POLSKY Center for Entrepreneurship and Innovation
THE UNIVERSITY OF CHICAGO

Clinical-Grade Non-Immunosuppressive Vaccine for Plague

SUMMARY

LcrV is a virulence factor for *Yersinia pestis*, the causative agent of human plague. Dr. Olaf Schneewind and colleagues at the University of Chicago have developed a subunit vaccine that confers protection against both bubonic and pneumonic plague in animal models of the disease (mice, rat and primate).

KEY RESULTS

These novel antibodies demonstrated efficacy in a mouse model of MRSA infection. The antibodies were shown to stimulate bacterial neutralization and killing by human blood-derived immune cells, demonstrating similar functions across species and measures of efficacy in the human setting.

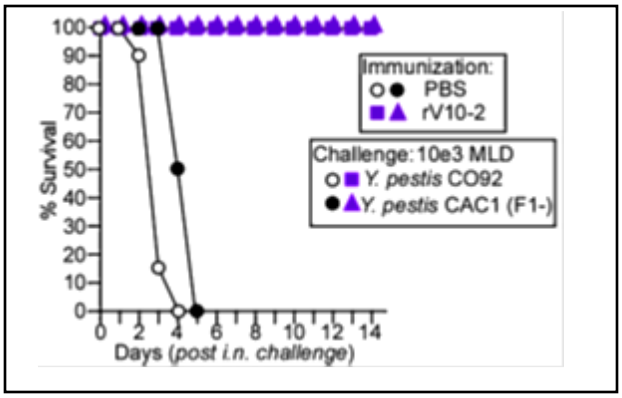
ADVANTAGES

- Provides superior and safer protection from *Y. pestis* without causing immunosuppression.
- Broad protection against both bubonic and pneumonic plague unlike inactivated vaccines.
- Demonstrated effectiveness as a single subunit vaccine in mice, rats, guinea pig and primates.

APPLICATIONS

- Broad-spectrum vaccine against both bubonic and pneumonic plague

V10 Vaccination Protects Against Lethal Dose Plague Challenge



Guinea pig survival following clinical grade V10 immunization followed by challenge with 1000X minimum lethal dose of Y. pestis.

TECHNICAL DESCRIPTION

Dr. Olaf Schneewind's lab has successfully generated a mutant form of LcrV protein, V10, which lacks immunosuppressive properties that have hindered use of LcrV as a vaccine antigen in the past. V10 protein has been produced by cGMP and has demonstrated efficacy as a subunit vaccine against both pneumonic and bubonic plague. V10 elicits an immune response that targets wild-type LcrV found in infectious plague strains. LcrV-based vaccines have been used successfully to induce an antibody-mediated response, however, in previous work the immunosuppressive properties of LcrV have prohibited its use as a plague vaccine in humans. V10 antigen overcomes this immunosuppressive hurdle.

REFERENCE
UCHI 1239

DEVELOPMENT STAGE
In vivo animal testing

THERAPEUTIC AREAS
Infectious disease
Biodefense vaccine

PUBLICATION
Prevention of pneumonic plague in mice, rats, guinea pigs and non-human primates with clinical grade rV10, rV10-2 or F1-V vaccines. Quenee et al., Vaccine September 2, 2011

INTELLECTUAL PROPERTY
US 7,875,280

LEAD INVESTIGATORS
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