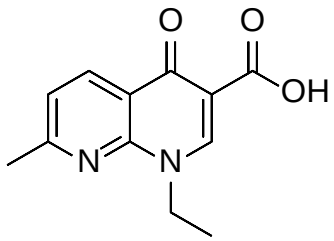
Product data sheet

MedKoo Cat#: 318300 Name: Nalidixic Acid CAS: 389-08-2 Chemical Formula: $C_{12}H_{12}N_2O_3$ Exact Mass: 232.0848 Molecular Weight: 232.2353	
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:
Nalidixic Acid is the first of the synthetic quinolone antibiotics. Nalidixic acid is effective primarily against gram-negative bacteria, with minor anti-gram-positive activity. In lower concentrations, it acts in a bacteriostatic manner; that is, it inhibits growth and reproduction. In higher concentrations, it is bactericidal, meaning that it kills bacteria instead of merely inhibiting their growth.

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	6.0	25.84
Water	5.0	21.53

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.31 mL	21.53 mL	43.06 mL
5 mM	0.86 mL	4.31 mL	8.61 mL
10 mM	0.43 mL	2.15 mL	4.31 mL
50 mM	0.09 mL	0.43 mL	0.86 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. Chadha J, Khullar L. Subinhibitory concentrations of nalidixic acid alter bacterial physiology and induce anthropogenic resistance in a commensal strain of Escherichia coli in vitro. Lett Appl Microbiol. 2021 Nov;73(5):623-633. doi: 10.1111/lam.13550. Epub 2021 Aug 24. PMID: 34376018.

2. Carnevali F, Sarcoe LE, Whittaker PA. Differential effects of nalidixate on the cell growth of respiratory competent strains and cytoplasmic petite mutants of Saccharomyces cerevisiae. Mol Gen Genet. 1976 Jul 5;146(1):95-100. doi: 10.1007/BF00267988. PMID: 785214.

In vivo study

1. Kaneko M, Horikoshi J. Reversible suppression by nalidixic acid of anchorage-independent growth of mouse cells transformed by 3-methylcholanthrene or an activated c-Ha-ras gene. Br J Cancer. 1989 Dec;60(6):880-6. doi: 10.1038/bjc.1989.384. PMID: 2690912; PMCID: PMC2247252.

2. McQueen CA, Rosado RR, Williams GM. Effect of nalidixic acid on DNA repair in rat hepatocytes. Cell Biol Toxicol. 1989 Jun;5(2):201-6. doi: 10.1007/BF00122653. PMID: 2504447.

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7. Bioactivity

Biological target:

Nalidixic acid, a quinolone antibiotic, is effective against both gram-positive and gram-negative bacteria.

In vitro activity

Sodium nalidixate inhibited the cell growth and division of several respiratory competent strains of Saccharomyces cerevisiae.

Reference: Mol Gen Genet. 1976 Jul 5;146(1):95-100. https://pubmed.ncbi.nlm.nih.gov/785214/

In vivo activity

Nalidixic acid preferentially suppressed growth in soft agar of transformed Balb/3T3 mouse cells induced by methylcholanthrene. Nalidixic acid suppressed growth in soft agar of NIH/3T3 mouse cells transformed by an activated c-Ha-ras, without affecting the amount of ras p21 proteins as detected by an immunoblotting analysis using a monoclonal antibody.

Reference: Br J Cancer. 1989 Dec;60(6):880-6. https://pubmed.ncbi.nlm.nih.gov/2690912/

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.