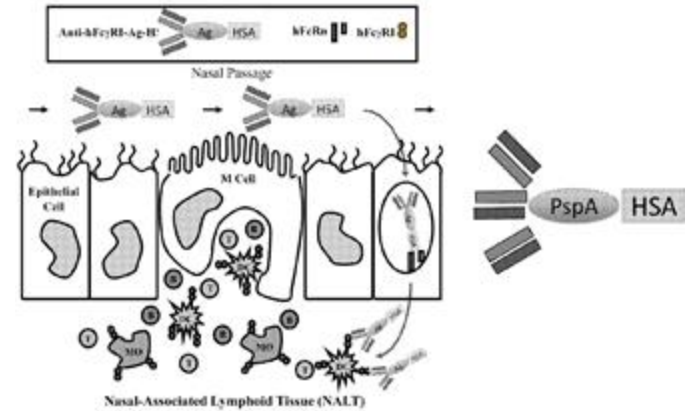


Targeted Immunomodulation for Precision Therapy

Advancing Safe and Effective Immune Regulation for Cancer, Autoimmune Disorders, and Infectious Diseases

Background:

Current vaccine delivery methods face significant challenges in effectively inducing mucosal immunity, crucial for protecting against respiratory, gastrointestinal, and sexually transmitted infections. Traditional injectable vaccines primarily stimulate systemic immune responses but often fail to generate strong mucosal defenses at the primary sites of pathogen entry. With poor antigen uptake, rapid antigen degradation, and inefficient immune activation at mucosal surfaces limit the effectiveness of existing mucosal vaccine strategies. These limitations highlight the need for a novel vaccine platform that enhances antigen presentation, improves immune response durability, and enables needle-free administration to increase accessibility and compliance.



Source: <https://patents.google.com/patent/US11185583B2/fr>

Technology:

Albany Medical College has developed a recombinant immunogenic fusion protein designed to enhance mucosal immune responses by integrating FcγR1-binding domains, pathogen-derived antigens, and FcRn-binding domains. The FcγR1-binding domain facilitates antigen uptake by antigen-presenting cells (APCs), enhancing phagocytosis and immune activation, while the FcRn-binding domain extends the fusion protein half-life by interacting with the neonatal Fc receptor (FcRn), ensuring prolonged antigen availability. This platform optimizes antigen presentation at mucosal surfaces, promoting both local and systemic immunity. By leveraging mucosal immunization strategies, the invention enables needle-free administration, improved immune protection, broad applicability for vaccines targeting respiratory, gastrointestinal, and sexually transmitted infections, with potential for pandemic preparedness.

Intellectual Property

US11185583B2

Technology Readiness

Advantages:

- Enhanced Specificity
- Improved Safety Profile
- Increased Efficacy
- Broad Applicability

Applications:

- Cancer Immunotherapy
- Autoimmune Disease Treatment
- Infectious Disease Management
- Personalized Medicine

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