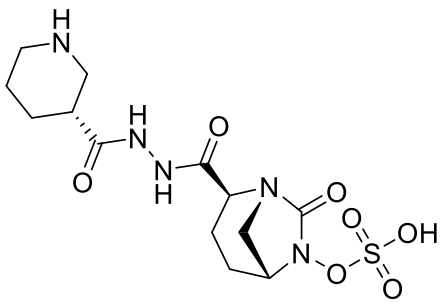


# Product data sheet



MedKoo Cat#: 319537 Name: Zidebactam CAS#: 1436861-97-0 Chemical Formula: C <sub>13</sub> H <sub>21</sub> N <sub>5</sub> O <sub>7</sub> S Exact Mass: 391.1162 Molecular Weight: 391.4		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

## 1. Product description:

Zidebactam, also known as WCK-5107, is a Beta lactamase inhibitor. Zidebactam is a novel Inhibitor of PBP2 Showing Potent "β-Lactam Enhancer" Activity against *Pseudomonas aeruginosa*, Including Multidrug-Resistant Metallo-β-Lactamase-Producing High-Risk Clones. Zidebactam demonstrated specific high-affinity binding to PBP2 of *A. baumannii* (0.01 µg/ml for both of the compounds). The MIC of zidebactam was >1,024 µg/ml for wild-type and multidrug-resistant *Acinetobacter* strains. Zidebactam is a PBP2 inhibitor that show a potent β-lactam enhancer effect against *A. baumannii*, including a multidrug-resistant OXA-23-producing ST2 international clone.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	250	638.73
Water	50	127.75

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.55 mL	12.77 mL	25.55 mL
5 mM	0.51 mL	2.55 mL	5.11 mL
10 mM	0.26 mL	1.28 mL	2.55 mL
50 mM	0.05 mL	0.26 mL	0.51 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Sader HS, Rhomberg PR, Flamm RK, Jones RN, Castanheira M. WCK 5222 (cefepime/zidebactam) antimicrobial activity tested against Gram-negative organisms producing clinically relevant β-lactamases. *J Antimicrob Chemother.* 2017 Jun 1;72(6):1696-1703. doi: 10.1093/jac/dkx050. PMID: 28333332.

### In vivo study

1. Moya B, Barcelo IM, Cabot G, Torrens G, Palwe S, Joshi P, Umalkar K, Takalkar S, Periasamy H, Bhagwat S, Patel M, Bou G, Oliver A. 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.* 2019 Apr 25;63(5):e00128-19. doi: 10.1128/AAC.00128-19. PMID: 30782985; PMCID: PMC6496095.

2. Bhagwat SS, Periasamy H, Takalkar SS, Palwe SR, Khande HN, Patel MV. The Novel β-Lactam Enhancer Zidebactam Augments the In Vivo Pharmacodynamic Activity of Cefepime in a Neutropenic Mouse Lung *Acinetobacter baumannii* Infection Model.

# Product data sheet



Antimicrob Agents Chemother. 2019 Mar 27;63(4):e02146-18. doi: 10.1128/AAC.02146-18. PMID: 30670419; PMCID: PMC6437547.

## 7. Bioactivity

### Biological target:

Zidebactam (WCK-5107) is a potent  $\beta$ -lactamase inhibitor and a penicillin-binding protein2 (PBP2) inhibitor with an IC<sub>50</sub> of 0.26  $\mu$ g/mL.

### In vitro activity

Zidebactam alone exhibited variable activity (MIC<sub>50/90</sub> 0.25/>128 mg/L) when tested against WT Enterobacteriaceae. Overall, E. coli (MIC<sub>50/90</sub> 0.12/0.12 mg/L) and Enterobacter spp. (MIC<sub>50/90</sub> 0.12/0.25 mg/L) isolates exhibited low zidebactam MIC values, whereas indole-positive Proteae (MIC<sub>50/90</sub> >128/>128 mg/L) and Serratiamarcescens (MIC<sub>50/90</sub> >128/>128 mg/L) showed much higher zidebactam MICs. Among WT Klebsiella spp. isolates, zidebactam MICs ranged from 0.12 to >128 mg/L (MIC<sub>50/90</sub> 0.25/>128 mg/L; Table 2)

Reference: J Antimicrob Chemother. 2017 Jun 1;72(6):1696-1703. <https://academic.oup.com/jac/article-lookup/doi/10.1093/jac/dkx050>

### In vivo activity

The peritonitis model study was performed with K. pneumoniae NCTC 13443. Cefepime at 100 mg/kg of body weight (3 doses) did not provide protection to infected mice (Table 3). The 50% effective dose (ED<sub>50</sub>) and ED<sub>90</sub> of zidebactam or WCK 5153 in combination with 100 mg/kg of cefepime were 19.46 and 49.77 mg/kg, respectively. The efficacy of aztreonam in combination with BLEs was not evaluated in the peritonitis model, since the combination was studied in detail employing the thigh infection model.

Reference: Antimicrob Agents Chemother. 2019 Apr 25;63(5):e00128-19. <https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/30782985/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*