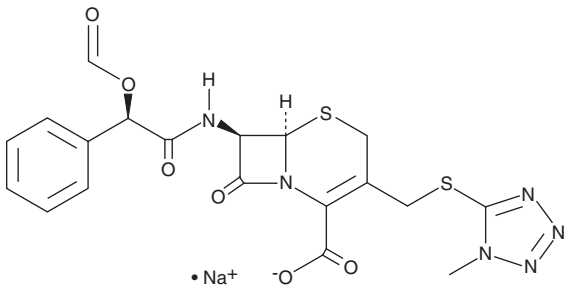
PRODUCT INFORMATION

Cefamandole Nafate

Item No. 23988

CAS Registry No.: 42540-40-9
Formal Name: (6R,7R)-7-[[(2R)-2-(formyloxy)-2-phenylacetyl]amino]-3-[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, monosodium salt
Synonym: NSC 299588
MF: $C_{19}H_{17}N_6O_6S_2$ • Na
FW: 512.5
Purity: ≥95%
UV/Vis.: λ_{max}: 272 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

Cefamandole nafate is supplied as a crystalline solid. A stock solution may be made by dissolving the cefamandole nafate in the solvent of choice, which should be purged with an inert gas. Cefamandole nafate is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of cefamandole nafate in these solvents is approximately 30 mg/ml.

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 cefamandole nafate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of cefamandole nafate in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Cefamandole nafate is a formate ester prodrug form of the cephalosporin antibiotic cefamandole (Item No. 18138).[1] Cefamandole nafate inhibits the growth of *E. cloacae*, *E. coli*, *K. pneumoniae*, *P. mirabilis*, *P. vulgaris*, *P. morganii*, *S. aureus*, and *S. pyogenes in vitro* (MICs = 0.1-50 µg/ml). *In vivo*, cefamanadole nafate protects against *E. cloacae*, *E. coli*, *K. pneumoniae*, *P. mirabilis*, *P. vulgaris*, *P. morganii*, *S. aureus*, and *S. pyogenes* infection in mice (ED_{50}s = 0.3-334 mg/kg). Cefamandole (500 mg/kg) also protects against nephrotoxicity induced by the aminoglycoside antibiotic tobramycin (Item No. 14596) in rats.[2]

References

1. Miller, A.K., Celozzi, E., Pelak, B.A., *et al.* Correlation of *in vitro* susceptibility with *in vivo* efficacy in mice for cefoxitin in comparison with cephalosporins. *J. Antimicrob. Chemother.* **5(5)**, 569-579 (1979).
2. Wold, J.S., Turnipseed, S.A., Broddle, W.D., *et al.* Effect of cefamandole nafate on the toxicity of tobramycin. *Antimicrob. Agents Chemother.* **12(4)**, 465-469 (1977).

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