ELISA for diagnosing Lawsonia intracellularis infections in horses - 1798

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Technology description

Office of Technology Commercialization

Overview

The bacteriumLawsonia intracellulariscauses proliferative enteropathy in mammals, including horses. Clinical signs of equine proliferative enteropathy (EPE), which is usually seen in weanlings or young yearlings, include anorexia, fever, lethargy, depression, peripheral edema, weight loss, colic, and diarrhea. EPE transmission occurs through the ingestion ofL. intracellularis-contaminated fecal material from wild or domestic animals, and the infection has been shown to be widespread on many farms.

Invention

UK researchers have developed an ELISA-based kit for the detection ofL. intracellularisin horses. A blood sample is centrifuged to separate serum from whole blood cells, and the isolated sample is analyzed for the presence ofL. intracellularis-specific antibodies using an ELISA.

UK researchers have also used this method for evaluating the ability of candidate vaccines to elicit an immune response against aL. intracellularisinfection in a subject. A test vaccine is administered to a horse, and it is given a sufficient time to develop an immune response to the vaccine before a blood sample is taken. The vaccine is determined to be effective at eliciting an immune response ifL. intracellularis-specific antibodies are detected in the blood sample and the subject does not exhibit symptoms ofL. intracellularisinfection or signs of clinical disease.

Related Publications

Page, A. E., L. Henderson, H. F. Stills, Jr. and D. W. Horohov (2015). "The Possible Role Mares Play in the Epidemiology of Equine Proliferative Enteropathy."Journal of Equine Veterinary Science35(2): 116-123.

Page, A. E., A. T. Loynachan, U. Bryant, H. F. Stills, Jr., A. A. Adams, C. J. Gebhart, N. Pusterla and D. W. Horohov (2011). "Characterization of the interferon gamma response to Lawsonia intracellularis using an equine proliferative enteropathy challenge (EPE) model."Vet Immunol Immunopathol143(1-2): 55-65.

Page, A. E., H. F. Stills, Y. Chander, C. J. Gebhart and D. W. Horohov (2011). "Adaptation and validation of a bacteria-specific enzyme-linked immunosorbent assay for determination of farm-specificLawsonia intracellularisseroprevalence in central Kentucky Thoroughbreds."Equine Vet J43 Suppl 40: 25-31.

Page, A. E., H. F. Stills, Jr. and D. W. Horohov (2015). "The effect of passively acquired antibodies on Lawsonia intracellularis infection and immunity in the horse."Equine Vet J47(6): 655-661.

Application area

veterinary medicine
equine medicine

Advantages

detects exposure toLawsonia intracellularisantigens
verifies efficacy ofLawsonia intracellularisvaccination

Institution

University of Kentucky

Inventors

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