

Clostratox® BCD

Clostridium Perfringens Type C and D Antitoxin, Equine Origin

For use in cattle and sheep as an aid in the prevention of enterotoxemia caused by *Clostridium perfringens* Types C and D. Although *Cl. perfringens* Type B is not a significant problem in North America, the combination of *Cl. perfringens* Type C (beta) and Type D (epsilon) fractions may protect against enterotoxemia caused by *Cl. perfringens* Type B.

Product Numbers

Clostratox® BCD
300 - 250 mL
301 - 100 mL

- **Effective** — Clostratox BCD contains the needed Type C (Beta) and Type D (Epsilon) fractions of antitoxin which neutralize clostridial toxins. The combination of beta and epsilon antitoxins may also provide protection and control of enterotoxemia caused by *Clostridium perfringens* Type B.
- **Immediate Protection** — Concentrated antibodies specific for clostridial toxins begin to neutralize toxins immediately upon entering the bloodstream.
- **Safe and Effective** — Clostratox BCD is tested to assure sterility, safety, and potency. Clostratox BCD is approved for use in cattle and sheep.

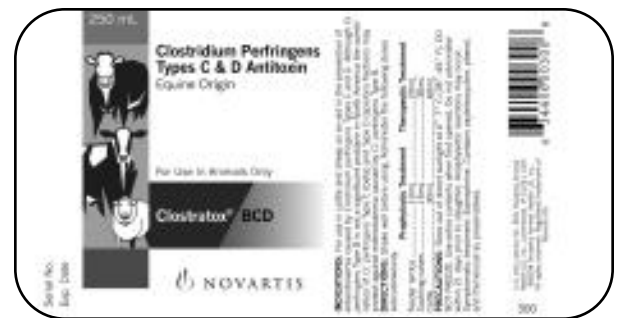


Clostratox® BCD

DIRECTIONS: Shake well before using. Administer the following doses subcutaneously.

	Prophylactic Treatment	Therapeutic Treatment
Feeder Lambs	10 mL	20 mL
Suckling Calves	15 mL	30 mL
Cattle	30 mL	60 mL

PRECAUTIONS: Store out of direct sunlight at 2°-7° C (35°-45° F). DO NOT FREEZE. Use entire contents when first opened. Do not administer within 21 days prior to slaughter. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains oxytetracycline, phenol, and thimerosal as preservatives.



Customer Service
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Technical disease information

Clostridium perfringens

Clostridium perfringens is a common soil inhabitant and is also often found in the intestines of healthy animals. Under favorable conditions, bacteria in the intestines grow rapidly and produce the toxins which cause the various disease symptoms. There are five known types of *Cl. perfringens*: A, B, C, D, and E.

Clostridium perfringens Type B causes lamb dysentery, but it can also affect calves less than three weeks of age. Symptoms include sudden death, listlessness, recumbency, abdominal pain, and a fetid diarrhea that may be blood-tinged. On post-mortem, intestines show severe inflammation, ulcers, and necrosis. The mortality rate approaches 100%. *Cl. perfringens* Type B is not common in North America, but is frequently found in Europe, Southern Africa, and Asia.

Clostridium perfringens Type C causes an acute hemorrhagic enteritis (enterotoxemia) in calves and lambs less than two weeks old, and also in older cattle and sheep on full feed. Affected newborn animals are often from dams producing an abundance of milk. Overfeeding can cause changes in the gut environment which enhance growth and toxin production by the organism. Clinical signs include sudden death, abdominal pain, depression, and possible central nervous system involvement (convulsion, coma). The mortality rate is high, and young animals that do survive are often permanently stunted. Post-mortem signs are dependent on the relative amounts of alpha and beta toxins produced by the bacteria and on the duration of the disease. If alpha toxin predominates, the guts will be hemorrhagic. If beta toxin predominates, there will be evidence of gut necrosis and peritonitis.

“Overeating disease” is caused by *Clostridium perfringens* Type D. The disease is more common in sheep, but is more economically important in cattle. It can affect both young animals and feeders. The disease is often seen in single lambs under three months of age that are nursing high-producing ewes. In feedlot cattle, high concentrate rations, especially if introduced suddenly to an animal accustomed to forage, will cause an abrupt pH drop in the rumen. Fermented grain then passes into the small intestine, where the Type D organisms multiply and produce alpha and epsilon toxins. The alpha toxin produces hemolytic lesions. The epsilon toxin must be activated by trypsin in the small intestine. It then causes necrosis and increased vascular permeability, which results in hemorrhage and edema. Initially there is central nervous system stimulation, followed by soft foci and liquefaction necrosis in the brain. Clinical signs include sudden death, convulsions, posterior paralysis, coma, and possibly diarrhea. At necropsy, the rumen is full of high concentrate feed and may have petechial hemorrhages. There may be excess pericardial fluid, lung fluid, and excess fluid in parts of the small intestines. Often tissues decompose rapidly, which explains why the disease is sometimes called “pulpy kidney” in sheep.

In addition to antibiotics, treatment of these diseases includes subcutaneous injection of **Clostratox BCD**, which contains a high concentration of antibodies against the exotoxins. Symptomatic treatment for diarrhea and dehydration is also indicated. In herds experiencing high morbidity, prophylactic injection of **Clostratox BCD** prior to appearance of symptoms is strongly recommended.