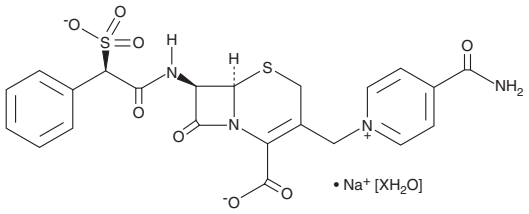
PRODUCT INFORMATION

Cefsulodin (sodium salt hydrate)

Item No. 16127

CAS Registry No.: 1426397-23-0
Formal Name: 4-(aminocarbonyl)-1-[[(6R,7R)-2-carboxy-8-oxo-7-[[(2R)-2-phenyl-2-sulfoacetyl]amino]-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-pyridinium inner salt, monosodium salt, hydrate
MF: $C_{22}H_{19}N_4O_8S_2 \bullet Na\ [XH_2O]$
FW: 554.5
Purity: ≥95%
UV/Vis.: λ_{max}: 265 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

Cefsulodin (sodium salt hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the cefsulodin (sodium salt hydrate) in the solvent of choice, which should be purged with an inert gas. Cefsulodin (sodium salt hydrate) is soluble in DMSO. The solubility of cefsulodin (sodium salt hydrate) in this solvent is approximately 0.1 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 cefsulodin (sodium salt hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of cefsulodin (sodium salt hydrate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Cefsulodin is a cephalosporin antibiotic.[1] It is active against 45 isolates of *P. aeruginosa* (MIC_{90} = 3.1 µg/ml) and acts synergistically against *P. aeruginosa* isolates when combined with gentamicin, tobramycin (Item No. 14596), amikacin (Item No. 15405), or mezlocillin (Item No. 30691). Cefsulodin is also active against isolates of *S. aureus*, *S. epidermidis*, *S. pneumoniae*, and *S. pyogenes* (MIC_{90}s = 8, 8, 12, and 12 µg/ml, respectively). It binds to *P. aeruginosa* penicillin-binding protein 1a (PBP1a), PBP1b, and PBP3 but not PBP2, PBP4, or PBP5.[2] It increases survival in mice infected with various *P. aeruginosa* strains (ED_{50}s = 1.93-137 mg/kg for all).[3] Formulations containing cefsulodin have been used in the treatment of *P. aeruginosa* infections.

References

1. Neu, H.C. and Scully, B.E. Activity of cefsulodin and other agents against *Pseudomonas aeruginosa*. *Rev. Infect. Dis.* **6 (Suppl. 3)**, S667-S677 (1984).
2. Noguchi, H., Matsuhashi, M., and Mitsuhashi, S. Comparative studies of penicillin-binding proteins in *Pseudomonas aeruginosa* and *Escherichia coli*. *Eur. J. Biochem.* **100(1)**, 41-49 (1979).
3. Kondo, M. and Tsuchiya, K. Comparative in vivo activities of cefsulodin, sulbenicillin, and gentamicin against *Pseudomonas aeruginosa*. *Antimicrob. Agents Chemother.* **14(1)**, 151-153 (1978).

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