

Tech Specs

Bovine Pili Shield®

Bovine Pili Shield® and Bovine Pili Shield + C

Passive immunity protection in calves against *E. coli* and *C. perfringens* Type C

PRODUCT	BACTERIA	
	<i>E. coli</i>	<i>C. perfringens</i> Type C
Bovine Pili Shield 20 dose/100 dose	✓	
Bovine Pili Shield + C 20 dose/100 dose	✓	✓

Bovine Pili Shield Benefits

1 ML DOSE

Both Bovine Pili Shield and Bovine Pili Shield + C are approved to be given as a single 1 mL dose.

CONVENIENT

With effective immunity in one dose, Bovine Pili Shield can be administered from 8 weeks to 10 months prior to calving. Bovine Pili Shield + C can be administered anytime within 8 to 16 weeks prior to calving. This allows you the flexibility of timing your vaccination program to fit your schedule and avoid stressing close-up cows. Dairy cows can be vaccinated at dry-off.

EXCLUSIVE ADJUVANT

Both Bovine Pili Shield and Bovine Pili Shield + C incorporate the exclusive Xtend® III adjuvant, which provides effective immunity with a single 1 mL dose prior to calving.

EXCELLENT PASSIVE PROTECTION TO THE CALF

Bovine Pili Shield and Bovine Pili Shield + C protect the calf by producing antibodies that are passed through the cow's colostrum to the calf at birth. To assure passive protection to the calf, it is vital that calves receive adequate volumes of colostrum from the dam within the first few hours after birth.

BOVINE PILI SHIELD

***Escherichia Coli* Bacterin**

INDICATIONS: This product has been shown to be effective for the vaccination of healthy pregnant cattle to provide passive immunity in calves against colibacillosis caused by K99 pilated *Escherichia coli*. The duration of immunity for these antigens has not been established. For more information go to productdata.aphis.usda.gov

ADJUVANT: Xtend III

DIRECTIONS: Shake well before using. Administer 1 mL intramuscularly in the neck 8 weeks to 10 months prior to calving. Vaccinate dairy cows at dry-off. It is essential that newborn calves receive colostrum from the vaccinated dam. Revaccinate prior to each subsequent calving.

PRECAUTIONS: Store out of direct sunlight at 2° to 8°C (35° to 46°F). DO NOT FREEZE. Do not mix with other products except as specified on this label. Use entire contents when first opened. In case of human exposure, contact a physician. Do not vaccinate within 60 days prior to slaughter. **WARNING: THIS PRODUCT MAY CAUSE PERSISTENT SWELLING AT THE SITE OF INJECTION.** Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains thimerosal as a preservative.

BOVINE PILI SHIELD + C

***Clostridium Perfringens* Type C-*Escherichia Coli* Bacterin-Toxoid**

INDICATIONS: This product has been shown to be effective for the vaccination of healthy pregnant cattle to provide passive immunity in calves against disease caused by *Clostridium perfringens* Type C and against colibacillosis caused by K99 pilated *Escherichia coli*. The duration of immunity for these antigens is unknown. For more information regarding efficacy and safety, go to productdata.aphis.usda.gov

ADJUVANT: Xtend III

DIRECTIONS: Shake well before using. Administer 1 mL intramuscularly in the neck 8 to 16 weeks prior to calving. Vaccinate dairy cows at dry-off. It is essential that newborn calves receive colostrum from the vaccinated dam. Revaccinate prior to each subsequent calving. This product may be administered to pregnant cows.

PRECAUTIONS: Store out of direct sunlight at 2° to 8°C (35° to 46°F). DO NOT FREEZE. Do not mix with other products, except as specified on this label. Use entire contents when first opened. In case of human exposure, contact a physician. Do not vaccinate within 60 days prior to slaughter. **WARNING: THIS PRODUCT MAY CAUSE PERSISTENT SWELLING AT THE SITE OF INJECTION.** Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine. Contains thimerosal as a preservative.

