Nemonoxacin

Cat. No.: HY-14956

CAS No.: 378746-64-6

Molecular Formula: $C_{20}H_{25}N_3O_4$

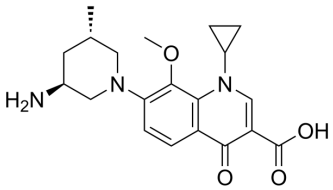
Molecular Weight: 371.43

Target: Antibiotic; Bacterial

Pathway: Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 2 mg/mL (5.38 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6923 mL	13.4615 mL	26.9230 mL
	5 mM	0.5385 mL	2.6923 mL	5.3846 mL
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Nemonoxacin (TG-873870) is an orally active and potent broad-spectrum antibiotic. Nemonoxacin shows good inhibitory activity against different species of staphylococci, streptococci, and enterococci, Neisseria gonorrhoeae, and Haemophilus influenza. Nemonoxacin can be used in the study of bacterial infections and community-acquired pneumonia[1][2][3].

IC_{50} & Target

Bacterial[1][2][3].

In Vitro

Nemonoxacin (0-5.51 μM; 24 h) shows good antibacterial activity in vitro[1].

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

Cell Viability Assay[1]

Cell Line:	MSSA, MRSA
Concentration:	0-5.51 μM (0-2048 μg/mL)
Incubation Time:	24 h

Result:	Inhibited MSSA and MRSA with MIC_{90} values of 0.12 and 4 μg/mL.

In Vivo

Nemonoxacin (p.o.; 15 min and 6 h after infection) shows potent and broad-spectrum in vivo activity against both Gram-positive (S. aureus, S. capitis, S. pneumonia and E. faecalis) and Gram-negative (E. coli) isolates[2].
Nemonoxacin (p.o.; 6, 12 and 24 h after infection) shows potent activities towards (2.5, 5, 10, 20 mg/kg) S. pneumonia 0613 (PRSP) and (10, 20, 40, 80 mg/kg) K. pneumonia 0607 infections in mouse pulmonary infection model[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	CD-1 ICR mice (18-22 g; mouse systemic infection model)[2].
Dosage:	1.6-4.0 mg/kg (S. aureus and S. capitis infections), 2.4-10.0 mg/kg (S. pneumonia infections), 5.0-22.6 mg/kg (E. faecalis infections), 1.6-10.0 mg/kg (E. coli infections)
Administration:	Oral administration; 15 min and 6 h after infection
Result:	Showed the ED_{50}s of 2.08, 2.59 and 2.52 mg/kg to against S. aureus ATCC 29213 (MSSA), S. aureus 0705 (MRSA) and S. capitis 0687 (levofloxacin-resistant MRSC), respectively.

Animal Model:	CD-1 ICR mice (18-22 g; mouse pulmonary infection model)[2].
Dosage:	2.5, 5, 10, 20 mg/kg (S. pneumonia 0613 (PRSP)); 10, 20, 40, 80 mg/kg (K. pneumonia 0607)
Administration:	Oral administration; 6, 12 and 24 h after infection
Result:	Significantly decreased colony counts in vivo.

REFERENCES

[1]. Adam HJ, et al. In vitro activity of nemonoxacin, a novel nonfluorinated quinolone, against 2,440 clinical isolates. Antimicrob Agents Chemother. 2009 Nov;53(11):4915-20.

[2]. Li CR, et al. In vivo antibacterial activity of nemonoxacin, a novel non-fluorinated quinolone. J Antimicrob Chemother. 2010 Nov;65(11):2411-5.

[3]. Lauderdale TL, et al. Comparative in vitro activities of nemonoxacin (TG-873870), a novel nonfluorinated quinolone, and other quinolones against clinical isolates. Antimicrob Agents Chemother. 2010 Mar;54(3):1338-42.

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