Product Name: Ampicillin/Sulbactam (2:1)

Product Number: A071

CAS Number: 117060-71-6

Molecular Formula:
- Ampicillin: C$_{16}$H$_{19}$N$_3$O$_4$S
- Sulbactam: C$_8$H$_{11}$NO$_5$S

Molecular Weight: Mixture

Form: Powder

Appearance: White or almost white crystalline powder

Water Content (Karl Fischer): ≤2.0%

pH: 8.0-10.0

Description: Ampicillin is a member of the extended spectrum β-lactam family and similar in structure to penicillin. Sulbactam is a β-lactamase inhibitor used to increase potency of β-lactam antibiotics.

TOKU-E offers five forms of ampicillin:

- Ampicillin/Sulbactam (2:1) (A071)
- Ampicillin Anhydrous (A043)
- Ampicillin Sodium (A042)
- Ampicillin Trihydrate, USP (A009)
- Ampicillin Trihydrate, EP (A020)

In aqueous solution, ampicillin sodium is freely soluble (50 mg/mL). Ampicillin trihydrate is slightly soluble in water (10 mg/mL) and freely soluble in 1 N HCl (50 mg/mL). Ampicillin anhydrous is sparingly soluble in water and freely soluble in 1 N NH$_4$OH (50 mg/mL). Ampicillin sodium is commonly used to select for successfully transformed bacteria. Ampicillin anhydrous (powder) is the most stable and pure form of ampicillin TOKU-E offers.

Mechanism of Action: Like all β-lactams, ampicillin interferes with PBP (penicillin binding protein) activity otherwise involved in the final phase of peptidoglycan synthesis. PBP’s are enzymes which catalyze a pentaglycine crosslink between alanine and lysine residues. Without a pentaglycine crosslink, the integrity of the cell wall is severely compromised ultimately leading to cell lysis.

Spectrum: Ampicillin targets non ESBL (Extended Spectrum β-lactamase) bacteria including *Staphylococcus* and *Streptococcus* and medically important enteric pathogens such as *Shigella* and *Salmonella*. Interestingly, ampicillin has been found to be effective against certain β-lactam sensitive VRE or vancomycin resistant *Enterococcus*; a glycopeptide antibiotic resistant "superbug."
Microbiology Applications

Ampicillin anhydrous is commonly used in clinical in vitro microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive and gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients.

Media Supplements

Ampicillin can be used as a selective agent in several types of isolation media: Aeromonas Medium Base - Ampicillin Selective Supplement

References:


If you need any help, contact us: info@toku-e.com. Find more information on: www.toku-e.com/