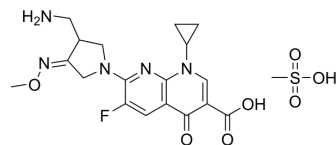


Gemifloxacin mesylate

Cat. No.:	HY-B1050
CAS No.:	210353-53-0
Molecular Formula:	C ₁₉ H ₂₄ FN ₅ O ₇ S
Molecular Weight:	485.49
Target:	Bacterial; Antibiotic; DNA/RNA Synthesis; Topoisomerase
Pathway:	Anti-infection; Cell Cycle/DNA Damage
Storage:	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

DMSO : 100 mg/mL (205.98 mM; Need ultrasonic)
H₂O : 50 mg/mL (102.99 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.0598 mL	10.2989 mL	20.5977 mL
	5 mM	0.4120 mL	2.0598 mL	4.1195 mL
	10 mM	0.2060 mL	1.0299 mL	2.0598 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (5.15 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (5.15 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (5.15 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Gemifloxacin mesylate (SB-265805S; LB-20304a) is an orally active broad-spectrum quinolone antibacterial antibiotic. Gemifloxacin mesylate inhibits DNA synthesis by inhibiting DNA gyrase and Topoisomerase IV activities. Gemifloxacin mesylate has potent antibacterial activities against gram-positive bacteria in vitro efficacy study, particularly Streptococci and Staphylococci. Gemifloxacin mesylate has been used in the research of respiratory tract infections^{[1][2][3]}.

IC₅₀ & Target

Quinolone

In Vitro	<p>Gemifloxacin has higher antibacterial activity than Moxifloxacin (HY-66011A) against <i>Streptococcus pneumoniae</i> with a MIC₉₀ of 0.06 µg/mL^[2].</p> <p>Gemifloxacin has highly potent antibacterial activity against Penicillin-resistant strains of <i>S. pneumoniae</i> with a MIC₉₀ of 0.03 µg/mL^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																					
In Vivo	<p>Gemifloxacin has favorable pharmacokinetic profile in animals after oral administration^[1].</p> <p>Pharmacokinetic Parameters of Gemifloxacin in Sprague-Dawley rats and dogs^[1].</p> <table border="1"> <thead> <tr> <th>Species</th> <th>Administration</th> <th>AUC₀₋₂₄ (µg/mL·h)</th> <th>Half-life (h)</th> <th>C_{max} (µg/mL)</th> <th>T_{max} (h)</th> <th>F (%)</th> </tr> </thead> <tbody> <tr> <td>Rat</td> <td>p.o.; 20 mg/kg</td> <td>8.50</td> <td>2.33</td> <td>2.44</td> <td>0.33</td> <td>95.3</td> </tr> <tr> <td>Dog</td> <td>p.o.; 4 mg/kg</td> <td>7.55</td> <td>5.12</td> <td>1.34</td> <td>1.13</td> <td>71</td> </tr> </tbody> </table> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	Species	Administration	AUC ₀₋₂₄ (µg/mL·h)	Half-life (h)	C _{max} (µg/mL)	T _{max} (h)	F (%)	Rat	p.o.; 20 mg/kg	8.50	2.33	2.44	0.33	95.3	Dog	p.o.; 4 mg/kg	7.55	5.12	1.34	1.13	71
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REFERENCES

- [1]. Hong CY. Discovery of gemifloxacin (Factive, LB20304a): a quinolone of a new generation. *Farmaco*. 2001 Jan-Feb;56(1-2):41-4.
- [2]. Allen A, Kim I, et al. Multiple-dose pharmacokinetics and tolerability of gemifloxacin administered orally to healthy volunteers. *Antimicrob Agents Chemother*. 2001 Feb;45(2):540-5.
- [3]. Erdem M, et al. Ingestion of the anti-bacterial agent, gemifloxacin mesylate, leads to increased *gst* activity and peroxidation products in hemolymph of *Galleria mellonella* L. (Lepidoptera: pyralidae). *Arch Insect Biochem Physiol*. 2016 Dec;93(4):202-209.

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

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