Multi-Functional Mucosal Vaccine Platform for Enhanced Immunogenicity

A novel mucosal vaccine platform designed to improve mucosal immune responses against infectious diseases through targeted delivery and prolonged stability.

What is the Problem?

Many vaccines do not effectively target mucosal surfaces, which are the primary entry points for many pathogens. Current vaccines utilize adjuvants to accomplish mucosal immunity. However, applying adjuvants to mucosal tissues can lead to undesirable side effects, such as inflammation, toxicity, and potentially heightened vulnerability to infections. As a result, there is a need for novel vaccine technologies that safely provide robust and long-lasting mucosal immunity.

What is the Solution?

The multi-functional mucosal vaccine platform addresses these challenges by utilizing an immunogenic fusion protein that includes an antigen fused to a neonatal Fc receptor (FcRn)-targeting element, FcγRI-binding domains, and flexible linkers. This combination enhances the vaccine's ability to target specific immune cells and prolongs its presence in the body, leading to a stronger and more sustained immune response. The platform is designed for mucosal administration, making it easier to administer and potentially increasing patient compliance. This multi-functional mucosal vaccine platform will maximize mucosal and systemic immune responses, eliminate the need for adjuvants, and enable safe intranasal delivery of vaccines.

What is the Competitive Advantage?

Targeted Delivery: The inclusion of FcγR1-binding domains ensures the vaccine targets specific immune cells, enhancing its effectiveness.

Prolonged Stability: FcRn-binding domains help maintain the vaccine's stability and presence in the body, leading to longer-lasting immunity.

Ease of Administration: Designed for mucosal delivery, this platform eliminates the need for injections, improving patient compliance.

Broad Applicability: The platform can be adapted to include antigens from various infectious diseases, making it versatile and widely applicable.

Technology ID

BDP 7415

Category

Therapeutics/Infection

Selection of Available Technologies

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