

Recombinant Tuberculosis BCG Vaccine Elicits a Highly Protective Host Immune Response

Tech ID: 20146 / UC Case 2006-538-0

SUMMARY

UCLA researchers specializing in infectious diseases have developed an improved method for producing a recombinant tuberculosis (TB) vaccine that elicits a highly potent protective immune response in the host for preventing or treating TB in humans and in animals.

BACKGROUND

The only currently available TB vaccine, an attenuated *Mycobacterium bovis* strain Bacille Calmette-Guerin (BCG), is of variable efficacy. A large carefully conducted meta-analysis has estimated the potency of BCG to be approximately 50%. UCLA researchers developed and reported in the last several years a recombinant BCG expressing the *Mycobacterium tuberculosis* 30 kDa major secretory protein (r30). This vaccine, named rBCG30, induces greater protection than BCG against aerosol challenge with a highly virulent strain of *M. tuberculosis*.

INNOVATION

UCLA researchers have developed an improved version of the rBCG30 vaccine that co-expresses host immunostimulatory molecules that shift the hosts immune response towards a more protective type of immune response. These vaccines are significantly more potent than the first generation rBCG30 vaccine in the highly relevant and stringent outbred guinea pig model of pulmonary tuberculosis, a model that closely mimics human tuberculosis.

APPLICATIONS

A more potent and effective vaccine against TB.

ADVANTAGES

- ▶ Directs a hosts immune response towards a more potent protective immune response.
- ▶ More efficacious than the currently available vaccine and even rBCG30, which itself is more potent than the currently available vaccine.

STATE OF DEVELOPMENT

This vaccine has been tested and proven effective in guinea pigs.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,383,132	02/26/2013	2006-538

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Safe and Potent Vaccines against Tularemia](#)
- ▶ [Novel Live Recombinant Booster Vaccine against Tuberculosis](#)
- ▶ [Safe Potent Single Platform Vaccine Against Tier 1 Select Agents and Other Pathogens](#)
- ▶ [Nanoparticles For Specific Detection And Killing of Pathogenic Bacteria](#)

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OTHER INFORMATION

KEYWORDS

therapeutics vaccine TB Tuberculosis
 treatment therapy

CATEGORIZED AS

- ▶ **Biotechnology**
- ▶ Health
- ▶ **Medical**
- ▶ Disease: Respiratory and Pulmonary System
- ▶ Therapeutics
- ▶ Vaccines

RELATED CASES

2006-538-0

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