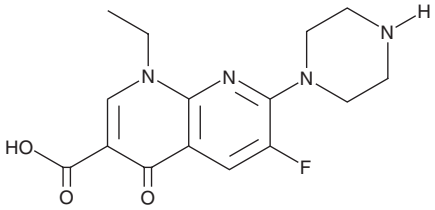
PRODUCT INFORMATION

Enoxacin

Item No. 16956

CAS Registry No.:	74011-58-8
Formal Name:	1-ethyl-6-fluoro-1,4-dihydro-4-oxo-7-(1-piperazinyl)-1,8-naphthyridine-3-carboxylic acid
Synonym:	NSC 629661
MF:	$C_{15}H_{17}FN_4O_3$
FW:	320.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 220, 270, 340 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

Enoxacin is supplied as a crystalline solid. A stock solution may be made by dissolving the enoxacin in the solvent of choice, which should be purged with an inert gas. Enoxacin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of enoxacin in these solvents is approximately 0.1 and 15 mg/ml, respectively.

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

Description

Enoxacin is a fluoroquinolone antibiotic.[1-4] It is active against clinical isolates of a variety of Gram-positive and Gram-negative bacteria, including *S. aureus*, *E. coli*, *K. pneumoniae*, *P. aeruginosa*, and *S. marcescens* (MIC_{50}s = 1, 0.12, 0.25, 0.5, and 1 mg/L, respectively).[1] Enoxacin inhibits *S. aureus* DNA gyrase supercoiling activity and topoisomerase IV DNA decatenation (IC_{50}s = 126 and 26.5 µg/ml, respectively).[2] It increases survival in mouse models of systemic *S. aureus*, *E. coli*, *K. pneumoniae*, *P. aeruginosa*, and *S. marcescens* infection with ED_{50} values of 15.1, 2.2, 4.1, 120.3, and 7.6 mg/kg, respectively.[3] Enoxacin (4 and 8 mg/kg per day) also reduces tumor growth in a 143B human osteosarcoma mouse xenograft model.[4] Formulations containing enoxacin have previously been used in the treatment of urinary tract infections and gonorrhea.

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. Takei, M., Fukuda, H., Kishii, R., *et al.* Target preference of 15 quinolones against *Staphylococcus aureus*, based on antibacterial activities and target inhibition. *Antimicrob. Agents Chemother.* **45(12)**, 3544-3547 (2001).
3. Ozaki, M., Matsuda, M., Tomii, Y., *et al.* In vivo evaluation of NM441, a new thiazeto-quinoline derivative. *Antimicrob. Agents Chemother.* **35(12)**, 2496-2499 (1991).
4. Luo, X., Liu, X., Tao, Q., *et al.* Enoxacin inhibits proliferation and invasion of human osteosarcoma cells and reduces bone tumour volume in a murine xenograft model. *Oncol. Lett.* **20(2)**, 1400-1408 (2020).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM