PRODUCT INFORMATION

BUPARVEX

BENEFITS

Buparvex, a sterile solution for injection indicated for the treatment of all forms of bovine theileriosis.

Buparvex is used to treat clinical cases of theileriosis. It may also be used during the incubation period to prevent clinical disease in animals that are known to be infected but not yet showing clinical signs.

Buparvaquone kills theilerial schizonts (in lymphoid cells) and piroplasms (in red blood cells) and it suppresses pre-schizont stages during the incubation period of the disease.

Buparvaquone kills the parasites through its actions on their mitochondrial electron transport (respiratory) system. Usually it does not completely eliminate the infection so cured animals continue to carry sub-clinical levels of infection.

Uncomplicated cases of theileriosis usually respond quickly to treatment with Buparvex.

PACKAGING

LIST NO.	UNIT PACKAGE	CASE SIZE
1BUP001	50ml	12

See reverse side for full indications, administration and dosage

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Bimeda®

BUPARVEX

PRESENTATION
A ruby-coloured solution containing 50mg buparvaquone per ml

TARGET PRESENTATION
Cattle

INDICATIONS
Buparvex is indicated for the treatment of all forms of bovine theileriosis.

North Africa, Middle East, Southern Europe, India and Asia – Mediterranean or Tropical Theileriosis caused by *Theileria annulata.*

Eastern Africa – East Coast fever (ECF) caused by *Theileria parva. T. parva* also causes Corridor Disease of cattle in areas populated by the African buffalo (*Syncerus caffer*) and local conditions such as January disease and Zimbabwean theileriosis.

Buparvex is used to treat clinical cases of theileriosis. It may also be used during the incubation period to prevent clinical disease in animals that are known to be infected but not yet showing clinical signs. Buparvaquone kills theilerial schizonts (in lymphoid cells) and piroplasms (in red blood cells) and it suppresses pre-schizont stages during the incubation period of the disease. Buparvaquone kills the parasites through its actions on their mitochondrial electron transport (respiratory) system. Usually it does not completely eliminate the infection so cured animals continue to carry sub-clinical levels of infection.

ADVERSE EFFECTS
Localised swelling may occur at injection sites but it resolves in a few days. Buparvaquone is very safe so over-dosage is unlikely to cause significant adverse effects.

WARNINGS/PRECAUTIONS
Buparvex must be administered only by the intramuscular route. Intravenous injection may cause severe shock. Buparvaquone is poorly mobilised after subcutaneous injection and its curative effect is greatly reduced.

DOSAGE AND DIRECTIONS FOR USE
1ml of Buparvex per 20kg bodyweight (equivalent to 2.5mg buparvaquone per kg) injected intramuscularly is usually sufficient to cure moderate cases of theileriosis. More advanced cases may require one or more additional, similar injections. These should be given with an interval of two or three days, as clinically indicated. Injection should be given into the neck muscles because the drug mobilises best from this site. No more than 10ml of Buparvex should be injected into a single site.

If Buparvex is used to suppress theileriosis during its incubation period, a single dose of 1ml per 20kg bodyweight, injected into the neck muscles, is usually sufficient to prevent the development of clinical signs.

WITHDRAWAL PERIODS
Milk for human consumption should not be taken from animals treated with Buparvex until at least 48 hours after treatment. Milk from animals treated with Buparvex is safe for consumption by calves.
Animals should not be slaughtered for human consumption until at least 42 days after treatment with Buparvex.

FURTHER INFORMATION ABOUT BUPARVEX AND THE TREATMENT OF THEILERIOSIS
Specificity of action of Buparvex. Buparvaquone is effective only against theileriosis and a few closely related diseases. It has no clinically significant effect on other tick-transmitted disease such as anaplasmosis, babesiosis and heartwater. It has no antibacterial, antiviral or anthelmintic action.

Diagnosis of theileriosis. The clinical signs of theileriosis include high fever, swollen superficial lymph nodes, nasal discharge, coughing and other signs of pulmonary oedema, and petechial haemorrhages on mucous membranes. Grossly protuberant eyeballs are a feature of *T. annulata* infections in some areas; this sign is not typical of *T. parva* infections. Often, the first sign of theileriosis in lactating cows is a sudden drop in milk yield.

