



Porcine Pili Shield®

Escherichia Coli Bacterin

For use in healthy pregnant swine as an aid in the control of disease in piglets caused by K88, K99, 987P, and F41 piliated *Escherichia coli*.

Product Numbers

Porcine Pili Shield®

#165 - 100 mL

#166 - 20 mL

■ Convenient

Sows and gilts are vaccinated prior to farrowing. Piglets receive protection at birth by nursing colostrum. No extra effort on the producer's part is required to handle or treat the piglets.

■ Broad-spectrum

Over 90 percent of the enterotoxigenic *E. coli* strains isolated from swine are K88, K99, 987P, or F41 types. (**Porcine Pili Shield** contains porcine isolates of all four of these types, which gives broad-spectrum coverage in the vast majority of herds.) The K88 antigen in **Porcine Pili Shield** is a heat labile toxin-producing strain.

■ Gut-level protection

Antibodies against K88, K99, 987P, and F41 types of *E. coli* which are present in the colostrum and milk prevent attachment of enteropathogenic *E. coli* to the gut walls. Without attachment, the bacteria do not produce toxins. Therefore, it is not necessary to incorporate a toxoid into the bacterin.

■ Composition

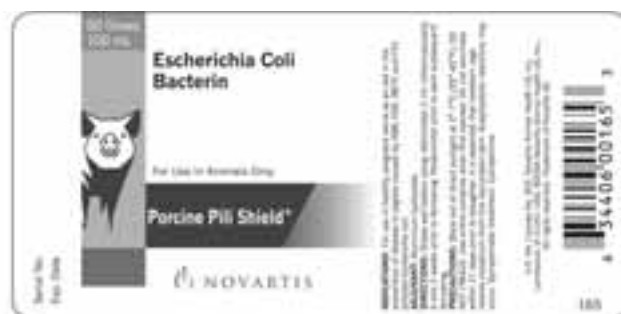
This bacterin contains inactivated cultures of K88, K99, 987P, and F41 piliated *E. coli* adjuvanted with aluminum hydroxide.



Porcine Pili Shield®

DIRECTIONS: Shake well before using. Administer 2 mL intramuscularly 5 and 2 weeks prior to farrowing. Revaccinate prior to each subsequent farrowing.

PRECAUTIONS: Store out of direct sunlight at 2°-7° C (35°-45° F). DO NOT FREEZE. Use entire contents when first opened. Do not vaccinate within 21 days prior to slaughter. It is essential that newborn pigs receive colostrum from the vaccinated dam. Anaphylactic reactions may occur. Symptomatic treatment: Epinephrine.



Customer Service
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Technical disease information

Enteric colibacillosis is a common disease of nursing and weanling pigs caused by colonization of the small intestine by enterotoxigenic strains of *Escherichia coli*. Certain strains of *E. coli* possess fimbria or pili that allow them to adhere to or colonize the epithelial cells of the jejunum and ileum. The common types associated with disease are K88, K99, 987P and F41. Pathogenic strains cause diarrhea, dehydration and acidosis.

Prevention of enteric colibacillosis in pigs can be achieved by vaccination of the sow or gilt prior to farrowing and by maintaining a warm and clean environment for the baby pigs. Timely vaccination of the sow with **Porcine Pili Shield**

to produce maximum output of maternal antibodies in the colostrum and milk is critical in the prevention of enteric colibacillosis. As baby pigs ingest these antibodies from both the colostrum and milk of the sow, there is a steady flow of these antibodies through their gastrointestinal tracts, which will block *E. coli*'s pilus attachments to the intestinal mucosa and prevent their replication.

Porcine Pili Shield contains all the antigens from four selected strains of *E. coli* bearing K99, K88, 987P and F41 pili. This broad-spectrum bacterin has proven effective in swine herds around the world.

Porcine Pili Shield Challenge Trial¹

	Percent Mortality				Average Daily Clinical Score				Average Daily Weight Gain			
	K99	K88	987P	F41	K99	K88	987P	F41	K99	K88	987P	F41
Unvaccinated Controls	49%	62%	57%	33%	2.64	19.6	4.8	11.8	+0.12	-0.07	-0.04	+0.15
Porcine Pili Shield [®] Vaccinates	0%	0%	14%	9%	0.21	0.6	2.4	3.0	+0.43	+0.33	+0.26	+0.25

Thirty gilts were vaccinated with **Porcine Pili Shield** – two, 2-ml doses – five and two weeks prior to farrowing. Their 225 piglets were taken at farrowing and separated into four groups. Each group was challenged orally with one of the four strains (K99, K88, 987P, & F41) of virulent *E. coli*. Twenty-nine gilts were not vaccinated and their 199 piglets were used as controls and challenged in the same way as the vaccinates. Each group was observed over a four-day period.

- 1) The average number of deaths (percent mortality) in the control group was 50.25 percent, whereas only 5.75 percent of the piglets suckling vaccinated dams died.
- 2) The severity of symptoms associated with enteric colibacillosis (average daily clinical score) averaged 9.71 for the controls, contrasted with an average score of 1.55 for the piglets suckling vaccinated dams.

- 3) The average daily weight gain for the controls was 0.095 lbs./day compared with 0.318 lbs./day for the piglets suckling vaccinated dams.

In summary, this study showed that the piglet group, which received colostrum from vaccinated gilts, experienced approximately 1/9 the death losses, 1/6 the severity of clinical symptoms and 3 1/3 times the daily weight gain when compared to the control piglets. Results such as these indicate the bottom line value of using **Porcine Pili Shield**.

1. Data on file at Novartis Animal Health US, Inc.