ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Data Sheet

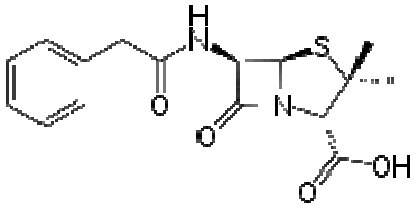
Cat # ABT-050-01	**Benzylpenicillin, potassium (Pharma Grade)**	**Size**: 1 g
Cat # ABT-050-10	**Benzylpenicillin, potassium (Pharma Grade)**	**Size**: 10 g (or bulk)

General Information

Benzylpenicillin, commonly known as penicillin G, is the gold standard type of penicillin. Penicillin G is typically given by a parenteral route of administration (not orally) because it is unstable in the hydrochloric acid of the stomach. Because the drug is given parenterally, higher tissue concentrations of penicillin G can be achieved than is possible with phenoxymethylpenicillin. These higher concentrations translate to increased antibacterial activity.

The cell walls are essential for normal growth and development of bacteria. Peptidoglycan is the heteropolymeric component of the cell wall providing rigid mechanical stability. The action of the beta-lactam antibiotics is involved in the third stage of cell membrane cross-link formation, namely the transpeptidation reaction. The terminal glycine residue of the pentaglycine bridge is linked to the fourth residue (D-alanine) releasing the fifth residue (also D-alanine) and this step is inhibited by the beta-lactam antibiotics. The transpeptidase is probably acylated by penicillin. Various penicillin binding proteins (transpeptidases and carboxypeptidases) are associated with the bacterial cell membrane and beta-lactam antibiotics bind tightly to them. The penicillin binding proteins vary from one bacterial species to another and in their affinity for different antibiotics. The morphological changes brought about are dependant on the antibiotic, its concentration and the microbe. As the concentration is increased, growth is inhibited, bulges form and lysis follows. Resistant strains (containing no autolysins) will not lysate and different type of antibiotics are to be used.

Benzyl penicillin is highly active against gram-positive cocci and is similar to that of penicillin V in aerobic gram-positive micro-organisms. It is five to ten times more active against gram-negative micro-organisms.



Molecular Formula:
($C_{16}H_{18}N_2O_4S$)
Molecular Weight:
334.4 g/mol

Certificate of Analyses

Test Items	Standard	Results
Aspect	white crystalline powder	white crystalline powder
Identification	Not been Inactivated solutions all are antibacterial Infrared light absorption pattern should be the same as the reference	Complies
Check Absorbance Acidity	≤0.10 at 280nm 0.80-0.88 at 264nm 5.0-7.5	0.85 5.5
Clarity and color of solution	Should comply	Complies
Water	≤0.5%	0.43%
Bacterial endotoxins	≤0.01EU/100U	Complies
Sterile	Should comply	Complies
Assay	$C_{16}H_{17}KN_2O_4S$≥96.0% count by anhydrous	98.8%
Solubility in water	5-10 g/100 mL at 25 °C.	Very soluble
Conclusion	The product is tested in accordance with QB. The Results Complies	

Usage: This item is for LABORATORY ESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

ABT-050-01 **110105A**

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com