

# Escherichia Coli Bacterin

## LitterGuard®



**PRODUCT DESCRIPTION:** LitterGuard is for vaccination of healthy pregnant sows and gilts for passive transfer of protective maternal antibodies to their pigs as an aid in preventing neonatal diarrhea caused by enterotoxigenic strains of *Escherichia coli* having the K99, K88, 987P, or F41 adherence factors. The addition of F41 now offers broader protection than previously available. The bacterin is prepared from chemically inactivated strains of *E. coli*. A sterile adjuvant is used to enhance the immune response.

**DISEASE DESCRIPTION:** Enterotoxigenic strains of *E. coli* are among the most important etiologic agents of porcine neonatal diarrhea. Studies have shown that enterotoxigenic *E. coli* isolated from diarrheic pigs have 2 characteristics in common: (1) they have pili, surface antigenic structures which attach the bacteria to cells of the intestinal epithelium; and (2) they express enterotoxins, causing the intestinal cells to secrete body fluids and electrolytes into the gut lumen. The results are diarrhea, dehydration, and in severe cases, death. The 4 major pili types associated with neonatal enteric colibacillosis in swine are K99, K88, 987P,<sup>1</sup> and F41.<sup>2</sup>

**SAFETY AND EFFICACY:** No adverse reactions to LitterGuard were reported in experimental tests, or in clinical trials conducted by independent veterinarians. Anaphylaxis occasionally has been observed in field use (see PRECAUTIONS). Susceptible pigs are protected by receiving colostrum antibodies from vaccinated dams. Thus, adequate and timely consumption of colostrum by the neonatal pig is essential for protection. Controlled challenge-of-immunity tests were conducted involving 110 gilts and sows and their litters. Fractions of LitterGuard were tested for effectiveness separately and in combination. Results showed that vaccination of pregnant swine with 2 doses of LitterGuard significantly reduced the incidence and severity of neonatal diarrhea in their litters.

### DIRECTIONS:

1. *General Directions:* Shake well. Aseptically administer 2 mL intramuscularly or subcutaneously.
2. *Primary Vaccination:* Healthy pregnant swine should receive 2 doses administered 3 weeks apart during the last half of pregnancy. The second dose should be given at least 2 weeks before farrowing.
3. *Revaccination:* Pregnant swine should be revaccinated with a single dose at least 2 weeks before each subsequent farrowing.
4. Good animal husbandry and herd health management practices should be employed.

### PRECAUTIONS:

1. Store at 2°–7°C. Prolonged exposure to higher temperatures may adversely affect potency. Do not freeze.
2. Use entire contents when first opened.
3. Sterilized syringes and needles should be used to administer this vaccine.
4. Do not vaccinate within 21 days before slaughter.
5. As with many vaccines, anaphylaxis may occur after use. Initial antidote of epinephrine is recommended and should be followed with appropriate supportive therapy.
6. This product has been shown to be efficacious in healthy animals. A protective immune response may not be elicited if animals are incubating an infectious disease, are malnourished or parasitized, are stressed due to shipment or environmental conditions, are otherwise immunocompromised, or the vaccine is not administered in accordance with label directions.

### REFERENCES:

1. Moon HW, Isaacson RE, Pohlenz J: Mechanisms of association of enteropathogenic *Escherichia coli* with intestinal epithelium. *Am J Clin Nutr* 32:119–127, 1979.
  2. Moon HW, Kohler EM, Schneider RA, *et al*: Prevalence of pilus antigens, enterotoxin types, and enteropathogenicity among K-88 negative enterotoxigenic *Escherichia coli* from neonatal pigs. *Infect Immun* 27:222–230, 1980.
- Technical inquiries should be directed to Zoetis Inc. Veterinary Services, (888) 963-8471 (USA), (800) 461-0917 (Canada).

For veterinary use only

K88 component under contract with Cetus Corporation.

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