

Product Name:	Temocillin Disodium
Product Number:	T130
CAS Number:	61545-06-0
Molecular Formula:	$C_{16}H_{18}N_2Na_2O_7S_2$
Molecular Weight:	458.42
Form:	Powder
Appearance:	white or almost white powder
Source:	semi-synthetic
Description:	Temocillin Disodium is the salt of Temocillin a semisynthetic, β -lactamase resistant carboxypenicillin antimicrobial used as an alternative to carbapenems that is primarily used for Gram-negative bacteria.
Mechanism of Action:	Like other β -lactams, Temocillin Disodium interferes with penicillin binding protein (PBP) activity involved in the final phase of peptidoglycan synthesis. PBB catalyzes the pentaglycine crosslink between alanine and lysine. Without a pentaglycine crosslink, the integrity of the cell wall is compromised which leads to cell lysis and death. Temocillin is resistant to most β -lactamases, but resistance is commonly due to cells containing plasmid-encoded β -lactamases.
Spectrum:	Temocillin is active against several multi-resistant Gram-negative species including <i>Salmonella typhimurium</i> , <i>E. coli</i> , <i>Haemophilus influenzae</i> and others. In contrast, Gram-positive bacteria, bacteria with altered penicillin-binding proteins, and <i>Pseudomonas aeruginosa</i> are not susceptible to temocillin.
Microbiology Applications	Temocillin is commonly used in clinical <i>in vitro</i> microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against Gram-negative microbial isolates. Medical microbiologists use this information to recommend antibiotic treatment options. Representative MIC ranges include: <ul style="list-style-type: none">◦ <i>E. coli</i> 1.00 μg/mL - 64.00 μg/mL◦ <i>H. influenzae</i> β-lactamase negative: 0.25 - 0.50 μg/ml◦ <i>H. influenzae</i> β-lactamase positive: 0.50 - 1.00 μg/ml◦ <i>S. aureus</i> >128.00 μg/ml

For a list of MIC values, [click here](#).

References:

Pitout JD, Sanders CC, Sanders WE (1997) Antimicrobial resistance with focus on beta-lactam resistance in Gram-negative bacilli. *Am. J. Med.* 103:51
PMID 9236486

Jules, K and Neu HC (1982) Antibacterial Activity and Beta-lactamase Stability of Temocillin. *Antimicrob. Agents and Chemother.* 22(3): 453-460

Rodriguez-Villalobos H et al (2006) *In vitro* activity of temocillin against extended spectrum beta-lactamase-producing *Escherichia coli*. *J Antimicrob. Chemother.* 57(4):771-774 PMID 16501056

Van Landuyt HW, Pyckavet MP, Lambert A and Boelaert J (1982) *In vitro* activity of temocillin (BRL 17421), a novel B-lactam antibiotic. *Antimicrob. Agents. Chemother.* 22(4):535-540 PMID 7181470

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