

## Indian-US scientists work on pre-existing immunity in people unexposed to COVID-19

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**Uncovering the immunological responses to COVID-19 infection will help in designing and developing next-generation therapies and manage the treatment of critical COVID-19 patients**



In a study published in the [Nature journal](#), Scientific Reports, an international team of researchers from MedGenome, India & USA suggest robust pre-existing T-cell immunity against the SARS-CoV-2 virus in individuals unexposed to COVID-19.

The presence of high-quality cross-reactive TCRs against common CMV and flu antigens can protect individuals by mounting an early CD8 T-cell response and clearing the virus.

This finding is in contrast with the multiple published studies where pre-existing T-cell immunity has been suggested to arise from shared epitopes between SARS-CoV-2 and other common cold-causing coronaviruses.

Additionally, the findings also raise a possibility that many individuals carrying antigen-experienced T-cells against other viruses may be naturally protected against COVID-19 without prior SARS-CoV-2 infection.

“The strong immunological basis of our findings may help vaccine designs for emerging respiratory viruses which need consideration and rational inclusion of CD8 epitopes to confer long-term resistance. Identifying additional immunodominant epitopes in SARS-CoV-2 and their cognate TCRs can become a powerful immune monitoring tool for assessing protective immunity against SARS-CoV-2 in the global population.” said Dr. Amitabh Chaudhuri, Vice President, R&D, MedGenome, US and a lead study author.

“Vaccinating the population being one of the major weapons in fighting the pandemic, and our primary focus being building immunity against the virus, identifying robust pre-existing immunity against SARS-CoV-2 in the healthy population will be a useful measure to assess the mode of recovery and viral spread in the global population. These findings will help in development of efficacious targeted vaccines with long-term therapeutic benefits.”, said Sam Santhosh, Founder & Chairman,

