Meropenem

Cat No :	HV-13678		
cat. No	111-13010		
CAS No.:	96036-03-2		
Molecular Formula:	C ₁₇ H ₂₅ N ₃ O ₅ S		
Molecular Weight:	383.46		
Target:	Bacterial; Antibiotic; Penicillin-binding protein (PBP)		
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 : 100 mg/mL (260.78 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Mass Concentration	1 mg	5 mg	10 mg		
		1 mM	2.6078 mL	13.0392 mL	26.0783 mL		
		5 mM	0.5216 mL	2.6078 mL	5.2157 mL		
		10 mM	0.2608 mL	1.3039 mL	2.6078 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: ≥ 2.5 mg/mL (6.52 mM); Clear solution						
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (6.52 mM); Clear solution						
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (6.52 mM); Clear solution						

BIOEOGICALACTIV				
Description	Meropenem (SM 7338) is a carbapenem antibiotic with broad-spectrum antibacterial activity. Meropenem has activity against susceptible and resistant <i>N. gonorrhoeae</i> (MIC value of 0.02-0.06 mg/mL), <i>H. influenzae</i> (MIC value of 0.03-0.12 mg/mL), and <i>H. ducreyi</i> (MIC value of 0.015-0.12 mg/mL) ^{[1][2]} .			
IC ₅₀ & Target	β-lactam			
In Vitro	Meropenem is intrinsically stable to dehydropeptidase-1 (DHP-1) degradation and Meropenem acts by inhibiting bacterial			

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	cell wall synthesis by binding to and inactivating penicillin-binding proteins (PBPs). Meropenem possesses broad-spectrum in vitro activity, which includes activity against many Gram-positive, Gram-negative and anaerobic bacteria; Meropenem lacks activity against Enterococcus faecium, methicillin-resistant Staphylococcus aureus and Stenotrophomonas maltophilia ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.			
In Vivo	Meropenem (60 mg/kg; intraperitoneal injection; once; SD rats) treatment significantly reduces the incidence of pancreatic infection ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.			
	Animal Model:	Male Sprague-Dawley rats (250-350 g) induced acute necrotizing pancreatitis ^[3]		
	Dosage:	60 mg/kg		
	Administration:	Intraperitoneal injection; once		
	Result:	Significantly reduced the incidence of pancreatic infection.		

CUSTOMER VALIDATION

- Nat Microbiol. 2023 Mar;8(3):410-423.
- Nat Commun. 2022 Mar 2;13(1):1116.
- Emerg Microbes Infect. 2024 Dec;13(1):2321981.
- Proc Natl Acad Sci U S A. 2024 Jan 16;121(3):e2314514121.
- Int J Antimicrob Agents. 2018 Aug;52(2):269-271.

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REFERENCES

[1]. L Slaney, et al. In-vitro activity of meropenem against Neisseria gonorrhoeae, Haemophilus influenzae and H. ducreyi from Canada and Kenya. J Antimicrob Chemother. 1989 Sep;24 Suppl A:183-6.

[2]. George G Zhanel, et al. Comparative review of the carbapenems. Drugs. 2007;67(7):1027-52.

[3]. Umit Ateskan, et al. Deferoxamine and meropenem combination therapy in experimental acute pancreatitis. Pancreas. 2003 Oct;27(3):247-52.

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

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