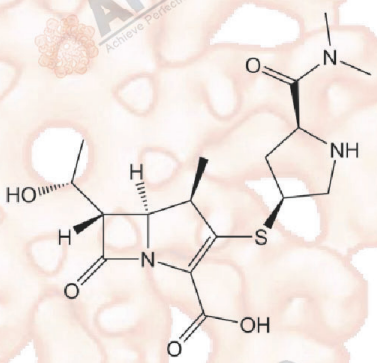
Product Data Sheet

Meropenem



Cat. No.:	A5124
CAS No.:	96036-03-2
Formula:	C17H25N3O5S
M.Wt:	383.46
Synonyms:	
Target:	Microbiology & Virology
Pathway:	Antibiotic
Storage:	Store at -20°C

Solvent & Solubility

In Vitro

insoluble in EtOH; ⩾19.15 mg/mL in DMSO; ⩾9.88 mg/mL in H2O with ultrasonic

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1mg	5mg	10mg
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.

Biological Activity

Shortsummary	β -lactam antibiotic of the carbapenem subclass
IC_{50} & Target	

In Vitro

Cell Viability Assay

Cell Line:	1116 strains including 659 Gram-negative bacteria, 271 Gram-positive organisms, 96 strains of more rarely isolated species and 90 strictly anaerobic bacteria.
Preparation method:	The solubility of this compound in DMSO is >19.2mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored

		below -20°C for several months.
	Reacting conditions:	0-25 mg/l
	Applications:	In 659 Gram-negative bacteria, Meropenem exhibited the widest spectrum of activity against these listed species and inhibited all but nine strains (MICs≥16mg/l). In 271 Gram-positive organisms tested, only two methicillin-resistant staphylococci and five Enterococcus faecium strains had meropenem MICs of ≥16mg/l. In 90 strains of strictly anaerobic organisms, Meropenem was quite active against these bacteria with an overall MIC90 of 1 mg/1.
In Vivo	**Animal experiment**	
	Animal models:	Septic rat model of Klebsiella pneumoniae
	Dosage form:	30 mg/kg and an equivalent dose of the drug-loaded nanoparticle dispersion; single intraperitoneal injection
	Applications:	In septic rat model of Klebsiella pneumoniae, treatment with free meropenem exhibited 30% mortality, which was not statistically significant, as compared to the control untreated rats (50% mortality). However, all rats treated with the drug-loaded nanoparticle dispersions survived during the 48 h, suggesting a significant improvement of survival rate. Infected animals treated with free meropenem showed no significant reduction of blood bacterial count, while the drug-loaded nanoparticles significantly reduced blood bacterial counts.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

[1] Jones R N, Barry A L, Tbornsberry C. In-vitro studies of meropenem[J]. Journal of Antimicrobial Chemotherapy, 1989, 24(suppl A): 9-29.

[2]. Abdelkader A1, El-Mokhtar MA2, Abdelkader O1, et al. Ultrahigh antibacterial efficacy of meropenem-loaded chitosan nanoparticles in a septic animal model. Carbohydr Polym. 2017 Oct 15;174:1041-1050.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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