Novel Candidates for an Improved Tuberculosis Vaccine

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing materials and methods for an improved vaccine against tuberculosis (TB).

OVERVIEW

Approximately one-third of the world’s population is infected with the bacterium Mycobacterium tuberculosis, the causative agent of tuberculosis (TB). Five to 10 percent of non-immunocompromised individuals infected with M. tuberculosis will develop active TB during their lifetimes. TB ultimately causes 1.7 million deaths every year and is a leading cause of death of individuals infected with the human immunodeficiency virus (HIV).

A vaccine for tuberculosis has been developed and is used routinely worldwide. However, this vaccine, which consists of an attenuated strain of the bovine pathogen M. bovis, is ineffective against TB strains that infect adults.

Drugs are available to treat TB, but resistance has developed against every drug currently available. Multi-drug resistant (MDR) and extensively drug resistant (XDR) strains pose a serious threat. New methods of preventing or treating TB are needed.

THE INVENTION

UW-Madison researchers have developed four candidates for a live attenuated TB vaccine. They disrupted regions of the M. tuberculosis genome that are associated with pathogenicity and identified viable but attenuated mutants with disruptions in the ctpV, rv0990c, rv0971c or rv0348 genes. These mutants may be useful for eliciting an immune response against tuberculosis.
BUSINESS OPPORTUNITY

• In 2006, the World Health Organization launched the “Global Plan to Stop TB” program with goals to reduce TB by 50 percent by 2015 and to eliminate TB as a public health concern by 2050.

APPLICATIONS

• Vaccines against TB
• Drug targets for treating different stages of TB
• Genetic vaccines based on the identified genes

KEY BENEFITS

• Provides improved candidates for a TB vaccine
• Unlike the current commercial TB vaccine, vaccines developed from these mutants should protect against TB in adults.

ADDITIONAL INFORMATION

Tech Fields
Pharmaceuticals & Vitamin D - Vaccines
Drug Discovery - Targets

CONTACT INFORMATION

For current licensing status, please contact Rafael Diaz at rdiaz@warf.org or 608-960-9847.