

UNIVERSITY OF WYOMING

Cooperative Extension Service

Communications and Technology
Department 3354
1000 E. University Ave.
Laramie, WY 82071
(307) 766-2540 • fax (307) 766-3998 • www.uwyo.edu

For Immediate Release

Contact: Robert Waggener, Editor
Phone: (307) 766-3571
E-mail: robertw@uwyo.edu

Date: June 23, 2005

Editor's note: Photos available upon request

Study aims to find new vaccine to help control brucellosis

University of Wyoming researchers and a Wyoming Game and Fish Department wildlife disease specialist hope to find a new vaccine that could be used to help control brucellosis in cattle, elk and bison.

Although a vaccine exists to immunize against brucellosis, inconsistent potency, protection and safety across susceptible host species suggest the need for an improved vaccine, according to the three investigators who plan to carry out their research in a College of Agriculture laboratory for at least three years.

The researchers will use new In Vivo-Induced Antigen Technology (IVIAT) in their attempt to identify novel *Brucella abortus* in vivo-induced genes, said the principal investigator, Assistant Professor Gerry Andrews with the Department of Veterinary Sciences.

B abortus is the bacterium that causes fetal abortion in domestic livestock as well as elk and bison. It is a pathogen prevalent in Wyoming and consequently has become a major agricultural concern with the state.

The other team leaders are Assistant Professor Larry Goodridge of the Department of Animal Science and William “Hank” Edwards, a Game and Fish wildlife disease specialist stationed on the UW campus.

“This research offers an innovative and unique approach to vaccine development. The need for an effective vaccine is of the utmost importance if we are to solve the brucellosis problem in northwestern Wyoming,” Edwards said.

The project received funding this fiscal year from the Wyoming Agricultural Experiment Station’s Competitive Grants Program.

In their abstract, the researchers state that, while several gene products associated with *Brucella* virulence have been described, the majority have been identified with in vitro-grown bacteria.

“Thus, host factors which ‘switch on’ some virulence loci in vivo may not be present in laboratory-grown cultures,” they say.

They say IVIAT technology is likely to represent a low-risk approach with potential “multiple high payoffs” to the identification, characterization and comparative analysis of host-unique, in vivo-expressed virulence genes.

“IVIAT ‘profiling’ may potentially lead to more applicable bacterial targets for vaccine candidates and/or diagnostics for brucellosis,” they stated. IVIAT provides a simple, fast and sensitive method for identifying potentially important new targets for use in the diagnosis and prevention of infectious diseases.

Team members state in their abstract that the potential of selected *Brucella* proteins for use as new vaccine candidates will first be evaluated in laboratory mice. If that research proves successful, testing could then take place in large ruminants.

On the Web: <http://webdevfp.uwyo.edu/vetsci/Faculty.asp>

###