Virus-Like Particle Based Vaccine against Staphylococcus aureus Infection

Published date: May 19, 2016

Technology description

Background

The Gram-positive pathogenStaphylococcus aureus(SA), including both methicillin-sensitive and methicillin-resistantS. aureus(MSSA, MRSA), is a major cause of human disease. The bacterium can cause a range of illnesses, varying from minor skin infections to life threatening diseases such as pneumonia, meningitis and sepsis. MRSAisolates are resistant to many types of antibiotics, including beta-lactam antibiotics such as penicillin and nafcillin. Antibiotic resistance increases the complexity of treating MRSA infections. To date, no vaccine against SA has been successful in clinical trials. Therefore, there exists a pressing need for novel strategies to prevent and treatS. aureusinfections.

Technology Description

Researchers at the University of New Mexico have used virus-like particles (VLPs) to develop efficacious vaccines againstStaphylococcus aureusinfections including MRSA infections. VLPs are a flexible vaccination platform for displaying practically any epitope in a multivalent format. Tests have shown thatVLP-based vaccines induce protective immunity to limit the pathogenesis ofS. aureusinfection and promote bacterial clearance.

Application area

Virus-like particles (VLPs) used as vaccines againstS. aureus
Limits tissue damage and inflammation caused by infection
Supports host immune clearance ofS. aureus
Applications in preventingS. aureusinfection, including MRSA infections

Institution

The University of New Mexico

Inventors

David Peabody
Seth Daly
Brad Elmore
Pamela Hall
Kathleen Triplett
Bryce Chackerian