Enrofloxacin

Cat. No.: HY-B0502

CAS No.: 93106-60-6

Molecular Formula: $C_{19}H_{22}FN_3O_3$

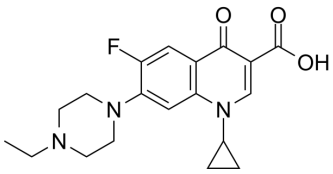
Molecular Weight: 359.39

Target: Bacterial; Antibiotic; Endogenous Metabolite; Orthopoxvirus

Pathway: Anti-infection; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (27.82 mM; Need ultrasonic)

H_2O : 1 mg/mL (2.78 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7825 mL	13.9125 mL	27.8249 mL
5 mM	0.5565 mL	2.7825 mL	5.5650 mL
10 mM	0.2782 mL	1.3912 mL	2.7825 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1 mg/mL (2.78 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (2.78 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (2.78 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Enrofloxacin (BAY Vp 2674) is an effective antibiotic with an MIC_{90} of 0.312 μg/mL for Mycoplasma bovis.

IC_{50} & Target

Quinolone

In Vitro

Mycoplasma bovis is a worldwide pathogen, causative agent of pneumonia, mastitis, arthritis, and a variety of other symptoms in cattle. The antibiotic susceptibility profiles of the Hungarian strains are consistent within the tested group of

	fluoroquinolones. Three isolates (MYC44, MYC45 and MYC46) have high MIC values (≥10 μg/mL) to Enrofloxacin, while the rest of the strains are inhibited by Enrofloxacin with MICs ≤0.312 or 0.625 μg/mL[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Mice (n=80) undergo transient middle cerebral artery occlusion (MCAo) with reperfusion after 60 minutes. After MCAo, animals are randomly assigned to receive either a daily preventive medication (n=26, Enrofloxacin) starting at the day of MCAo or a therapeutic medication (n=25; Enrofloxacin) after diagnosis of lung infection. Standard treatment started immediately after the appearance of clinical signs (general health score>6) usually between day 4 and 6 after stroke. Both, preventive and standard antibiotic treatment using Enrofloxacin improve survival in a similar way compared with placebo treatment[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [2]	Mice[2] 11- to 14-week-old C57Bl6/J male mice are used. Enrofloxacin (2.5% oral solution) is dispensed in saline (2 mg/mL), antibiotic-treated animals receive a daily orally dispensed dose of 10 mg/kg body weight via feeding needle every 12 hours over a period of 7 days, while placebo animals receive the same amount of saline via feeding needle. Animals of preventive antibiotic group obtained Enrofloxacin after waking from reperfusion anesthesia (ca. 1 hour after operation). Therapeutic antibiotic treatment is given immediately after appearance of clinical signs (general health score>5) and confirmation of lung infection by MRI (signal rate≥5%). The group allocation is randomized[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Neuron. 2021 Aug 18;109(16):2573-2589.e9.
- Cell Rep. 2024 Feb 17;43(2):113804.
- Chemosphere. 2023 Nov, 340, 139892.
- Cell Rep. 2023 Mar 21;42(4):112290.
- Chemosphere. 2019 Jun;225:378-387.

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REFERENCES

[1]. S Ikeda , et al. Antiviral activity and inhibition of topoisomerase by ofloxacin, a new quinolone derivative. Antiviral Res. 1987 Oct;8(3):103-13.

[2]. Sulyok KM, et al.Antibiotic susceptibility profiles of Mycoplasma bovis strains isolated from cattle in Hungary, Central Europe. BMC Vet Res. 2014 Oct 25;10:256.

[3]. Hetze S, et al. Superiority of preventive antibiotic treatment compared with standard treatment of poststroke pneumonia in experimental stroke: a bed to bench approach. J Cereb Blood Flow Metab. 2013 Jun;33(6):846-54.

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

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