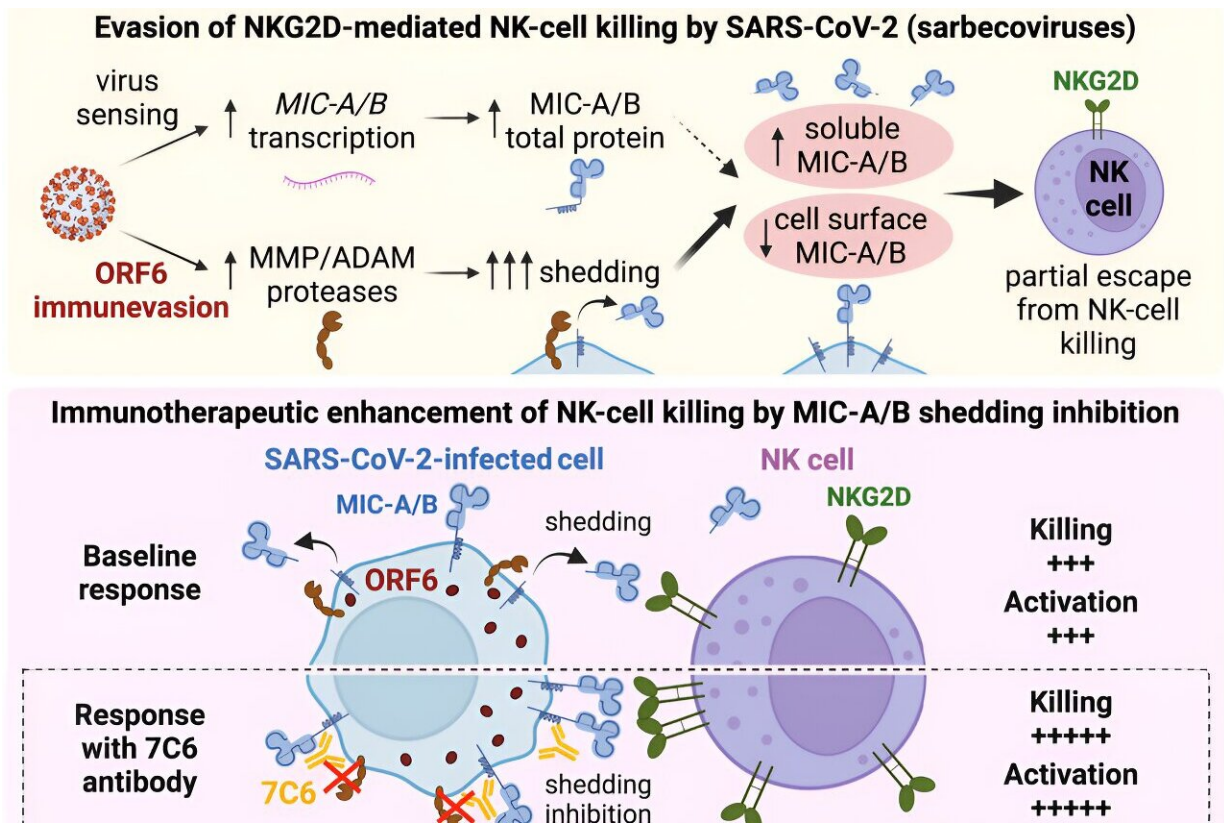


New study identifies mechanism of immune evasion of SARS-CoV-2 and variants

May 15 2024, by Julia Häberlein



Credit: *Cell* (2024). DOI: 10.1016/j.cell.2024.03.026

A new study has revealed important insights into how SARS-CoV-2 and its variants escape the immune system. The findings pave the way for new therapeutic approaches against COVID-19.

The research of the international team of scientists from the U.S., Brazil and Germany focused on the interactions between the virus and the human innate immune system. The study was led by a team from the Ragon Institute of Mass General, MIT and Harvard. [The results](#) are published in *Cell*.

The study shows that cells infected with SARS-CoV-2 downregulate important immune signals known as NKG2D ligands. These ligands play a crucial role in activating the immune system, particularly natural killer (NK) cells, which are cells of the innate immune system that are central to fighting [viral infections](#).

In addition, the researchers identified the mechanism by which the virus achieves the downregulation of these immune signals. It was found that a viral protein called ORF6 is significantly involved in this process. An antibody, 76C, that is already being tested in [preclinical studies](#) in [cancer research](#), prevents this downregulation and makes the [infected cells](#) more vulnerable to [natural killer cells](#). This discovery could open up new approaches for the development of therapies against COVID-19.

The study also showed that NK cells play an important role in fighting SARS-CoV-2-infected cells. Despite the virus' efforts to suppress the immune system, NK cells are able to recognize and destroy infected cells. This suggests that activating the innate immune system could be a promising strategy to treat COVID-19.

"Our findings provide important insights into the immune defense against SARS-CoV-2 and how we can potentially strengthen it with new therapies," says Dr. Dr. Angelique Hölzemer, head of the research group Infection & Immune Regulation at the Leibniz Institute of Virology and Clinician Scientist in the Division of Infectious diseases at the I. Department of Medicine at the University Medical Center Hamburg-Eppendorf (UKE).

"By better understanding how the virus tries to escape the immune system, we can develop additional approaches to treat COVID-19."

More information: Jordan A. Hartmann et al, Evasion of NKG2D-mediated cytotoxic immunity by sarbecoviruses, *Cell* (2024). [DOI: 10.1016/j.cell.2024.03.026](https://doi.org/10.1016/j.cell.2024.03.026)

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