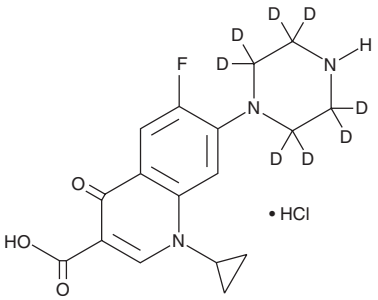
PRODUCT INFORMATION

Ciprofloxacin-d_8 (hydrochloride)

Item No. 25466

CAS Registry No.: 1216659-54-9
Formal Name: 1-cyclopropyl-6-fluoro-4-oxo-7-(piperazin-1-yl-2,2,3,3,5,5,6,6-d_8)-1,4-dihydroquinoline-3-carboxylic acid, monohydrochloride
MF: $C_{17}H_{10}D_8FN_3O_3$ • HCl
FW: 375.9
Chemical Purity: ≥95% (Ciprofloxacin)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_8); ≤1% d_0
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

Ciprofloxacin-d_8 (hydrochloride) is intended for use as an internal standard for the quantification of ciprofloxacin (Item No. 14286) 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).

Ciprofloxacin-d_8 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the ciprofloxacin-d_8 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Ciprofloxacin-d_8 (hydrochloride) is slightly soluble in methanol.

Ciprofloxacin-d_8 (hydrochloride) is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Ciprofloxacin is a fluoroquinolone antibiotic.[1] It is active against a variety of Gram-positive and Gram-negative bacteria *in vitro*, including *S. aureus*, *L. monocytogenes*, *P. aeruginosa*, *Legionella*, *N. gonorrhoeae*, and *H. pylori* (MIC_{50}s = 0.004-1 µg/ml).[2] It is also active against clinical isolates of *Bacteroides*, *Fusobacterium*, *Eubacterium*, *Actinomyces*, *Peptococcus*, *Peptostreptococcus*, and *Streptococcus in vitro* (MIC_{50}s = 0.5-2 µg/ml).[3] Ciprofloxacin inhibits *S. aureus* DNA gyrase and topoisomerase IV (IC_{50}s = 13.5 and 5.76 µg/ml, respectively).[4] It reduces mortality in mouse models of intraperitoneal *E. coli*, *P. vulgaris*, *K. pneumoniae*, *P. aeruginosa*, and *S. aureus* infection (ED_{90-100}s = 1-5, 2.5-5, 5-10, 20-40, and 80 mg/kg, respectively) and prevents mortality in a mouse model of subcutaneous *S. typhimurium* infection at 10 mg/kg.[5,6] Formulations containing ciprofloxacin have been used in the treatment of bacterial infections.

References

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3. Bansal, M.B. and Thadepalli, H. *Antimicrob. Agents Chemother.* **31(4)**, 619-621 (1987).
4. Takei, M., Fukuda, H., Kishii, R., *et al. Antimicrob. Agents Chemother.* **45(12)**, 3544-3547 (2001).
5. Zeiler, H.J. and Grohe, K. *Eur. J. Clin. Microbiol.* **3(4)**, 339-343 (1984).
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