Nalidixic acid sodium salt

Cat. No.: HY-B0398A

CAS No.: 3374-05-8

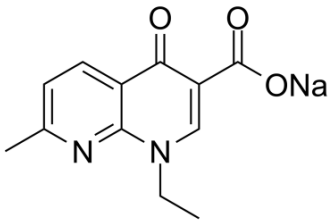
Molecular Formula: $C_{12}H_{11}N_2NaO_3$

Molecular Weight: 254.22

Target: Bacterial; Antibiotic; Topoisomerase

Pathway: Anti-infection; Cell Cycle/DNA Damage

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



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[1][2] .
IC_{50} & Target	Topoisomerase
In Vitro	Nalidixic acid is against a variety of microorganisms, it is against with Escherichia coli, Pasteurella spp., Klebsiella pneuiiioniae, Aerobacter aeroyenes, 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[1]. 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 fkxneri, the ED_{50} values are 25 mg/kg, 60 mg/kg, 50 mg/kg, and 62 mg/kg, respectively[1]. The acute toxicity (LD_{50}) of Nalidixic acid in mice following oral and parenteral administration is: oral, 3300 mg/kg; intravenous, 176 mg/kg; and subcutaneous, 500 mg/kg[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. G Y LESHER,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.

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