

Statement of Requirement

Project: Therapeutic use of bovine cytokines on viral pathogens involved in respiratory diseases in cattle

GENERAL INFORMATION

- 1.0 Scope of Work:** This study is designed to evaluate the therapeutic effectiveness of cytokines delivered through a replication-defective human adenovirus type 5 in cattle against bovine viral diarrhea virus challenge
- 2.0 Background:** Bovine respiratory disease complex (BRDC) is considered the most costly disease facing cattle producers today. BRDC is multifactorial in origin and results from an interplay of infection by multiple viral and bacterial pathogens, stress, immune dysfunction and environmental factors. Among viral pathogens, bovine viral diarrhea virus (BVDV) is the most important and costly pathogen involved in BRDC. Despite the availability of multiple BVDV vaccines, detection of BVDV infections in cattle herds (even among vaccinates) highlighted that the development of novel BVDV control strategies is needed. Here we propose to deliver an experimental bovine cytokine through a replication-defective human adenovirus type 5-based delivery system (hAd5) which is expected to provide protection against BVDV infection in calves

CONTRACTOR REQUIREMENTS

- 3.0 Technical Requirements/Tasks:** This project requires the purchase of 24 Holstein or Holstein/cross calves. For this project we require the following of the calves:
- 1) Calves must be BVD-negative for antibody and antigen
 - 2) Calves must be Mycoplasma bovis negative
 - 3) Calves must be Colostrum Deprived
 - 4) Calves must not have received milk replacer for the first 48 hours
 - 5) Calves must have been housed individually
 - 6) Calves must have been dewormed
 - 7) Calves must be free of ring-worm
 - 8) Calves must be sound of foot and body
 - 9) Calves must be a minimum of 6 weeks and a maximum of 8 weeks old when delivered
 - 10) Calves must be available for delivery onsite on or near July 20th, 2023
 - 11) Animals must be transported directly to NADC with no other animals in the trailer.
 - 12) All calves must be comparable in size across the group and of the same breed or mixed dairy/beef breed
 - 13) Certificate of Veterinary Inspection required on all animals.
- 4.0 Government Furnished:** N/A
- 5.0 Technical Point of Contact:** Should there be technical or scheduling questions, please contact Denise Chapman 515-231-5453
- 6.0 Delivery Location:**
USDA, 1920 Dayton Avenue, Ames, IA 50010