

Potential for Vaccine Against Johne's Disease



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WARF: P130200US02

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing methods for protecting farm animals against paratuberculosis using mutated *Mycobacteria* strains.

OVERVIEW

Johne's disease, or paratuberculosis, is a chronic and usually fatal wasting disease that is found worldwide and impacts more than half of the dairy herds in the U.S. alone. It costs the ruminant industries more than \$200 million every year in reduced milk production and premature culling.

The microorganism responsible for the disease is a *Mycobacterial avium* subspecies called *M. paratuberculosis* (*MAP*). The bacterium survives within animal macrophage cells using mechanisms not fully understood. The current vaccine does not protect against severe infection or prevent the disease from being spread through feces.

THE INVENTION

UW-Madison researchers have developed *MAP* strains with mutated global gene regulators (GGRs) that may be utilized in a vaccine against Johne's disease.

GGRs are proteins needed for initiating RNA synthesis, for example, sigma factors and transcriptional regulators. By deleting, inactivating or reducing some key GGR sequences in *MAP* bacteria, non-virulent strains could be produced and administered to animals to confer immunity.

APPLICATIONS

- Prevention and treatment of Johne's disease

KEY BENEFITS

- May lead to new vaccine

THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.



- Could produce strong immunity and prevent fecal transmission
- Could lead to methods for preventing and treating Crohn's disease in humans, which may be linked to Johne's disease

ADDITIONAL INFORMATION

Related Technologies

[For more information about vaccine candidates against Johne's disease, see WARF reference number P05446US.](#)

Publications

Hsu C.Y., Wu C.W. and Talaat A.M. 2011. Genome-Wide Sequence Variations Among Mycobacterium Avium Subspecies Paratuberculosis: A Better Understanding of Johne's Disease Transmission Dynamics. *Front. Microbiol.* 2, 236.

Tech Fields

Pharmaceuticals & Vitamin D - Vaccines

Agriculture - Animal health

Veterinary - Livestock

CONTACT INFORMATION

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842.

