A vaccination strategy against Chlamydia and other sexually transmitted diseases

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Materials & Chemicals**
  - Biological
- **Medical**
  - Disease: Infectious Diseases
  - Disease: Kidneys and Genito-Urinary System
  - Vaccines
- **Security and Defense**
  - Other
- **Veterinary**
  - Vaccines

BRIEF DESCRIPTION

No vaccines exist against the common sexually-transmitted disease, Chlamydia. The current invention is a novel vaccination formulation wherein fragments from two different microbial proteins, one each from a Chlamydia species and a Neisseria species are fused together. This novel fusion protein is proposed as a robust vaccine to provide protection against Chlamydia.

FULL DESCRIPTION

In the US alone, over 1 million cases of Chlamydia are reported each year. Increasing prevalence of Multiple-Drug Resistant Chlamydia is rendering antibiotic treatment increasingly ineffective. Furthermore, there is no effective vaccine on the market. Current experimental vaccines against Chlamydia use a complete protein from the pathogen as the vaccine. The properties of this protein include low solubility, low stability, and the need for detergent solubilization during purification – consequently resulting in a relatively ineffective vaccine.

The current invention circumvents these problems by using a mix-and-match approach of combining proteins - a specific sub-region from this same Chlamydia protein and the entire protein from a different Neisseria species. This fusion protein has the potential to be a very effective vaccine against Chlamydia

ADVANTAGES

§ By design, only a fragment of the Chlamydia protein is included in the protein fusion so that expression and purification steps are easier, and less expensive than for the whole protein.

§ Careful choice of the Chlamydia protein fragment, and fusion to the Neisseria protein, vastly increase likelihood of a robust immune response and an effective vaccine.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,987,346	06/05/2018	2017-205

STATE OF DEVELOPMENT

Protocols for recombinant protein expression from an E. coli vector, purification, and vaccine administration in mice are already available in order to establish proof-of-concept for vaccine design.

RELATED MATERIALS

» Cheng, C.; Pal, S.; Tifrea, D.; Jia, Z.; and de la Maza, L. M. Microbes Infect. 2014, 16, 244-52. - 03/01/2014

RELATED CASES

2017-205-0

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