Simultaneous detection of antibodies to five Actinobacillus pleuropneumoniae serovars using bead-based multiplex analysis - DTU Orbit (18/11/2019)

Simultaneous detection of antibodies to five Actinobacillus pleuropneumoniae serovars using bead-based multiplex analysis

We have developed and made a preliminary validation of a bead-based multiplexed immunoassay for simultaneous detection of porcine serum antibodies to Actinobacillus pleuropneumoniae serovars 1, 2, 6, 7, and 12. Magnetic fluorescent beads were coupled with A. pleuropneumoniae antigens and tested with a panel of serum samples from experimentally infected pigs and with serum samples from uninfected and naturally infected pigs. The multiplex assay was compared to in-house ELISAs and complement fixation (CF) tests, which have been used for decades as tools for herd classification in the Danish Specific Pathogen Free system. Assay specificities and sensitivities as well as the corresponding cutoff values were determined using receiver operating characteristic (ROC) curve analysis, and the A. pleuropneumoniae multiplex assay showed good correlation with the in-house ELISAs and CF tests with areas under ROC curves ≥ 0.988. Benefits of multiplexed assays compared to ELISAs and CF tests include reduced serum sample volumes needed for analysis, less labor, and shorter assay time.

General information
Publication status: Published
Organisations: National Veterinary Institute, Diagnostic & Development, Innate Immunology
Pages: 797-804
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Journal of Veterinary Diagnostic Investigation
Volume: 29
Issue number: 6
ISSN (Print): 1040-6387
Ratings:
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.21 SJR 0.621 SNIP 0.842
Web of Science (2017): Impact factor 1.219
Web of Science (2017): Indexed yes
Original language: English
Keywords: Actinobacillus pleuropneumoniae, magnetic beads, multiplex analysis, swine
DOIs:
10.1177/1040638717719481
Source: FindIt
Source ID: 2372262881
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review