



Method to Increase Feed Efficiency by Reducing Endotoxin-Induced GI Tract Inflammation

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method for improving feed efficiency in animals.

Overview

Pathogenic bacteria in the gastrointestinal tract can induce inflammatory responses that negatively affect the ability of animals to efficiently digest food and absorb nutrients. Endotoxin, a characteristic outer membrane component of Gram-negative bacteria, likely induces inflammatory responses by binding to cellular receptors in an animal's gastrointestinal tract and forming a signal transduction complex with the toll-like receptor (TLR4) and CD14.

The Invention

UW-Madison researchers have developed a method for improving feed efficiency in animals by reducing the binding between bacterial endotoxin and its receptors in the animal's gastrointestinal tract. The method involves administering an agent that can reduce the formation of the signal transduction complex of endotoxin, TLR4, and CD14 on cells within the gastrointestinal tract. Preferably, the agent is an antibody against the extracellular domain of TLR4 or CD14. Reducing the binding between endotoxin and its receptors reduces gastrointestinal inflammation, leading to improved gut health, enhanced growth and increased feed efficiency.

Applications

- Improves feed efficiency
- May lead to therapies for humans who are underweight, have eating disorders or have problems maintaining their weight
- May reduce inflammation and prevent further damage during gastrointestinal trauma such as colitis and necrosis
- May be useful to treat inflammatory bowel disease

Key Benefits

- Reduces gastrointestinal inflammation in humans and non-human animals
- Enhances growth
- May reduce the cost of feeding food-producing animals
- May replace antibiotics which are commonly added to animal feed

Tech Fields

- [Animals, Agriculture & Food : Animal nutrition](#)
- [Therapeutics & Vaccines : Inflammation](#)

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