Attachment 001 Statement of Work (SOW)

Project: *Phage library screening to identify peptide sequences binding bovine and porcine receptors*

GENERAL INFORMATION

1. **Scope of Work:** This Statement of Work is to procure phage library screening service contract to identify peptide sequences binding bovine and/or porcine receptors

   Service Contract:
   The service plan includes the following:

   1. Phage display libraries and target protein QC including peptide library expansion if needed.
   2. Negative and positive phage library selection.
   3. Sequencing and affinity testing of selected blue-plaque clones.

   4. Deliverables: 6–12 candidate peptide sequences, together with the corresponding amino acid sequences, nucleotide sequences, and raw sequencing data.

2. **Background:** Foreign Animal Disease Research Unit, USDA-ARS at the National Bio and Agro-Defense Facility (NBAF) develops countermeasures such as vaccines for the prevention and control of foreign animal diseases (FAD). Currently, there are several drawbacks of available FAD vaccines. Phage peptide display library screening is a powerful technology that can be used to identify peptides that can bind to specific receptors involved in the immune response. The discoveries of the peptide sequences can be implemented in the vaccine designs to improve the vaccine efficacy.

CONTRACTOR REQUIREMENTS

3. **Technical Requirements/Tasks:**

   3.1 – To QC the proteins provided by the USDA scientist.
   Period of performance: 12 days after receiving proteins.
   3.2 – To purchase two different phage display libraries for the screening of each protein provided by USDA-ARS scientist.
   3.3 – Target immobilization of provided proteins.
   Period of performance: 14 days after QC.
   3.4 – Perform 3 rounds of negative and positive selection, followed by amplification of the recovered phage
   Period of performance: 28 days after target immobilization.
   3.5 – Select at least 30 blue-plaque clones for and affinity testing with ELISA and sequencing.
   Period of performance: 35 days after library screening.
   3.6 – Deliverables: 6–12 candidate peptide sequences, together with the corresponding amino acid sequences, nucleotide sequences, and raw sequencing data
   3.7 – To provide a minimum of 50,000 NGS reads per protein per library solely to the USDA scientist.
   Period of performance: 49 days after receipt of order and after receipt of the remaining final payment.

3.8 – To renounce the IP of all sequences discovered in the project and not to disclose the information on this service to third parties.

4. **Government Furnished:**
   4.1 – To provide up to three purified His-tagged proteins that are expressed in cultured mammalian cells with the quantities requested by the contractor.
   4.2 – The USDA scientist owns IP of all sequences discovered in the project
   4.3 – To provide 50% of the payment upon the order of the service and remainder net 30.