

Development of a multiplex Luminex immunoassay for serologic diagnosis and subtyping of swine influenza virus (SIV) infections

► Yohannes Berhane, National Centre for Foreign Animal Diseases, Canadian Food Inspection Agency

A new, innovative diagnostic test was developed to detect, all at once, the presence of four pathogens: SIV, Type 1 and 2 PRRS virus (porcine reproductive and respiratory syndrome), and PCV2 (porcine circovirus).

This test (assay) could replace 4 different assays that are currently being used in diagnostic labs.

Why was this study done?

The Porcine Respiratory Disease Complex (PRDC) has a significant economic impact on North America's swine industry.

It is known that PRDC is caused by the interaction of multiple infectious agents that include Type 1 and 2 PRRS, SIV, PCV2, as well as other bacterial pathogens.

Therefore, researchers aimed at developing a 'multiplex fluorescent microsphere immunoassay,' a type of diagnostic test, to be used to identify and classify the antibody response to SIV infections as either a H1 or H3 subtype. Initially, this project focused on SIV, but it was modified to include other viruses that are part of the PRDC.

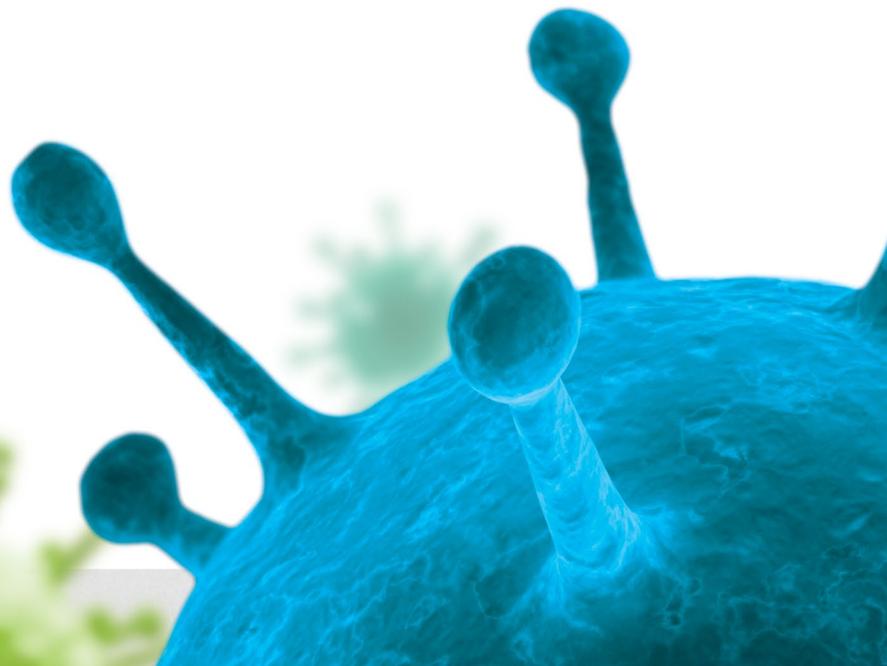
What was done and what was the outcome?

A multiplex fluorescent immunoassay to detect antibody response to SIV, PRRSv type 1 and 2 and PCV2 was successfully developed and validated.

This new assay is now commercially available. While more work will be needed to classify the antibody response to SIV as either a H1 or H3 subtype, it is now possible to detect antibodies due to infection caused by almost all of the viruses involved in the PRDC. The assay should save labor, time, and cost compared to traditional methods.

Collaborators

Shawn Babiuk	National Centre for Foreign Animal Diseases, Canadian Food Inspection Agency
John Pasick	National Centre for Foreign Animal Diseases, Canadian Food Inspection Agency
André Broes	Biovet
Davor Ojkic	University of Guelph





Additional project information

Click on the links below for further information on this project

R&D Featured Articles—by Geoff Geddes for Swine Innovation Porc

Articles may be found at: <http://www.swineinnovationporc.ca/resources-e-newsletters.php>

- [Health Studies Proceeding at Fever Pitch](#)
- October 2019 (Vol. 4, No. 16.)
- [Better Disease Detection is Nothing to Sneeze At](#)
- September 2018 (Vol. 3, No. 13.)

Financial support for this project

This project is part of the Swine Cluster 2 (2013-2018) research program, made possible through financial support from Agriculture and Agri-Food Canada, eight provincial pork producer organizations and over 30 industry partners. [Click here to learn more about the financial partners for Swine Cluster 2.](#)