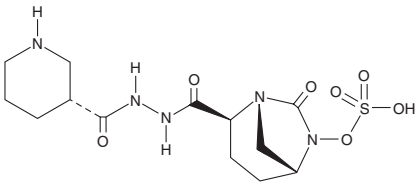
PRODUCT INFORMATION

Zidebactam

Item No. 30701

CAS Registry No.: 1436861-97-0
Formal Name: (1R,2S,5R)-7-oxo-6-(sulfooxy)-2-[2-[(3R)-3-piperidinylcarbonyl]hydrazide], 1,6-diazabicyclo[3.2.1]octane-2-carboxylic acid
Synonym: WCK-5107
MF: $C_{13}H_{21}N_5O_7S$
FW: 391.4
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Zidebactam is supplied as a solid. A stock solution may be made by dissolving the zidebactam in water. We do not recommend storing the aqueous solution for more than one day.

Description

Zidebactam is a penicillin-binding protein 2 (PBP2) inhibitor and β-lactam antibiotic enhancer.[1] It inhibits *P. aeruginosa* PBP2 (IC_{50} = 0.26 µg/ml) and is selective for PBP2 over PBP1a, -1b, -3, -4, and -5/6 (IC_{50}s = >4 µg/ml for all). Zidebactam enhances the bactericidal activity of cefepime (Item No. 23633) against multidrug-resistant strains of *P. aeruginosa*, as well as against *E. coli*, *Klebsiella*, *Enterobacter*, *S. marcescens*, and *A. baumannii*.[2] *In vivo*, zidebactam enhances cefepime-induced reductions in bacterial loads in mouse models of *K. pneumoniae*-induced peritonitis and thigh infection.[3] Formulations containing zidebactam in combination with cefepime have been used in the treatment of various bacterial infections.

References

1. Moya, B., Barcelo, I.M., Bhagwat, S., *et al*. WCK 5107 (zidebactam) and WCK 5153 are novel inhibitors of PBP2 showing potent "β-lactam enhancer" activity against *Pseudomonas aeruginosa*, including multidrug-resistant metallo-β-lactamase-producing high-risk clones. *Antimicrob. Agents Chemother*. **61(6)**, e02529-16 (2017).
2. Sader, H.S., Rhomberg, P.R., Flamm, R.K., *et al*. WCK 5222 (cefepime/zidebactam) antimicrobial activity tested against Gram-negative organisms producing clinically relevant β-lactamases. *J. Antimicrob. Chemother*. **72(6)**, 1696-1703 (2017).
3. Moya, B., Barcelo, I.M., Cabot, G., *et al*. *In vitro* and *in vivo* activities of β-lactams in combination with the novel β-lactam enhancers zidebactam and WCK 5153 against multidrug-resistant metallo-β-lactamase-producing *Klebsiella pneumoniae*. *Antimicrob. Agents Chemother*. **63(5)**, e00128-19 (2019).

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