Anaemia is a common sign of theileriosis caused by *Theileria annulata*, particularly in advanced cases. Anaemia is not typical of uncomplicated theileriosis caused by *T. parva*. If anaemia is seen in an animal with ECF, an alternative cause, such as concurrent anaplasmosis, should be suspected.

Clinical diagnosis of theileriosis should be confirmed by examining a stained lymph node biopsy smear for the presence of *Theileria* schizonts within enlarged lymphoid cells (lymphoblasts). The presence of schizonts in a hyperplastic lymph node smear is the most certain indication of clinical theileriosis. A blood smear should also be examined for the presence of intra-erythrocytic piroplasms and other tick-transmitted infections such as anaplasmosis and babesiosis. Large numbers of piroplasms in blood smears indicate advanced theileriosis. Absence of piroplasms from the smear despite the presence of other signs may indicate an early clinical case or an acute case of theileriosis. Small number of piroplasms alone should not be regarded as a positive diagnosis of theileriosis because the piroplasms may be one of the non-pathogenic theilerias that infect cattle, or low-grade parasitaemia typical of an asymptomatic immune carrier of theileriosis.

Immuno-depressive effect of theileriosis. Theileriosis is a lympho-destructive disease. In severe cases more than 90% of lymphoid cells may be destroyed. This results in profound immune-depression. Intercurrent pneumonia and enteritis are common and they must be diagnosed and treated specifically. Immune-competence is usually restored after a few days in cases of theileriosis cured by Buparvex.

Theileriosis can activate the carrier state of anaplasmosis into severe clinical disease. Concurrent theileriosis and anaplasmosis is characterised by profound anaemia, often with only a low parasitaemia of *Anaplasma* organisms. In parts of E. Africa up to 50% of cases of theileriosis may be complicated by concurrent anaplasmosis.

Response to treatment with Buparvex. Uncomplicated cases of theileriosis usually respond quickly to treatment with Buparvex. Temperature falls to normal within one or two days. Other signs, such as pulmonary oedema, anaemia (in cases of Tropical theileriosis) and lethargy usually show improvement within two days.

Moderate cases of theileriosis are usually cured by a single injection of Buparvex.
More severe cases may require additional injections. Additional injections of Buparvex should be given as clinically indicated. If recovery is unexpectedly slow the diagnosis should be checked, particularly for intercurrent conditions. Persistent anaemia may indicate concurrent anaplasmosis or babesiosis. These infections must be treated specifically.

Clinical signs and potentially fatal theileriosis may reappear after apparent clinical cure. Treated animals, therefore, should be kept under observation for relapses for at least three weeks. They should be re-treated promptly if clinical signs reappear.

Cases showing pulmonary signs should be treated additionally with a diuretic such as frusemide. Concurrent anaplasmosis can be treated with products containing imidocarb or tetracycline, babesiosis with products containing imidocarb or diminazene.

Care of treated animals. Animals treated for theileriosis should be nursed carefully, provided with adequate drinking water and food, and subjected to a minimum of stress. Supportive treatment should be considered, particularly for anaemic animals.

Theileriosis is a non-contagious disease, transmitted by ticks. To reduce the risk of transmission of disease, affected animals may be hand-treated to kill ticks, but they should not be subjected to the stress of dipping until they have recovered from theileriosis.

Immunity after treatment. Cured animals are strongly immune to re-infection with the same strain of theileriosis, but they may have only partial protection against other strains. Cured animals do not usually develop theileriosis again unless they are stressed or if the level of disease challenge is very high. Cattle that are cured of East Coast fever are not immune to Corridor disease.

Other immunisations. Theileriosis causes severe but usually temporary damage to the immune system. It is recommended, therefore, that routine vaccinations should be delayed until after the animal has recovered completely from an episode of theileriosis.

Other theilerioses. Various other Theileria parasites infect cattle, including *T. taurotragi, T. orientalis and T.mutans*. Their clinical significance is uncertain, but there are reports of their successful treatment with buparvaquone. Malignant theileriosis of sheep and goats, caused by *T. hirci*, has also been treated successfully with buparvaquone.

STORAGE CONDITIONS AND ANY SPECIAL USER INSTRUCTIONS
Store below 25°C. Protect from light. Store out of the reach of children.