

Intranasal Vaccine Utilizing Bordetella pertussis-Derived Outer Membrane Vesicles (OMVs)

Researcher Information



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Background & Challenges

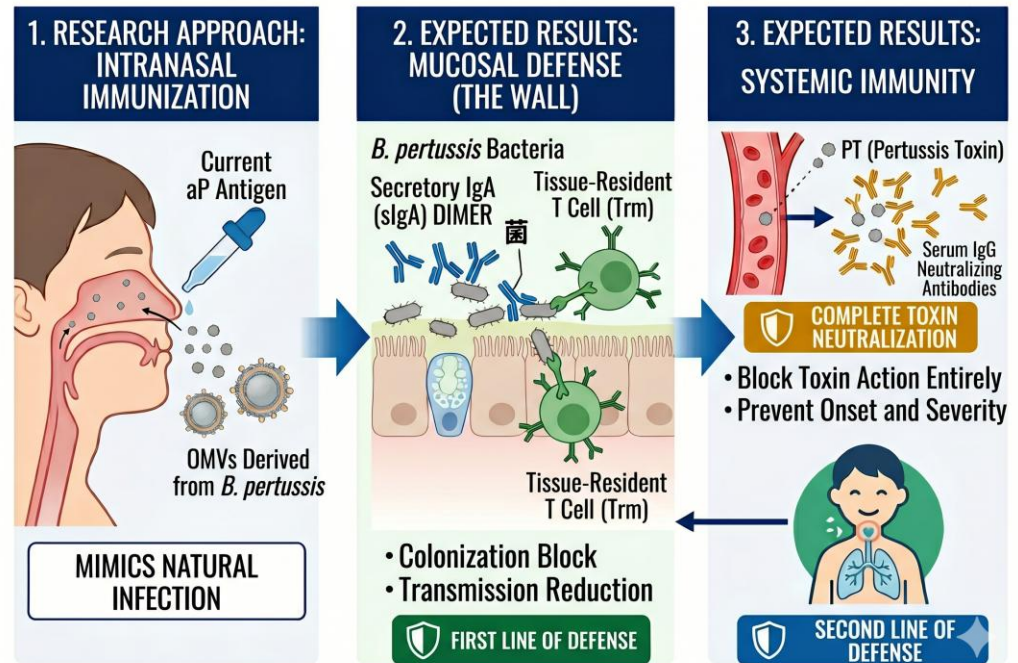
- Limitations of Current aP Vaccines: Effective against symptoms, but fail to prevent bacterial colonization and transmission in the respiratory mucosa.
- Japan's Lag in Development: While new vaccines are being developed globally, Japan—the pioneer of the original aP vaccine—is falling behind.

Research Idea & Technology Seeds

- Originality & Advantage: A novel vaccine that prevents bacterial colonization and transmission in the respiratory mucosa while maintaining the current vaccine's efficacy against onset and symptoms.
- Novel Antigen Design: A mixture of current vaccine antigens and outer membrane vesicles (OMVs).
- Route of Administration: Intranasal (IN).
- R&D Stage: Preclinical evaluation (in vivo mouse models).

Conceptual Schematic

TWO-STAGE DEFENSE CONCEPT OF INTRANASAL aP+OMVs VACCINE AND EXPECTED RESULTS



Future Plans & Outlook

- Challenge 1: Weak IgG antibody response to pertussis toxin (PT).
- Challenge 2: Seeking partners for collaborative research and co-development.