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Immunoreactive Antigens of Mycoplasma haemofelis and Development of an Immunoassay

Identification of key Mycoplasma haemofelis peptides allows for the development of a standardized, recombinant-antigen-based immunoassay to reliably detect infection in cats.

Mycoplasma haemofelis is a hemotropic pathogen that causes acute and chronic diseases in cats. Distributed worldwide, this parasite has a significant impact on the health and well-being of cats. Acute infection frequently causes severe anemia in cats that is sometimes fatal. It has the ability to evade the immune response of the host and successfully establish chronic infection. Despite an intense immune response and/or antibiotic treatment, cats often remain asymptomatic carriers following infection. Growing this parasite in cultures is not possible; the only source of antigen for an immunoassay is whole parasites harvested from an infected cat, which is not a convenient source and preparations of whole cell or membrane antigens are difficult to standardize. This hampers the development of an immunoassay.

Researchers at Purdue University have developed an expression library of M. haemofelis, identified immunodominant antigens by clones in the library, and generated recombinant proteins. The detection of immunoreactive antigens in the expression library of M. haemofelis and subsequent production of recombinant proteins of these genes will provide a readily available and renewable antigen source for development of serologic assays and vaccine production. The expression and purification of these proteins is easy, allowing production in large quantities without infecting a cat. The antigens provide the basis of a diagnostic assay for detecting antibodies present in infected animals, allowing for a sensitive, rapid, in-house, laboratory diagnosis of Mycoplasma haemofelis infection in cats.

Advantages:

-Rapid diagnosis

Technology ID

65607

Category

Biotechnology & Life Sciences/Biomarker Discovery & Diagnostics

Agriculture, Nutrition, & AgTech/Livestock & Animal Health Solutions

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-Renewable

-Standardized

-Production of large quantities

-No longer requires infecting cat

Potential Applications:

-Veterinary

-Diagnostic

-Vaccine

TRL: 3

Intellectual Property:

Provisional-Patent, 2010-10-15, United States | Provisional-Patent, 2010-10-29, United States | Provisional-Patent, 2010-11-01, United States | PCT-Patent, 2011-10-13, WO | NATL-Patent, 2011-10-13, Canada | NATL-Patent, 2011-10-13, European Patent | NATL-Patent, 2011-10-13, Mexico | NATL-Patent, 2013-04-12, United States

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