# ButiPEARL Z

ButiPEARL® Z — Optimal delivery of butyric acid and zinc for improved animal gut health.



#### WHY FEED ButiPEARL® Z?

Strengthening the lining of the gut is vital to the health and performance of the animal, as it:

- ✓ Improves nutrient absorption
- Provides a strong barrier against pathogens, parasites, and toxins

If the intestinal barrier is compromised — either through damage of the cells that make up the lining or by breakdown of the tight junctions — harmful substances can cross into the bloodstream. This barrier damage is typical of animals under stress and is often referred to as Leaky Gut Syndrome (LGS).

Providing two powerful nutrients (butyric acid and zinc) directly to the cells that make up the intestinal barrier can lead to a lower incidence of LGS, thereby improving the performance, behavior, and overall health of your animal.

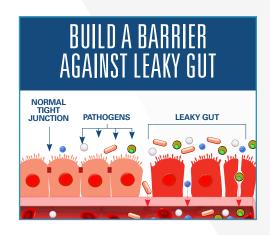
#### THE SCIENCE BEHIND ButiPEARL Z

The unique encapsulation technology used to make ButiPEARL Z ensures that the target nutrients are released slowly throughout the entire intestinal tract of the animal. Through this timely release process, the tight junctions are coated and strengthened — improving the integrity of the intestinal lining.

- Butyric acid functions:
  - Strengthen tight junctions<sup>1,2</sup>
  - Provide energy source used in the growth and development of the intestinal lining<sup>3</sup>
  - Support immune function<sup>4</sup>
  - Reduce gut inflammation<sup>4</sup>
- Zinc functions:
  - Strengthen tight junctions<sup>5</sup>
  - Expedite wound healing<sup>6</sup>

## **ButiPEARL Z BENEFITS**

- Provides two important nutrients that play a vital role in gut health — butyric acid and zinc
- Encapsulation technology allows for release throughout the upper and lower gut
- Improves overall gut health, which can lead to improved performance and wellbeing



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Stress can contribute to leaky gut and breaks down the tight junction proteins in the small intestine allowing for bad bugs such as Clostridium, Salmonella, and Escherichia coli to enter the body of the animal. When this happens, it wreaks havoc on the animal and steels the ability for that animal to perform at peak levels. Let's not forget that show animals are in fact athletes, and we are asking them to perform outside of their norm. Protect your animals against Leaky Gut Syndrome with ButiPEARL Z!





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- 1. Peng L, et al. Butyrate Enhances the Intestinal Barrier by Facilitating Tight Junction Assembly via Activation of AMP-Activated Protein Kinase in Caco. J Nutr. 2009 Sep; 139(9): 1619–1625.

  2. Cell Monolayers. 2009. J. Nutr. 139: 1619-1625; 2. Ma X, et al. Butyrate promotes the recovering of intestinal wound healing
- through its positive effect on the tight junctions. J Anim Sci. 2012. 90: 266-268.
- $3. \, Kotunia\, A, et\, al.\, Effect\, of\, sodium\, butyrate\, on\, the\, small\, intestine\, development\, in\, neonatal\, piglets\, fed\, by\, artificial\, sow.$ J Physiol Pharmacol, 2004, 55: 59-68.
- 4. Guilloteau P, et al. From the gut to the peripheral tissues: the multiple effects of butyrate. 2012 Nutr Res Rev. 23:366–384.
- 5. Zhang B, et al. Zinc prevents Salmonella enterica serovar Typhimurium-induced loss of intestinal mucosal barrier function in broiler chickens. 2012. Avian Pathology. 41: 361–367.
- 6. Lansdown ABG, et al. Zinc in wound healing: Theoretical, experimental, and clinical aspects. 2007. Wound Rep Reg 15:2–16.