Antigens for Borrelia Infection Diagnosis and Prevention

Tech ID: 18751 / UC Case 2007-408-0

BACKGROUND

Lvme disease is the most frequently reported arthropod-borne disease in the United States and Europe. Serological assays are the most common laboratory tests used to confirm or support a diagnosis based on clinical features and epidemiological circumstances. Direct detection of the organism by cultivation, histology of biopsy, or by an approved and validated polymerase chain reaction assay is uncommonly used. These direct detection methods, while generally preferable to serological assays for definitive confirmation of a clinical diagnosis, will not likely become widely used for the foreseeable future. This is because of the paucity or absence of organisms in most specimens, even during active infection. In our opinion, assays for antibodies to B. burgdorferi will remain the most common method for laboratory-based diagnosis.

TECHNOLOGY DESCRIPTION

The invention comprises novel Borrelia antigents to detect and monitor Lyme disease. Further, these antigens can be used for vaccine development.

While the initial studies have been done on B. burgdorferi and patients and reservoir hosts from the U.S., we anticipate that assays based on orthologous proteins in other Borrelia species could be implemented in Europe and Asia for Lyme disease on those continents and also for specific assays for antibodies to relapsing fever Borrelia species.

APPLICATIONS

There are a variety of different platforms that could be suitable of use for the novel antigens such as: - to detect and quantitate Lyme-specific antibodies (diagnostics) - to detect Lyme-specific antigens (diagnostics) - vaccine to immunize humans or companion animals, such as dogs and horses, against various Borrelia species - vaccine to immunize reservoir hosts, such as Peromyscus leucopus, in a formulation suitable for field delivery. The vaccine could be purified protein (either lipidated or non-lipidated) or in a live vector; such as a poxvirus suitable for application under field conditions. The antigen could be alone or in combination with another antigen.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,182,412	11/10/2015	2007-408

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Diagnostics
  - Therapeutics
- **Research Tools**
  - Screening Assays

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