PEN-FLU

ANTIBIOTIC – ANTI-INFLAMMATORY

Injectable suspension

REG. SAN: 2C4-9445-AGROCALIDAD

Formula:

Each 1 mL contains:
Benzathine Penicillin G 125,000 IU
Procaine Penicillin G 125,000 IU
Potassium Penicillin G 50,000 IU
Dihydrostreptomycin Sulfate 250 mg
Flunixin Meglumine 12.5 mg
Excipients q.s. to 1 mL

INDICATIONS:

PEN-FLU acts against Gram-positive and Gram-negative bacteria responsible for infectious processes such as septicemia, mastitis, pneumonia, foot rot, metritis, peritonitis, actinomycosis, leptospirosis, clostridiosis, infections associated with castration, and wound healing. It has potent antimicrobial, analgesic, anti-inflammatory, and antipyretic activity. It is indicated for use in cattle, horses, swine, sheep, dogs, and cats.

ROUTE OF ADMINISTRATION: Intramuscular

SPECIES AND DOSAGE:



DOSAGE
ROUTE OF ADMINISTRATION: Intramuscular.
Repeat after 72 hours or according to the veterinarian's discretion.

SPECIES	BODY WEIGHT	PRACTICAL DOSE
Cattle	More than 200 kg	20 mL/animal
	Less than 200 kg	10 mL/animal
	Calves	5–8 mL/animal
Horses	More than 200 kg	20 mL/animal
	Less than 200 kg	10 mL/animal
Swine / Sheep	Adults	5–8 mL/animal
Dogs / Cats	—	1–3 mL/animal

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PHARMACOKINETICS :

Penicillins: Penicillins are generally widely distributed throughout the body. Most reach therapeutic levels in the kidneys, liver, heart, skin, lungs, intestines, bile, bone, prostate, and peritoneal, pleural, and synovial fluids. Most penicillins are rapidly excreted unchanged by the kidneys in the urine through glomerular filtration and tubular secretion.
Dihydrostreptomycin: It is rapidly absorbed following IM or SC administration. Its distribution into milk is limited and irregular. Plasma protein binding is 8% in cattle and 12% in sheep.
Flunixin Meglumine: The onset of action generally occurs within 2 hours, with the maximum response occurring between 12 and 16 hours after administration. Elimination occurs primarily via the hepatic route through biliary excretion.

MECHANISM OF ACTION:

Penicillins: They bind to several enzymes (carboxypeptidases, transpeptidases, and endopeptidases) located within the bacterial cytoplasmic membrane and involved in cell wall synthesis. They are generally bactericidal against susceptible bacteria and act by inhibiting mucopeptide synthesis in the cell wall, resulting in a defective barrier and an osmotically unstable spheroplast.
Dihydrostreptomycin: It binds to a receptor protein on the bacterial membrane. This binding is facilitated by the electropositive nature of aminoglycosides and the electronegative nature of the cell surface. The antibiotic enters the bacterium through oxygen-dependent active transport associated with electron transport. This appears to alter bacterial membrane permeability, which explains the antimicrobial synergism achieved when aminoglycosides are combined with other drugs, such as β-lactams. Within the bacterial cytoplasm, it binds irreversibly to protein receptors on the 30S ribosomal subunit and, to a much lesser extent, the 50S subunit. The combined effect on the membrane and disruption of protein synthesis induces bacteriolysis, an uncommon effect among antibacterial agents that interfere with protein synthesis.
Flunixin Meglumine: It is a potent cyclooxygenase inhibitor and, like other NSAIDs, exhibits analgesic, anti-inflammatory, and antipyretic activity. It does not significantly alter gastrointestinal motility in horses and may improve hemodynamics in animals with septic shock. It inhibits the production of prostaglandins (PGs) and leukotrienes released as a result of the cytotoxic effects of bacterial toxins and endotoxins.

PRECAUTIONS- WARNINGS- CONTRAINDICATIONS:

Perform a skin sensitivity test prior to administration.
Do not use in animals with hypersensitivity to penicillins.
Do not administer intravenously.
Do not administer concomitantly with other medications.
Shake well before use.

DRUG INTERACTIONS:

The combination of dihydrostreptomycin with other nephrotoxic agents such as polymyxins, tetracyclines, amphotericin B, cephaloridine, mercurial agents, salicylate analgesics, and carbamazepine is not recommended.

Penicillins may be affected by heavy metals such as copper, mercury, iron, and zinc, which can alter the thiazolidine ring of their molecular structure. Penicillins are antagonized by alcohol and thiol groups, chloramphenicol, erythromycin, and tetracycline.

ADVERSE REACTIONS

An allergic reaction may occur, with signs ranging from urticaria to anaphylactic shock. If this occurs, treat with antihistamines or according to the veterinarian's discretion.

WITHDRAWAL PERIOD:

Meat and Milk: 30 days.

COMMERCIAL PRESENTATIONS:

Bottle x 10 mL
Bottle x 20 mL
Bottle x 50 mL
Bottle x 100 mL
Bottle x 250 mL