

# BIOMEDICAL, BIOENGINEERING, MANUFACTURING & MATERIALS FRONTIERS



**Navin Varadarajan**

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**Publications**

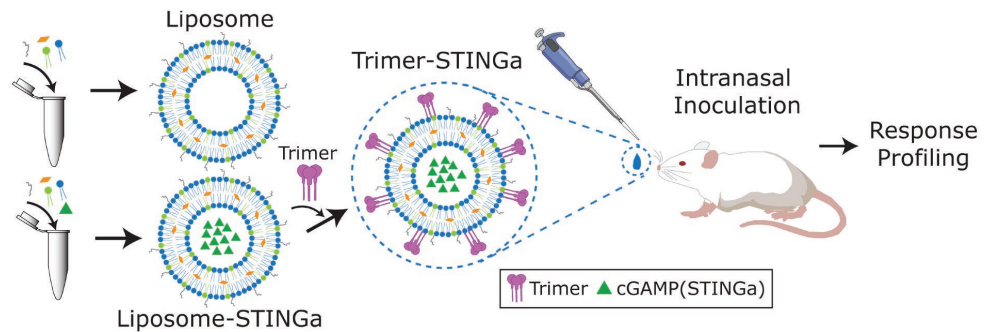
1. An, X., Martinez-Paniagua, M., Rezvan, A., Fathi, M., Singh, S., Biswas, S., Pourpak, M., Yee, Cassian, Liu, X., and Varadarajan, N. Single-dose intranasal vaccination elicits systemic and mucosal immunity against SARS-CoV-2. doi: 10.1101/2020.07.23.212357

**Patents**

1. Sting modulators for the treatment and prevention of various diseases (patent pending)  
 (2) Intranasal Vaccines (patent pending)

Dr. Varadarajan is a renowned investigator, innovator and entrepreneur conducting life science related research in the Single-Cell Lab at the Cullen College of Engineering. The focus of his research is to develop innovative and versatile high-throughput single-cell platform technologies to characterize biological functions ranging from the enzyme catalysts in single cells to antigen mediated cellular cytotoxicity. Some of the applications of these technologies include systemic investigation of B cells and antibodies in autoimmune diseases, characterization of T cell responses in tumors/vaccines; and engineering therapeutic enzymes/antibodies. As an entrepreneur, Dr. Varadarajan is a co-founder and chief scientific officer of companies that have spun out of the Single-Cell Lab.

**INTRANASAL VACCINES**



Dr. Varadarajan has developed a platform technology for the intranasal delivery of vaccines against respiratory pathogens and cancer that can be administered to humans and animals. This next-generation vaccine platform combines the potential of in-home administration with the ability to deliver complete immunity. The technology has been validated for COVID-19 in rodents and results in durable and lasting immune responses measured by both antibody and T-cell responses. One single administration of the vaccine directly elicits immune response in the respiratory compartment and can prevent the initial establishment of infection. AuraVax, a company that was incubated and launched from the Single-Cell Lab, has optioned this technology from the University of Houston and is conducting additional tests to bring the COVID19 vaccine to humans.