

# BIOPEN

## Injection

For Veterinary Use Only

### COMPOSITION:

Each dry powder vial contains:

Penicillin G Potassium..... 500,000IU  
Procaine Penicillin..... 1,500,000IU  
Streptomycin Sulphate..... 5gm

### PHARMACEUTICAL FORM:

Powder for suspension for injection

### INDICATIONS:

Biopen Injection is very effective in gram-positive and gram-negative bacterial infections and inflammation like Pneumonia, Pulmonary Disease, Enteritis, Dysentery, Mastitis, Otitis Media, Uteritis, Puerperal Fever, Transport Fever, Burn, Urinary Diseases etc.

### PHARMACOLOGICAL PROPERTIES:

Pharmacotherapeutic group: antibacterial for systemic use, penicillin, combinations with other antibacterial.

### PHARMACODYNAMIC PROPERTIES:

Benzylpenicillin is a natural penicillin obtained from a strain of *Penicillin chrysogenum*. Benzylpenicillin has bactericidal properties of a degenerative type. It binds to specific receptor proteins PBP (penicillin binding protein) located in the cytoplasmic membrane of bacteria. These receptor proteins (which include transpeptidases, carboxypeptidases and endopeptidases) are enzymes involved in the terminal stages of cell wall formation and in cell wall repair during cell growth and division. Benzylpenicillin binds to and inactivates specific receptor proteins, preventing bacterial wall formation. Benzylpenicillin has a relatively narrow spectrum of activity. Gram-positive cocci (*Streptococcus* spp., *Staphylococcus* spp). Gram-negative (*Miniserie* spp.), Gram-positive bacilli (*Ensiopelorzhi rhusiopathia*. *Begillus anthracis*. *Clostridium* spp.) are sensitive to the action of benzylpenicillin because they have specific and available membrane receptors. Also *Actinomyces* spp... *Leptospira* spp. 3unjensible to the action of benzylpenicillin (in high doses). It is not active against penicillinase-producing bacteria.

Benzylpenicillin is a crystalline salt of benzylpenicillin with procaine. It is an injectable penicillin with a delayed effect. The antimicrobial spectrum is that of benzylpenicillin (Penicillin G), but it achieves a plasma concentration of 1.5 U/ml after 2-5 hours. Active concentrations are maintained for 24 hours. Streptomycin is an aminoglycoside antibiotic with a bactericidal effect against

Gram-positive bacilli (*Corynebacterium* spp.), Gramnegative bacilli (*Escherichia coli*. *Klebsiella* spp.), Gram-positive cocci (*Staphylococcus* spp. *Streptococcus* spp.). Streptomycin irreversibly inhibits bacterial protein synthesis, having an absolute bactericidal action. After diffusion into the channels of the bacterial outer cell membrane, it is transported transmembrane, through an oxygen-dependent process. This active transport is inhibited under conditions of decreased intracellular pH or anaerobiosis and enhanced by antibiotics that inhibit cell wall formation, such as penicillin. This explains the synergistic relationship between streptomycin and benzyl penicillin. Once intracellular, streptomycin binds irreversibly to the ribosomal subunit 30s. with inhibition of bacterial protein synthesis and cell death.

### DOSAGE & ADMINISTRATION:

Add 10ml water for injection in vial and shake well to make complete solution. Administer the following dose by Intramuscular injection only.

**Cattle / Buffalo:** 15ml per 250-500kg bodyweight.

**Sheep/Goat:** 2ml per 25-50kg bodyweight.

**Dog/Cat:** 0.5ml per 4-5kg bodyweight.

### PRECAUTIONS:

**Shake well before use.**

Do not use in animals sensitive to penicillin.

Consult the veterinarian before use.

Keep out of the reach of children.

Store between 15- 25 degree centigrade in a cool and dry place.

### WITHDRAWAL TIME:

Meat: 08 days.

**Selmore's Specs.**



Manufactured by:  
Selmore Pharmaceuticals (Pvt) Ltd.  
36 Km Multan Road, Lahore, Pakistan.



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