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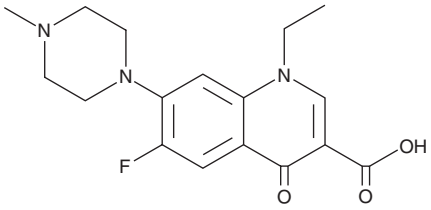
PRODUCT INFORMATION

Pefloxacin (mesylate hydrate)

Item No. 29103

CAS Registry No.: 149676-40-4
Formal Name: 1-ethyl-6-fluoro-1,4-dihydro-7-(4-methyl-1-piperazinyl)-4-oxo-3-quinolinecarboxylic acid, monomethanesulfonate, dihydrate
MF: $C_{17}H_{20}FN_3O_3 \bullet CH_3SO_3H\ [2H_2O]$
FW: 465.5
Purity: ≥98%
UV/Vis.: λ_{max}: 280, 318, 332 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



$\bullet\ CH_3SO_3H\ [2H_2O]$

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Pefloxacin (mesylate hydrate) is supplied as a solid. A stock solution may be made by dissolving the pefloxacin (mesylate hydrate) in the solvent of choice, which should be purged with an inert gas. Pefloxacin (mesylate hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of pefloxacin (mesylate hydrate) in these solvents is approximately 5 and 3 mg/ml, respectively.

Pefloxacin (mesylate hydrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, pefloxacin (mesylate hydrate) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Pefloxacin (mesylate hydrate) has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Pefloxacin is a broad-spectrum and synthetic fluoroquinolone antibiotic and a methylated derivative of norfloxacin (Item No. 25975).[1,2] It is active against Gram-negative and Gram-positive bacteria, including clinical isolates of *E. coli*, *K. pneumoniae*, *S. aureus*, and *G. vaginalis* (MIC_{90}s = 0.12, 0.5, 0.5, and 32 mg/L, respectively).[1,2] Pefloxacin selectively inhibits *E. coli* topoisomerase I and DNA gyrase over calf thymus topoisomerase I (IC_{50}s = 45, 4.5, and >140 µg/ml, respectively) in cell-free assays.[3] *In vivo*, pefloxacin is active against systemic *E. coli*, *K. pneumoniae*, and *P. aeruginosa* infections in mice with 50% of efficacy maximum (P_{50}) values of 6.5, 29.2, and 219 mg/kg, respectively.[4]

References

1. Clarke, A.M., Zemcov, S.J., and Campbell, M.E. *In-vitro* activity of pefloxacin compared to enoxacin, norfloxacin, gentamicin and new β-lactams. *J. Antimicrob. Chemother.* **15(1)**, 39-44 (1985).
2. Jones, B.M., Geary, I., Lee, M.E., *et al*. Activity of pefloxacin and thirteen other antimicrobial agents *in vitro* against isolates from hospital and genitourinary infections. *J. Antimicrob. Chemother.* **17(6)**, 736-746 (1986).
3. Tabary, X., Moreau, N., Dureuil, C., *et al*. Effect of DNA gyrase inhibitors pefloxacin, five other quinolones, novobiocin, and clorobiocin on *Escherichia coli* topoisomerase I. *Antimicrob. Agents Chemother.* **31(12),** 1925-1928 (1987).
4. Fantin, B., Leggett, J., Ebert, S., *et al*. Correlation between in vitro and in vivo activity of antimicrobial agents against gram-negative bacilli in a murine infection model. *Antimicrob. Agents Chemother*. **35(7),** 1413-1422 (1991).

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