TECHNICAL DISEASE INFORMATION

E. COLI

Colibacillosis caused by *E. coli* is primarily an enteric disease of calves from birth to 7 days of age capable of producing severe diarrhea. Healthy cows are common carriers of pathogenic *E. coli*, shedding it in their manure, thereby exposing most calves shortly after birth. Unless the calf is armed with some type of innate protection, it remains very susceptible to developing colibacillosis, whereby the bacteria attach to the lining cells of the intestine by means of projections called pili. After attachment, the bacteria colonize and produce toxins that cause the intestine to secrete large amounts of fluid, leading to diarrhea, dehydration and possible death. Additionally, colonization of the *E. coli* creates direct and often permanent damage to the intestinal surface, negatively affecting nutrient absorption. Elanco's Bovine Pili Shield® vaccines target the pili directly, preventing attachment and colonization, preserving intestinal integrity and function, and preventing ensuing toxin production and secretory diarrhea.

C. PERFRINGENS TYPE C

C. perfringens Type C is commonly found in soil and is a regular inhabitant of the intestinal tract of healthy cattle. Type C enterotoxemia is caused by an overgrowth of these bacteria in the calf's intestine and the accompanying toxin production, resulting in severe toxemia with high mortality rates. Calves may be found dead without showing any previous signs or symptoms. Engorgement with milk is often a predisposing factor. If present, signs include bloat, abdominal pain, hemorrhagic diarrhea and extreme weakness.

PREVENTION

Preventing calf scours requires careful management of the dam, the environment and the calf to create a strong immune system and minimize exposure of calves to disease-causing pathogens. A critical step in the program is immunization of the dam with an effective vaccine. This will result in high levels of maternal antibodies passed to the calf through the colostrum it receives after birth. A single dose of either Bovine Pili Shield for *E. coli* or Bovine Pili Shield + C for both *E. coli* and *C. perfringens* Type C prior to calving is a simple and economically effective method of enhancing management efforts and preventing these deadly calf diarrheas.

C. PERFRINGENS TYPE C ANTITOXIN TITERS RESULTS¹

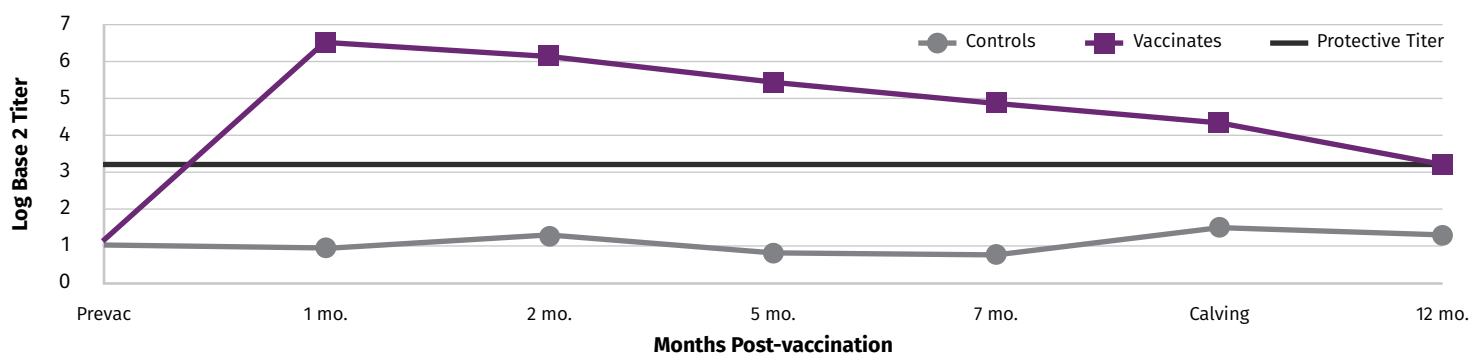
Group (pooled samples)	Titer (IU/mL)
Dam's colostrum	≥ 50
Calf serum (3 days of age)	≥ 10
Calf serum (10 days of age)	≥ 10

E. COLI CHALLENGE RESULTS²

Group	% Mortality
Vaccinates ^a	0%
Controls ^b	70%

^{a,b} Columns with different superscripts differ at $P = 0.0002$.

BOVINE PILI SHIELD 1 ML DOSE TITER SUMMARY³



To learn more about Bovine Pili Shield and Bovine Pili Shield + C, contact your herd health veterinarian, Elanco sales representative or technical consultant, or visit ELANCO.US

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

¹ Elanco Animal Health. Data on file.

² Elanco Animal Health. Data on file.

³ Elanco Animal Health. Data on file.