

Product Name:	Amoxicillin : Potassium Clavulanate (2:1)
Product Number:	A054
CAS Number:	Mixture
Appearance:	Off-white or yellow powder
Solubility:	water (300 mg/mL)
Water Content (Karl Fischer):	≤11.0%
pH:	4.8-8.6
Storage Conditions:	2-8°C
Description:	<p>Amoxicillin : Potassium Clavulanate (2:1) is a combination of Amoxicillin Trihydrate (one part) and Potassium Clavulanate (Clavulanic Acid)(two parts) which prevents the degradation of Amoxicillin by β-lactamase enzymes and allows for greater efficacy against β-lactam resistant strains.</p> <p>Amoxicillin is an extended spectrum β-lactam antibiotic similar in structure to Ampicillin. Resistance to Amoxicillin is due to β-lactamase enzymes secreted by resistant cells.</p> <p>Potassium Clavulanate (Clavulanic acid), produced by the fermentation of <i>Streptomyces clavuligerus</i>, is a β-lactamase inhibitor which can irreversibly inactivate β-lactamase enzymes of β-lactam resistant microbes.</p> <p>TOKU-E offers three forms of Amoxicillin:</p> <ul style="list-style-type: none"> • Amoxicillin : Potassium Clavulanate (2:1) (A054) • <u>Amoxicillin Trihydrate (A004)</u> • <u>Amoxicillin Sodium (A059)</u>
Mechanism of Action:	<p>Amoxicillin : Potassium Clavulanate (2:1) is soluble in water (300 mg/ml)</p> <p>Like all β-lactams, Amoxicillin targets PBP's (penicillin binding proteins) 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 the death of the cell.</p>
Spectrum:	<p>Amoxicillin targets a wide range of β-lactamase negative Gram-positive and Gram-negative bacteria including <i>E. coli</i> and a number of <i>Streptococcus</i> and <i>Staphylococcus</i> species. Because peptidoglycan is synthesized in Gram-positive and Gram-negative bacteria, Amoxicillin can be used against a wide variety of microbes. Clavulanate competitively and irreversibly inhibits a wide variety of β-lactamases[found in bacteria that are resistant to penicillins and cephalosporins.</p>

Microbiology Applications Amoxicillin 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. Representative MIC values include:

- *Neisseria gonorrhoeae* 0.3 µg/mL - 32 µg/mL
- *Haemophilus influenzae* 0.125 µg/mL — >64 µg/mL
- For a complete list of amoxicillin MIC values, [click here](#).

References:

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