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Safe and Potent Vaccines against Tularemia

Tech ID: 20456 / UC Case 2009-655-0

SUMMARY

UCLA scientists have developed a method to produce a tularemia vaccine for humans and animals. The currently used vaccine, *F.tularensis* Live Vaccine Strain (LVS) is toxic, unstable, and poorly characterized. This new vaccine overcomes these major drawbacks.

BACKGROUND

Tularemia is a disease caused by the bacterium *Francisella tularensis*, one of the most infectious pathogenic bacteria known to affect both animals and humans. Although natural infections of *F. tularensis* have become less of a threat, the ease with which this bacterium can be manufactured and disseminated, its high infectivity, and high mortality when transmitted by the respiratory route remain a major concern. For that reason, the CDC has classified *F. tularensis* as a Category A bioterrorism agent. This biological agent has long been considered a potential biological weapon, and there are indications suggesting its use during World War II. It is believed that if used as a biological weapon, an aerosol release would have the greatest adverse effect resulting in a highly fatal pneumonia. To protect against potential use of this agent as a bioterrorist weapon, a safe, well-characterized, stable, and effective vaccine against *F. tularensis* is needed.

INNOVATION

The present innovation consists of a method for producing a vaccine, and a new vaccine for preventing tularemia in humans and animals. This vaccine utilizes a genetically defined attenuated mutant of the *F.tularensis* Live Vaccine Strain (LVS) to prevent *Francisella tularensis* infection. Unlike currently used LVS, which is not approved for general use, this new vaccine is non-toxic, stable, and well-characterized.

APPLICATIONS

> Prevent infection caused by Francisella tularensis, the agent of tularemia.

ADVANTAGES

- Non-toxic, more stable, and better characterized than LVS vaccine
- Efficacy is comparable to LVS
- Highly attenuated in comparison with its LVS parent.

STATE OF DEVELOPMENT

The new vaccine has been tested in animals.

PATENT STATUS

| Country | Туре | Number | Dated | Case |
|--------------------------|---------------|-----------|------------|----------|
| United States Of America | Issued Patent | 8,481,024 | 07/09/2013 | 2009-655 |

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Novel Live Recombinant Booster Vaccine against Tuberculosis
- Safe Potent Single Platform Vaccine Against Tier 1 Select Agents and Other Pathogens

CONTACT

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INVENTORS

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OTHER INFORMATION

KEYWORDS herapeutic, drug discovery,

biomedical, animal/veterinary, tularemi

CATEGORIZED AS

Medical

- Disease: Infectious
- Diseases
- ► Therapeutics
- ► Vaccines
- ► Veterinary
 - Therapeutics
 - ► Vaccines

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2009-655-0

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