

ADENOVIRAL-VECTORED VACCINE FOR PROTECTION AGAINST EXISTING AND DEVELOPING SARBECOVIRUSES

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Value Proposition: *This invention introduces a mucosal vaccine that can provide immunity against multiple Sarbecoviruses.*

Technology Description

Researchers at Washington University in St. Louis have developed an adenoviral-vectored vaccine that can induce broad immunity against existing and pre-emergent Sarbecoviruses with pandemic potential. SARS-CoV-2 vaccines have been instrumental in controlling the impact of the pandemic by limiting symptomatic infections, severe disease, hospitalizations, and deaths. However, selective pressures have driven antigenic drift, resulting in immune escape and sequential cycles of variant emergence, making developing safe and effective vaccines against pathogens with considerable antigenic variation challenging.

This invention uses computational methods to infer ancestral phylogenetic reconstructions of receptor binding domain (RBD) and spike protein sequences across multiple Sarbecovirus clades, allowing for the development of a mucosal vaccine that can protect against many different coronaviruses in the Sarbecovirus family.

Stage of Research

Proof of concept- Immunized wild-type mice.

Publications

- Ying, B., Darling, T. L., [Desai, P.](#), Liang, C. Y., [Dmitriev, I. P.](#), Soudani, N., Bricker, T., Kashentseva, E. A., Harastani, H., Raju, S., Liu, M., Schmidt, A. G., [Curiel, D. T.](#), [Boon, A. C. M.](#) & [Diamond, M. S.](#), Mar 2024, In: [Nature immunology](#). 25, 3, p. 578 1 p.

Applications

- Resistance to Sarbecoviruses

Key Advantages

- Can induce immunity

- Effective for protecting against multiple coronaviruses

Patents

Patent application filed

Related Web Links – [Michael Diamond Profile](#); [Diamond Lab](#)