

Spike protein vaccines effective against multiple SARS COV-2 variants: IIT-M study

27 September 2022 | News

The study predicts T-cell immunity produced due to present vaccines may still be efficient in protecting the host against select SARS COV-2 variants



A team of researchers at the Indian Institute of Technology Madras (IIT-M) has shown that spike protein vaccines may be effective against multiple variants of the coronavirus (SARS COV-2).

The results of the IIT-M study suggest that the attack by selected variants such as Delta plus, Gamma, Zeta, Mink and Omicron, may be dealt with by vaccine-induced T-cell responses despite the compromised neutralising antibodies responses.

While further experimental verification is called for, the researchers believe that the present spike protein vaccinations are likely to be efficacious against circulating variants of SARS COV-2.

The researchers set out to find out what would be the response like if the post-vaccination infections were caused by a variant other than the original Wuhan strain incorporated in vaccine preparations. In variants of SARS COV-2, there are molecular level changes to the spike protein of the virus, and these variations may include the regions of protein sequences that are recognized by T-cells called epitopes.

Understanding the effect of these variations on the immune response can give some clarity about the efficacy of vaccination against the variants of SARS COV- 2.

The researchers analysed the molecular differences in T-cell epitopes (both CD4+ and CD8+) across a few variants. These mutated epitope molecular structures were further analysed using immunoinformatics tools to interpret their ability to bind MHC molecules - which can help understand their ability to be recognised by/trigger T cells.