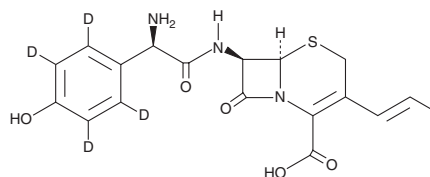


PRODUCT INFORMATION



Cefprozil-d₄ Item No. 33639

CAS Registry No.: 1426173-48-9
Formal Name: (6R,7R)-7-[[[(2R)-2-amino-2-(4-hydroxyphenyl)-2,3,5,6-d₄]acetyl]amino]-8-oxo-3-(1-propen-1-yl)-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid
MF: C₁₈H₁₅D₄N₃O₅S
FW: 393.5
Chemical Purity: ≥98% (mixture of isomers) (Cefprozil)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A 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

Cefprozil-d₄ is intended for use as an internal standard for the quantification of cefprozil (Item No. 23840) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Cefprozil-d₄ is supplied as a solid. A stock solution may be made by dissolving the cefprozil-d₄ in the solvent of choice, which should be purged with an inert gas. Cefprozil-d₄ is soluble in methanol and DMSO.

Description

Cefprozil is an orally bioavailable, second generation, broad-spectrum cephalosporin antibiotic that inhibits the growth of both Gram-positive and Gram-negative bacteria.^{1,2} It inhibits the growth of *E. coli*, *E. faecalis*, *E. faecium*, *N. gonorrhoeae*, *N. meningitidis*, *P. mirabilis*, *S. aureus*, *S. pyogenes*, and *S. pneumoniae* strains (MICs = 0.013-25 µg/ml) and clinical isolates of penicillin-susceptible, -intermediate, and -resistant *S. pneumoniae* and methicillin-sensitive *S. aureus* (MIC_{90S} = 0.12-16 µg/ml). *In vivo*, cefprozil protects mice challenged with *E. coli*, *S. aureus*, *S. pyogenes*, and *P. mirabilis* strains with protective doses (PD_{50S}) ranging from 0.07 to 1.3 mg/kg.¹ Cefprozil binds to penicillin-binding proteins (PBPs), which disrupts their ability to cross-link peptidoglycan and leads to weakened bacterial cell walls.³ Formulations containing cefprozil have been used in the treatment of respiratory tract, skin, and other bacterial infections.

References

1. Tomatsu, K., Ando, S., Masuyoshi, S., *et al.* *In vitro* and *in vivo* evaluations of BMY-28100, a new oral cephalosporin. *J. Antibiot. (Tokyo)* **40(8)**, 1175-1183 (1987).
2. Peric, M., Browne, F.A., Jacobs, M.R., *et al.* Activity of nine oral agents against gram-positive and gram-negative bacteria encountered in community-acquired infections: Use of pharmacokinetic/pharmacodynamic breakpoints in the comparative assessment of beta-lactam and macrolide antimicrobial agents. *Clin. Ther.* **25(1)**, 169-177 (2003).
3. Nagai, K., Davies, T.A., Jacobs, M.R., *et al.* Effects of amino acid alterations in penicillin-binding proteins (PBPs) 1a, 2b, and 2x on PBP affinities of penicillin, ampicillin, amoxicillin, cefditoren, cefuroxime, cefprozil, and cefaclor in 18 clinical isolates of penicillin-susceptible, -intermediate, and -resistant pneumococci. *Antimicrob. Agents Chemother.* **46(5)**, 1273-1280 (2002).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

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