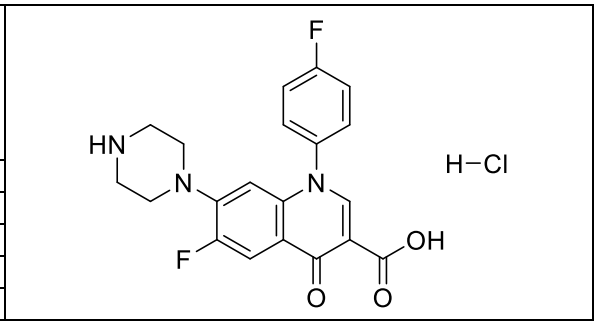
Product data sheet

MedKoo Cat#: 561622 Name: Sarafloxacin HCl CAS#: 91296-87-6 Chemical Formula: $C_{20}H_{18}ClF_2N_3O_3$ Molecular Weight: 421.83	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Sarafloxacin HCl is a broad-spectrum fluoroquinolone antibacterial agent. It inhibits bacterial Topo II α (DNA gyrase, topoisomerase) and is effective against Mycobacterium tuberculosis.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	4	9.48

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.37 mL	11.85 mL	23.71 mL
5 mM	0.47 mL	2.37 mL	4.74 mL
10 mM	0.24 mL	1.19 mL	2.37 mL
50 mM	0.05 mL	0.24 mL	0.47 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Fernandez-Teruel C, Gonzalez-Alvarez I, Casabó VG, Ruiz-Garcia A, Bermejo M. Kinetic modelling of the intestinal transport of sarafloxacin. Studies in situ in rat and in vitro in Caco-2 cells. J Drug Target. 2005 Apr;13(3):199-212. doi: 10.1080/10611860500087835. PMID: 16036308.
2. McConville ML, Dijkstra JW, Stamm JM, van Saene JJ, Nouws JF. Effects of sarafloxacin hydrochloride on human enteric bacteria under simulated human gut conditions. Vet Q. 1995 Mar;17(1):1-5. doi: 10.1080/01652176.1995.9694519. PMID: 7610549.

In vivo study

1. Yu Y, Zhou YF, Sun J, Shi W, Liao XP, Liu YH. Pharmacokinetic and pharmacodynamic modeling of sarafloxacin against avian pathogenic Escherichia coli in Muscovy ducks. BMC Vet Res. 2017 Feb 10;13(1):47. doi: 10.1186/s12917-017-0964-0. PMID: 28183350; PMCID: PMC5301423.
2. Johnson, M.R., K.L. Smith, and C.R. Boyle, Field efficacy trials of the antibacterial sarafloxacin-hydrochloride (A-56620) for treatment of Edwardsiella ictaluri infections in channel catfish. Journal of aquatic animal health, 1992. 4(4): p. 244-251.

7. Bioactivity
Biological target:
Sarafloxacin HCl is a hydrochloride salt form of sarafloxacin, a quinolone antibiotic drug with IC50 of 0.96 μg/L.

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In vitro activity

Sarafloxacin, serving as a model for fluoroquinolones, was examined for its absorption kinetics in Caco-2 cells. The study aimed to understand the mechanisms behind its intestinal transport. In Caco-2 cells, sarafloxacin demonstrated concentration-dependent permeability in both directions, suggesting the involvement of absorption and efflux carriers. These findings shed light on the complexities of sarafloxacin's absorption and transport mechanisms.

Reference: J Drug Target. 2005 Apr;13(3):199-212. https://pubmed.ncbi.nlm.nih.gov/16036308/

In vivo activity

In a study involving Muscovy ducks and avian pathogenic Escherichia coli O78, sarafloxacin was investigated to optimize therapeutic dosages. After intravenous and oral administration, the calculated area under the concentration-time curves were similar, and elimination half-lives varied. A higher dose of sarafloxacin may be needed for effective treatment of E. coli O78 infections, particularly to minimize antimicrobial resistance.

Reference: BMC Vet Res. 2017 Feb 10;13(1):47. https://pubmed.ncbi.nlm.nih.gov/28183350/