci*

Anaerobic bacteria, including:

Streptococcus faecalis

Bacteriodes species

Proteus vulgaris

Peptostreptococcus species

Escherichia coli

Peptococcus species

Salmonella species

Clostridium species

Pseudomonas aeruginosa

Fusobacterium species

Hemophilus influenzae

Neisseria species

In vitro synergism between Carbencillin disodium and aminoglycosides in certain strains of *Pseudomonas aeruginosa* has been

demonstrated.

Some of the pathogenic strains of such microorganisms as *Herellea*, *Mima*, *Citrobacter*, and *Serratia* have shown susceptibility to Carbencillin disodium.

Resistance: Most *Klebsiella* species and some *Serratia* species are usually resistant to the action of Carbencillin disodium. Some strains of *Pseudomonas* have developed resistance to Carbencillin disodium fairly rapidly.

Carbencillin disodium is not stable in the presence of penicillinase producing bacteria.

General Usage: 105 units/liter (5 - 50 ug/ml) in cell culture; approximately 200 mg/kg *in vivo*. It is typically stable in media at 37°C for approximately 3 days.⁵

Solubility: Soluble in water (50 mg/ ml) and alcohol

References:

– *Merck Index*, **12th Ed.**, No. 1838.

– Naumann, Kempf, *Arzneimittel-Forsch.*, **v. 19**, 1222 (1969)

– Butler et al., *J. Infec. Dis.*, **v. 122**, Suppl., 81 (1970)

– Goldenthal, *Toxicol. Appl. Pharmacol.*, **v. 18**, 185

– Perlman, D., "Use of Antibiotics in cell culture media." *Methods in Enzymology: Cell Culture*, Jakoby, W.B. and Pastan, I.H. (eds.), Academic Press: New York, p. 112 (1979).