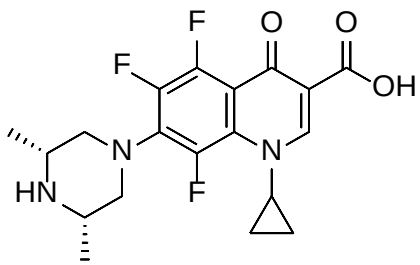
Product data sheet

MedKoo Cat#: 564421 Name: Orbifloxacin CAS: 113617-63-3 Chemical Formula: $C_{19}H_{20}F_3N_3O_3$ Exact Mass: 395.1457 Molecular Weight: 395.3822	
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:
Orbifloxacin is an antibiotic which is effective against most Gram-negative bacteria, including Enterobacteriaceae and Pseudomonas.

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
DMF	10.0	25.29
DMF:PBS (pH 7.2) (1:1)	0.5	1.26
DMSO	3.03	7.65

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.53 mL	12.65 mL	25.29 mL
5 mM	0.51 mL	2.53 mL	5.06 mL
10 mM	0.25 mL	1.26 mL	2.53 mL
50 mM	0.05 mL	0.25 mL	0.51 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. Zhou W, Yang B, Zou Y, Rahman K, Cao X, Lei Y, Lai R, Fu ZF, Chen X, Cao G. Screening of Compounds for Anti-tuberculosis Activity, and in vitro and in vivo Evaluation of Potential Candidates. Front Microbiol. 2021 Jun 30;12:658637. doi: 10.3389/fmicb.2021.658637. PMID: 34276592; PMCID: PMC8278749.

2. Ganière JP, Médaille C, Etoré F. In vitro antimicrobial activity of orbifloxacin against Staphylococcus intermedius isolates from canine skin and ear infections. Res Vet Sci. 2004 Aug;77(1):67-71. doi: 10.1016/j.rvsc.2004.02.002. PMID: 15120955.

In vivo study

1. Zhou W, Yang B, Zou Y, Rahman K, Cao X, Lei Y, Lai R, Fu ZF, Chen X, Cao G. Screening of Compounds for Anti-tuberculosis Activity, and in vitro and in vivo Evaluation of Potential Candidates. Front Microbiol. 2021 Jun 30;12:658637. doi: 10.3389/fmicb.2021.658637. PMID: 34276592; PMCID: PMC8278749.

2. Szczypka M, Gaweda B, Obmińska-Mrukowicz B. Modulation of cellular immune response by orbifloxacin in noninfected and E. coli-infected mice. Immunopharmacol Immunotoxicol. 2005;27(3):461-72. doi: 10.1080/08923970500241303. PMID: 16237956.

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7. Bioactivity

Biological target:

Orbifloxacin is a synthetic broad-spectrum fluoroquinolone antibiotic which is approved for use in dogs.

In vitro activity

Orbifloxacin was tested at different concentrations for killing rate against five isolates obtained from pyoderma cases and against a reference strain (Staphylococcus aureus ATCC 29213). Orbifloxacin expressed a concentration-dependent bactericidal activity against the S. aureus reference strain, but a time-dependent bactericidal activity against S. intermedius. Orbifloxacin induced bactericidal effect against the S. intermedius strains tested with concentrations equal to or two times MIC.

Reference: Res Vet Sci. 2004 Aug;77(1):67-71. https://pubmed.ncbi.nlm.nih.gov/15120955/

In vivo activity

Administration of orbifloxacin in E. coli-infected mice modulated the effects of infection on the percentage of phagocyting macrophages, the percentage of NBT-positive cells, and nitric oxide production. Orbifloxacin did not affect the synthesis and release of interleukin-1 by macrophages. Orbifloxacin exerted a modulating effect on the subsets of lymphocytes in thymus, spleen, and mesenteric lymph node cells in noninfected and E. coli-infected mice.

Reference: Immunopharmacol Immunotoxicol. 2005;27(3):461-72. https://pubmed.ncbi.nlm.nih.gov/16237956/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.