APPROVED BY
Council for Veterinary Drugs
minutes dated December 12, 2022 No. 124

Instructions
for use of the veterinary drug
Penstrep LA-TRV

1 General information

1.1 Penstrep LA-TRV.
International non-proprietary name of the active pharmaceutical ingredients: benzylpenicillin procaine, benzylpenicillin benzathine, dihydrostreptomycin sulfate.
1.2 The drug is white to yellow suspension. During storage, the formation of a precipitate that breaks up when shaken is allowed.
Dosage form: suspension for intramuscular and subcutaneous injection.
1.3 1 ml of the drug contains 100 mg of benzylpenicillin procaine, 100 mg of benzylpenicillin benzathine, 200 mg of dihydrostreptomycin sulfate, as well as excipients (sodium citrate, citric acid, polyvinylpyrrolidone, ethoxylated sorbitan monooleate, disodium salt of ethylenediaminetetraacetic acid, sodium hydroxymethane paraben, sodium sodium) and base (water for injection).
1.4 The drug is packaged in 10.0; 20.0; 30.0; 50.0; 100.0; 200.0 and 400.0 ml glass vials.
1.5 The drug is stored in the manufacturer's packaging according to list B, in a dry, dark place at a temperature of plus 2°C to plus 15°C.
1.6 Expiration date is two years from the date of manufacturing, subject to the conditions of storage and transportation. After the first opening of the package, subject to asepsis rules - 10 days at a temperature plus 2°C to plus 8°C. Do not use after the expiration date. The unused drug is disposed of in accordance with legal requirements.

2 Pharmacological properties

2.1 The salts of benzylpenicillin and dihydrostreptomycin sulfate, as part of the drug, exhibit synergism of action, thereby enhancing each other's effect and expanding the spectrum of antimicrobial activity.
The combination of active substances is highly active against gram-positive bacteria, including: Clostridium spp., Corynebacterium spp., Erysipelothrix spp., Enterococcus spp., Listeria spp., Staphylococcus spp. (including Staphylococcus aureus), Streptococcus spp.; and gram-negative microorganisms: Escherichia coli, Salmonella spp., Klebsiella spp., Pasteurella spp., Haemophilus spp., Campylobacter spp., Treponema spp. and other.
2.2 Benzylpenicillin in the form of procaine and benzathine salts belongs to the group of beta-lactam antibiotics; it has a bactericidal effect, mainly on gram-positive bacteria. The mechanism of action is based on the suppression of the activity of peptidoglycan synthesis enzymes, which leads to bacterial growth arrest, as well as the activation of enzymes that hydrolyze peptidoglycan, which weakens the covalent bonds of the cell wall. Growing cells stop dividing, increase, swell and disintegrate with the formation of small particles.
2.3 Dihydrostreptomycin sulfate is an antibacterial agent from aminoglycosides group. It is bactericidal against most Gram-negative bacteria. The antibacterial effect is based on the binding of the streptomycin molecule to the subparticles of microbial cell ribosomes, which leads to the formation of defective proteins, arrest of growth and development of the microbial cell. Unlike benzylpenicillin procaine, dihydrostreptomycin sulfate effects microorganisms that are both in the stage of reproduction and resting.
2.4 Benzylpenicillin procaine and benzylpenicillin benzathine are benzylpenicillin salts that are almost insoluble in water. With intramuscular and subcutaneous administration, a depot is created at the injection site; it is slowly hydrolyzed to form benzylpenicillin, which is gradually absorbed and maintains therapeutic blood concentration for a long time.
Dihydrostreptomycin sulfate is rapidly absorbed into the blood and slightly binds to serum proteins.
After a single injection, therapeutic blood concentration is detected after 2-3 hours and preserved up to 72 hours. The drug passes through the placental barrier. It is metabolized slightly, excreted mainly through the kidneys with urine and in small quantities with milk and bile. In case of impaired liver and kidney function, an increase in the elimination period is possible.

3 Method of administration

3.1 The drug is used to treat cattle, sheep and pigs with diseases of the respiratory system, gastrointestinal tract and genitourinary system, musculoskeletal system (arthritis, laminitis), skin and soft tissue infections,

septicemia, colibacillosis, salmonellosis, streptococcosis, bacterial and enzootic pneumonia, atrophic rhinitis, MMA syndrome and other diseases caused by pathogens sensitive to the components of the drug.
3.2 The drug is administered intramuscularly or subcutaneously, once in the following doses:
- cattle, sheep and pigs - 0.5-1.0 ml per 10 kg of animal body weight.
If necessary, it is possible to re-administer the drug after 72 hours.
The maximum volume of drug administration in one site shall not exceed 15 ml for adult cattle, 10 ml for pigs, 5 ml for calves and sheep, and 2.5 ml for piglets.
Before use, the vial with the drug should be heated in a water bath to animal body temperature and shaken thoroughly until a homogeneous suspension is formed.
3.3 In the recommended doses, the drug does not cause adverse events. In some cases, swelling may occur at the injection site, which is eliminated spontaneously.
3.4 The drug shall not be used to treat animals with increased individual sensitivity to the components of the drug. In case of allergic reactions, the use of the drug is discontinued and antihistamines and symptomatic treatment is prescribed.
3.5 The drug shall not be used concomitantly with other antibiotics with oto- and nephrotoxic effects (aminoglycosides and others), antibiotics of amphenicols, macrolides, tetracyclines, polymyxins and lincosamides groups, loop-shaped diuretics (furosemide). Do not use in animals under general anesthesia with magnesium preparations or muscle relaxants.
3.6 It is not recommended to use the drug in the last third of pregnancy. In pregnant females, the drug shall be used with caution, at the discretion of the veterinarian.
3.7 Slaughter of animals for meat is allowed no earlier than 28 days after the last administration of the drug, and the use of by-products for food purposes no earlier than 45 days. Meat and by-products from animals compulsorily slaughtered before the expiration of the specified period may be used to feed carnivores.
Milk is used for food by people no earlier than 7 days after the last use of the drug. Before the expiration of the specified period, milk is fed to animals after boiling.

4 Preventive measures

4.1 When working with the drug, personal hygiene measures and safety regulations shall be observed.

5 Claim procedure

5.1 In case of complications after the use of the drug, its administration is discontinued, and the consumer shall contact the State Veterinary Institution according to the location.
Veterinary specialists of this institution shall study the compliance with all the rules for the use of the drug in accordance with the instructions. When confirming the detection of an adverse effect of the drug on the animal’s body, veterinary specialists shall take samples in the required quantity for laboratory tests, develop a sampling report and send it to the State Institution “Belarusian State Veterinary Center” (220005, Minsk city, 19A Krasnaya str.) for confirmation of compliance with regulatory documents.

6 Full name of the manufacturer

6.1 Limited Liability Company “Stovek”, the Republic of Belarus, 222660, Minsk region, Stolbtsy, 2 Zadvoryenskaya str.
The Instructions for use of the drug was developed by the employees of Stovek LLC (Piotukh A.S., Plomodjalov D.A.)

/Stamp:
Department of Veterinary and Food
Supervision of the Ministry of Agriculture and
Food of the Republic of Belarus
Council for Veterinary Drugs
APPROVED,
Chairman /signed/
Secretary /signed/
Expert /signed/
12.12.2022 minutes No. 124/