Technology Licensing Opportunity

Non-Confidential Summary

NEW VACCINE AGAINST LAMINITIS
ROI# 13-031

Opportunity:

Researchers at the University of Saskatchewan have developed and tested a new vaccine that has demonstrated effective prophylaxis against the development of laminitis in a carbohydrate overload challenge model in horses.

Background:

Laminitis is a disease of the foot: a failure of attachment between the distal phalanx and the inner hoof wall. As a result the bone is being driven downwards into the hoof.
It was demonstrated that matrix metalloproteinases play a key role in selective degradation of the proteins in the basement membrane (Mungall et al., 2001). The incidence rate of equine laminitis is about 13%.

One of the main causes of laminitis is the overload of carbohydrates into the hindgut that leads to the proliferation of bacterial species responsible for digestion of starch. The development of the vaccine is based on the premise of active microbial involvement in the development of laminitis. The exotoxins released by these microorganisms activate matrix metalloproteinases which promote degradation of the basement membrane proteins. In addition, the exotoxins may have some proteinase activity on their own that can play a role in laminitis development.

Invention:

The vaccine is a combination of Streptococcal SpeB exotoxin and *Geobacillus* thermolysin mixed with an adjuvant. The product was tested in 24 horses challenged by oligofructose overload. Five control horses developed Obel grade 3 lameness, nineteen vaccinated horses did not develop laminitis. Three vaccinated horses developed Obel grade 2 lameness and two vaccinated horses developed Obel grade 1 lameness.

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Researcher profile:

Dr. David Wilson
Professor, Large Animal Surgery, western College of Veterinary Medicine
Research interests: implant biomechanics, developmental orthopedic disease and minimally invasive surgical techniques.

Patent Status:

PCT application is filed on June 19, 2015.

Development Stage:

Pre-clinical. We are interested in collaboration with an industrial partner(s) to bring this product to the market.

For more information, please contact:

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