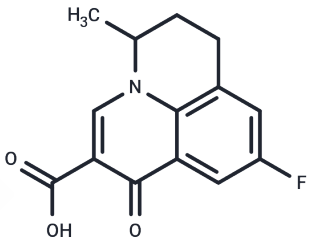
Data Sheet (Cat.No.T1060)

TargetMol

Flumequine

Chemical Properties



CAS No. : 42835-25-6

Formula: C14H12FNO3

Molecular Weight: 261.25

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Flumequine (R-802) is a broad-spectrum antibiotic effective against both Gram-positive and Gram-negative bacteria. It operates by inhibiting DNA gyrase (a type II topoisomerase) and topoisomerase IV, enzymes crucial for separating bacterial DNA, thereby preventing cell division.
Targets(IC50)	Antibacterial,Antibiotic,Topoisomerase
In vitro	At a concentration of 100 mg/L, Flumequine reduced the average length of roots, hypocotyls, and cotyledons in the water plant Lythrum salicaria L., and diminished the count of secondary roots. After oral administration of 10 mg/kg Flumequine, the total clearance rates were 0.024 L/h.kg (cod) and 0.14 L/h.kg (dab), with elimination half-lives (t1/2 λ z) of 75 hours (cod) and 31 hours (dab). The bioavailability of Flumequine following oral administration was measured at 65% (cod) and 41% (dab). Dose-dependent DNA damage in the stomach, colon, and bladder of adult mice was observed after oral administration of 4000 ppm Flumequine for 3 hours instead of 24 hours. In Atlantic salmon, the stable apparent volume of distribution was 3.5 L/kg after intravenous administration of Flumequine, with an elimination half-life (t 1/2) of 22.8 hours, and the area under the plasma drug concentration-time curve (AUC) was 140 μg×hour/mL.
In vivo	Flumequine demonstrates a minimum inhibitory concentration (MIC) ranging from 0.06 μg/mL to 32 μg/mL across 12 clinically isolated Salmonella strains. The high E(max) values for most resistant strains, reaching up to 16, indicate its significant contribution to combating resistant phenotypes. Accumulation studies have shown that these high E (max) values correlate with lower levels of accumulation. Flumequine's inhibition of eukaryotic topoisomerase II, associated with the double-stranded DNA breakage reaction, is the underlying cause for its effect on bacterial gyrase, suggesting a strong correlation between its action on topoisomerase II and the bacterial gyrase inhibition.

Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 3 mg/mL (11.48 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.8278 mL	19.1388 mL	38.2775 mL
5 mM	0.7656 mL	3.8278 mL	7.6555 mL
10 mM	0.3828 mL	1.9139 mL	3.8278 mL
50 mM	0.0766 mL	0.3828 mL	0.7656 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Kashida Y, et al. Toxicol Sci, 2002, 69(2), 317-321.
Giraud E, et al. J Med Microbiol, 2004, 53(Pt 9), 895-901.
Martinsen B, et al. Antimicrob Agents Chemother, 1995, 39(5), 1059-1064.
Migliore L, et al. Chemosphere, 2000, 40(7), 741-750.
Hansen MK, et al. J Vet Pharmacol Ther, 2000, 23(3), 163-168.
Aller-Morán LM, et al. Evaluation of the in vitro activity of flumequine against field isolates of Brachyspira hyodysenteriae. Res Vet Sci. 2015 Dec;103:51-3.

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