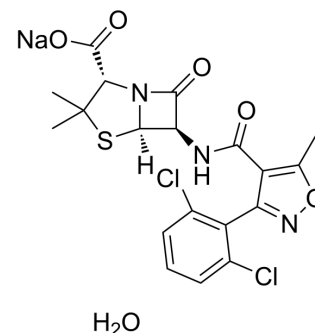


## Dicloxacillin Sodium hydrate

<b>Cat. No.:</b>	HY-B0977
<b>CAS No.:</b>	13412-64-1
<b>Molecular Formula:</b>	C <sub>19</sub> H <sub>18</sub> Cl <sub>2</sub> N <sub>3</sub> NaO <sub>6</sub> S
<b>Molecular Weight:</b>	510.32
<b>Target:</b>	Bacterial; Antibiotic
<b>Pathway:</b>	Anti-infection
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 25 mg/mL (48.99 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		1.9596 mL	9.7978 mL	19.5955 mL
		<b>5 mM</b>		0.3919 mL	1.9596 mL	3.9191 mL
	<b>10 mM</b>		0.1960 mL	0.9798 mL	1.9596 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 25 mg/mL (48.99 mM); Clear solution; Need ultrasonic					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Dicloxacillin Sodium hydrate (Dicloxacillin sodium salt monohydrate) is a narrow-spectrum β-Lactam antibiotic of the penicillin class, is used to treat infections caused by susceptible Gram-positive bacteria, active against beta-lactamase-producing organisms such as <i>Staphylococcus aureus</i> <sup>[1][2][3]</sup> .	
<b>IC<sub>50</sub> &amp; Target</b>	β-lactam	
<b>In Vitro</b>	Dicloxacillin exhibits EC <sub>50</sub> values of 0.06 and 0.50 mg/L in ATCC 25923 and E19977, respectively. Dicloxacillin exhibits MIC values of 0.125 and 0.5 mg/L in ATCC 25923 and E19977 with pH 7.4, respectively <sup>[3]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Cell Viability Assay <sup>[3]</sup>	
	Cell Line:	Strains ATCC 25923 and E19977.

Concentration:	0-500 mg/L.
Incubation Time:	Up to 24 h.
Result:	Exhibited EC <sub>50</sub> values of 0.06 and 0.50 mg/L in ATCC 25923 and E19977, respectively.

#### In Vivo

Dicloxacillin exhibits therapeutic activity in murine peritonitis-sepsis model and all the mice are survived<sup>[4]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female outbred Swiss Webster mice (Murine peritonitis-sepsis model) <sup>[4]</sup> .
Dosage:	125 mg/kg.
Administration:	IV injection, single doses.
Result:	All the mice survived.

## CUSTOMER VALIDATION

- bioRxiv. 2024 May 10.
- Biomed Res Int. 2018 Jul 2;2018:3579832.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

- [1]. Jusko WJ, et al. Enhanced renal excretion of dicloxacillin in patients with cystic fibrosis. *Pediatrics*. 1975 Dec;56(6):1038-44.
- [2]. Miranda-Novales G, et al. In vitro activity effects of combinations of cephalothin, dicloxacillin, imipenem, vancomycin and amikacin against methicillin-resistant *Staphylococcus* spp. strains. *Ann Clin Microbiol Antimicrob*. 2006 Oct 12;5:25.
- [3]. Anne Sandberg, et al. Intra- and extracellular activities of dicloxacillin against *Staphylococcus aureus* in vivo and in vitro. *Antimicrob Agents Chemother*. 2010 Jun;54(6):2391-400.
- [4]. John Chu, et al. Discovery of MRSA active antibiotics using primary sequence from the human microbiome. *Nat Chem Biol*. 2016 Dec;12(12):1004-1006.

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

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