Product Name: Penicillin V potassium

Product Number: P027

CAS Number: 132-98-9

Molecular Formula: C_{16}H_{17}N_{2}O_{5}SK

Molecular Weight: 388.48

Form: Powder

Appearance: Yellow crystalline powder

Solubility: Water: Freely soluble

Source: Penicillium Spp.

Melting Point: 197-202 °C

Storage Conditions: 2-8 °C

Description: Penicillin is a member of the β-lactam antibiotics and was one of the first discovered antibiotics. Penicillin V potassium is sparingly soluble in aqueous solution at 1 mg/mL. Click here for more forms of penicillin.

Mechanism of Action: β-lactams interfere with PBP (penicillin binding protein) activity involved in the final phase of peptidoglycan synthesis. PBP’s are enzymes which catalyze a pentaglycine crosslink between alanine and lysine residues providing additional strength to the cell wall. Without a pentaglycine crosslink, the integrity of the cell wall is severely compromised and ultimately leads to cell lysis and death. Resistance to β-lactams is commonly due to cells containing plasmid encoded β-lactamases.

Spectrum: Penicillin is targets primarily gram positive bacteria including Staphylococcus and Streptococcus species.

Microbiology Applications Penicillin is commonly used in clinical in vitro microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- *Streptococcus pneumoniae* 0.004 µg/mL – 0.5 µg/mL
- *Streptococcus agalactiae* 0.03 µg/mL – 0.06 µg/mL
- For a complete list of penicillin MIC values, click here.


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