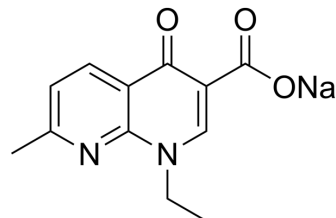


## Nalidixic acid sodium salt

<b>Cat. No.:</b>	HY-B0398A
<b>CAS No.:</b>	3374-05-8
<b>Molecular Formula:</b>	C <sub>12</sub> H <sub>11</sub> N <sub>2</sub> NaO <sub>3</sub>
<b>Molecular Weight:</b>	254.22
<b>Target:</b>	Bacterial; Antibiotic; Topoisomerase
<b>Pathway:</b>	Anti-infection; Cell Cycle/DNA Damage
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 125 mg/mL (491.70 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.9336 mL	19.6680 mL	39.3360 mL
	5 mM	0.7867 mL	3.9336 mL	7.8672 mL
	10 mM	0.3934 mL	1.9668 mL	3.9336 mL

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Nalidixic acid sodium salt, a quinolone antibiotic, is effective against both gram-positive and gram-negative bacteria. Nalidixic acid acts in a bacteriostatic manner in lower concentrations and is bactericidal in higher concentrations. Nalidixic acid inhibits a subunit of DNA gyrase and topoisomerase IV and reversibly blocks DNA replication in susceptible bacteria<sup>[1][2]</sup>.

#### IC<sub>50</sub> & Target

Quinolone      Topoisomerase

#### In Vitro

Nalidixic acid is against a variety of microorganisms, it is against with *Escherichia coli*, *Pasteurella* spp., *Klebsiella pneumoniae*, *Aerobacter aerogenes*, *Proteus* spp., *Salmonella* spp., *Shigella* spp. and *Brucella* spp. with MIC values of 5.0-12.5 µg/ml, 0.5-2.5 µg/ml, 0.8-25.0 µg/ml, 1.0-25.0 µg/ml, 1.25-30.0 µg/ml, 8-3.2 µg/ml, and 7.5-10.0 µg/ml, respectively<sup>[1]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

The in vivo activity of Nalidixic acid is most pronounced against Gram-negative bacteria, while Gram-positive organisms are generally more resistant. Maximal activity is observed against systemic infections caused by *E. coli*, *A. aerobacter*, *Proteus mirabilis*, *Shigella flexneri*, the ED<sub>50</sub> values are 25 mg/kg, 60 mg/kg, 50 mg/kg, and 62 mg/kg, respectively<sup>[1]</sup>. The acute toxicity (LD<sub>50</sub>) of Nalidixic acid in mice following oral and parenteral administration is: oral, 3300 mg/kg;

---

intravenous, 176 mg/kg; and subcutaneous, 500 mg/kg<sup>[1]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- J Biol Chem. 2021 Dec 29;101554.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. G Y LESHNER, et al. 1,8-NAPHTHYRIDINE DERIVATIVES. A NEW CLASS OF CHEMOTHERAPEUTIC AGENTS. J Med Pharm Chem. 1962 Sep;91:1063-5.

[2]. Anna Fàbrega, et al. Mechanism of Action of and Resistance to Quinolones. Microb Biotechnol

---

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA