3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Cefotaxime sodium salt

Product Number **C 7912**
Storage Temperature 2-8 °C

Product Description
Molecular Formula: $C_{16}H_{16}N_5O_7S_2Na$
Molecular Weight: 477.5
CAS Number: 64485-93-4
Synonyms: [6R-[6α,7β(*Z*)]]-3-[(acetyloxy)methyl]-7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid sodium salt; 7-[2-(2-amino-4-thiazolyl)-2-methoxyiminoacetamido]cephalosporanic acid sodium salt[1]

Cefotaxime is a broad-spectrum third-generation cephalosporin antibiotic with a wide spectrum of activity. It has particular potency against Gram-negative bacteria such as Enterobacteriaceae, *Haemophilus influenzae*, *Moraxella (Branhamella) catarrhalis*, and *Neisseria* species. It is also active against some Gram-positive bacteria such as staphylococci and streptococci. The active metabolite of cefotaxime, desacetylcefotaxime, also has antibacterial activity. A minimum inhibitory concentration range for cefotaxime against susceptible organisms has been described at 0.03 - 16 µg/ml.[1,2]

Cefotaxime and other antibiotics have been used to probe the susceptibilty of potentially pathogenic halophilic vibrios isolated from seafood.[3] An *in vitro* study on the treatment of *Salmonella typhi*-infected human monocyte-derived macrophages with cefotaxime and ceftriaxone has been published.[4] Cefotaxime has been utilized to study the behavior of the pathogen *Clostridium difficile* and components of normal gut flora in a triple-stage chemostat model of the human gut.[5]

Several HPLC methods have been published for the detection of cefotaxime and of desacetylcefotaxime in plasma and cerebrospinal fluid.[6,7]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble in water (50 mg/ml), yielding a clear, faint yellow to yellow solution. A 10% aqueous solution has a pH of 4.5 - 6.5.[2]

References
1. The Merck Index, 12th ed., Entry# 1983.
2. Martindale The Extra Pharmacopoeia, 31st ed., Reynolds, J. E. F., ed., Royal Pharmaceutical Society (London, UK: 1996), pp. 189-190.
3. Ottaviani, D., et al., Antimicrobial susceptibility of potentially pathogenic halophilic vibrios isolated from seafood. Int. J. Antimicrob. Agents, **18(2)**, 135-140 (2001).
4. Ekinci, B., et al., *In vitro* effects of cefotaxime and ceftriaxone on *Salmonella typhi* within human monocyte-derived macrophages. Clin. Microbiol. Infect., **8(12)**, 810-813 (2002).
5. Freeman, J., et al., Effects of cefotaxime and desacetylcefotaxime upon *Clostridium difficile* proliferation and toxin production in a triple-stage chemostat model of the human gut. J. Antimicrob. Chemother., **52(1)**, 96-102 (2003).
6. Ling, S. S., et al., Simple liquid chromatographic method for the determination of cefotaxime in human and rat plasma. J. Chromatogr. B Analyt. Technol. Biomed. Life Sci., **783(1)**, 297-301 (2003).
7. Scanes, T., et al., Simultaneous determination of cefotaxime and desacetylcefotaxime in human plasma and cerebrospinal fluid by high-performance liquid chromatography. J. Chromatogr. B Biomed. Sci. Appl., **750(1)**, 171-176 (2001).

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