

Next generation SARS-CoV-2 vaccines for emerging variants

Multi-antigen adenoviral vaccine platform elicits strong immunity against Delta and Omicron SARS-CoV-2 variants.

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the cause of the coronavirus disease-2019 pandemic, poses a continued global health threat. Immune evasion and increased transmissibility of highly divergent variants, including Omicron subvariants BA.2, BA.4, and BA.5, have significantly compromised the effectiveness of first-generation COVID-19 vaccines. Hence, there is a critical need to develop the next generation of vaccines tailored to combat the rapidly evolving SARS-CoV-2 variants.

Researchers at Purdue University have developed a next generation SARS-CoV-2 Vaccines via a novel adenoviral vaccine platform and innovative antigen design to include a multi-antigen approach with the utility of the autophagy-inducing peptide C5 (AIP-C5). This technology suggests that the use of the BAd vaccine platform in a multi-antigen approach complemented with AIP-C5 is a promising strategy for the development of next-generation SARS-CoV-2 vaccines.

Technology Validation:

Vaccinated mice exhibited significantly higher levels of antigen-specific humoral (both mucosal and systemic) and CMI responses compared to the control groups. Vaccinated animals exhibited high titers of virus-neutralizing antibodies against Delta (B.1.617.2) and Omicron (B.1.1.529) variants.

Advantages:

- Multi-antigen vaccine
- Effective for SARS-CoV-2 variants

Applications:

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-SARS-CoV-2

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-Pharmaceutical companies

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Intellectual Property:

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