

PLUM ISLAND ANIMAL DISEASE CENTER (PIADC)



Location: Orient, NY

Core Competencies: Diagnostics, Training, North American Vaccine Bank, Bioforensics, Basic and Applied Research, Vaccines and Biological Countermeasures, and Vaccine Licensure

Accreditations/Registrations: USDA APHIS Select Agent Permit, Drug Enforcement Administration Controlled Substance Registration, APHIS lab is a reference lab with the Food and Agriculture Organization and World Organisation for Animal Health for FMD

Key Customers: U.S. Livestock Producers, National Veterinary Stockpile, National Animal Health Laboratory Network, FBI, USDA ARS and APHIS, Centers of Excellence, Private Industry, and Academia

Since 1954, the Plum Island Animal Disease Center (PIADC) has served as the front line of the nation's defense against diseases that could devastate markets for livestock, meat, milk, and other animal products. PIADC is the only laboratory in the nation that can conduct initial diagnostic testing for foot-and-mouth disease (FMD). The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) provides this service and develops novel diagnostic tools. In addition, APHIS conducts training for federal and state veterinarians who serve as the first responders in a potential outbreak of a foreign animal disease (FAD). The USDA's Agricultural Research Service (ARS) conducts research on high-consequence FADs at PIADC and develops diagnostic tools, vaccines, and other means for preventing FADs. The Department of Homeland Security's (DHS) Science and Technology Directorate takes vaccines developed by ARS, academia, and industry through the regulatory process to develop and license new vaccines and diagnostics for high-threat FADs.

DHS PIADC Transboundary Animal Disease Countermeasure Development Branch

In partnership with ARS and industry, PIADC performs advanced development of vaccines and other biological countermeasures needed to effectively respond to an incursion of a FAD. Laboratory

diagnostic test development is also conducted in partnership with APHIS. Recent accomplishments include:

- Completed USDA licensing of the first FMD molecular cattle vaccine that can be manufactured in the United States. The vaccine supports USDA APHIS vaccinate-to-live strategy as the absence of specific viral components provides opportunities to develop improved diagnostic tests that differentiate between FMD vaccinated and infected cattle.
- Established a licensable pipeline of molecular vaccine candidates for numerous, additional high-threat FMD virus strains.
- Established a cooperative research and development agreement (CRADA) with a global vaccine manufacturer to improve the FMD molecular vaccine platform for swine.
- Established additional CRADAs with industry partners to support research and development of new countermeasures for other high-consequence FADs.

USDA Animal and Plant Health Inspection Service

USDA APHIS provides FAD diagnostic services for the nation. Recent accomplishments include:

- Designated as an FMD reference lab by the Food and Agriculture Organization of the United Nations and World Organisation for Animal Health.
- Developed a companion diagnostic test for the new molecular FMD vaccine and began validation.
- Developed microarray technology for pathogen discovery.

USDA Agricultural Research Service

USDA ARS provides research services on high-consequence FADs. Recent accomplishments include:

- Developed the first molecular vaccine against FMD (Ad5-FMD) capable of fully protecting cattle and swine against FMD.
- Developed a viral strain that allows safer production of the FMD vaccine that is effective and distinguishes between infected and vaccinated animals.
- Developed a method to protect swine against FMD 24 hours post-vaccination.

Contact

Questions? Email PIADC@dhs.gov for more information.

