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Genetically Engineered Dendritic Cell-Derived Vaccines

Tech ID: 32757 / UC Case 2022-702-0

BRIEF DESCRIPTION

Researchers at the University of California, Irvine have developed a new vaccine which generates a targeted, specific immune response with fewer complications than currently available vaccines.

SUGGESTED USES

- Vaccination against SARS-CoV-2
- Vaccination against infectious diseases

FEATURES/BENEFITS

- This vaccine generates efficient immune responses while minimizing allergenic reactions.
- This vaccine presents a lower risk of infection in immunocompromised patients.
- The vaccine components are more robust and less prone to degradation.
- The immune response to this vaccine is highly specific.
- The vaccine is generated through a tunable process and can be adapted to different infectious diseases.

TECHNOLOGY DESCRIPTION

Coronaviruses (CoVs) are a family of viruses which target the respiratory system in humans. Some CoV infections lead to mild symptoms, while others are severe, highly contagious, and can lead to death. The Severe Acute Respiratory Coronavirus 2 (SARS-CoV-2, or COVID-19) was first detected in 2019 and rapidly escalated to pandemic status, emphasizing the need for measures to mitigate the virus' spread, such as vaccination against infection. Several vaccines have since been developed, including mRNA and viral vector vaccines. mRNA vaccines provide strong immune responses but have led to severe allergic responses in patients with histories of allergenic reactions, while viral vector vaccines carry a slightly lowered risk of allergic reaction but generate a weaker immune response.

Researchers at the University of California, Irvine have developed a new vaccine which bridges these gaps by using smaller, specific portions of viral glycoproteins, resulting in a strong immune response with minimized allergenic responses. This vaccine also minimizes the risk of infections in immunocompromised patients. Furthermore, the specific nature of this vaccine results in a strong and highly targeted immune response which can be modulated for different diseases.

STATE OF DEVELOPMENT

This invention has reached the proof of concept stage, where a working prototype was tested in-vivo.

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OTHER INFORMATION

CATEGORIZED AS

- » **Biotechnology**
 - » Health
- » **Materials & Chemicals**
 - » Biological
- » **Medical**
 - » Delivery Systems
 - » Disease: Infectious Diseases
 - » Gene Therapy
 - » Vaccines

PATENT STATUS

Patent Pending

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