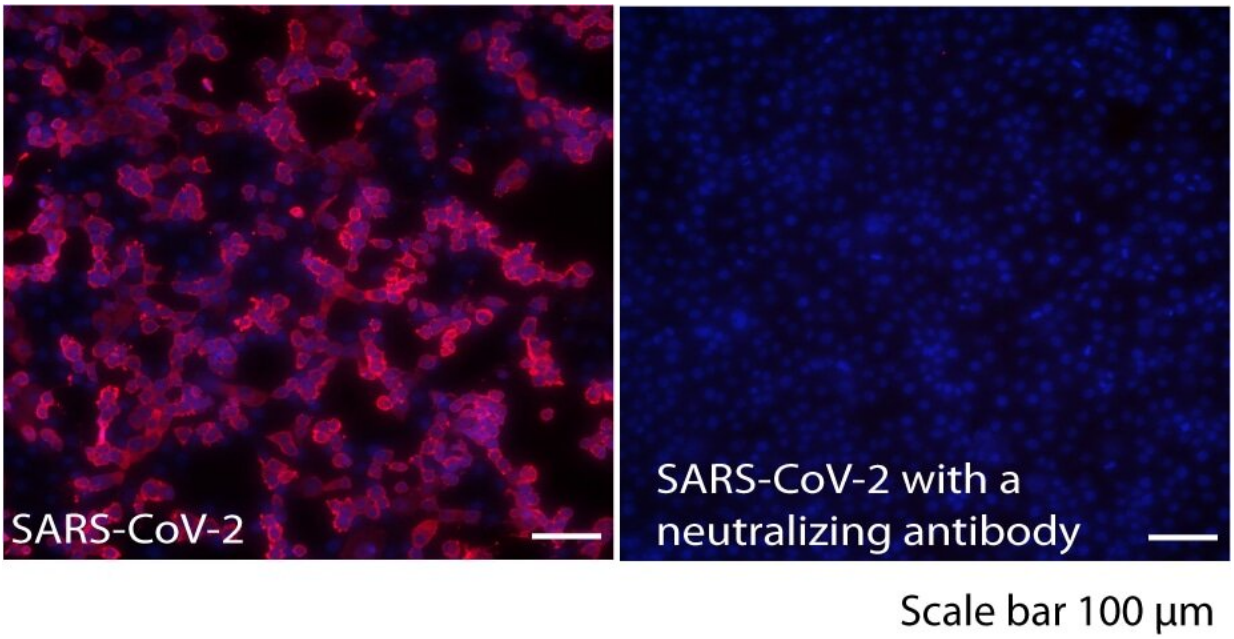
Medical Xpress

Most people are naturally armed against SARS-CoV-2: study

February 11 2021



SARS-CoV-2 infected Vero cells untreated (left) and treated with neutralizing antibody (right) Credit: Mor M, et al., 2021, PLOS Pathogens, CCBY 4.0 (creativecommons.org/licenses/by/4.0/)

The majority of the population can produce neutralizing antibodies against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in severe cases of coronavirus disease 2019 (COVID-19), according to a study published February 11 in the open-access journal *PLOS Pathogens* by Michael Mor of Tel Aviv University, and colleagues. Moreover, the

results support the use of combination antibody therapy to prevent and treat COVID-19.

The COVID-19 pandemic, caused by SARS-CoV-2, has had a profound impact on global public health. Neutralizing antibodies that specifically target the receptor-binding domain (RBD) of the SARS-CoV-2 spike protein are thought to be essential for controlling the virus. RBD-specific neutralizing antibodies have been detected in convalescent patients—those who have recovered from COVID-19. Some of the recoverees tend to have robust and long-lasting immunity, while others display a waning of their neutralizing antibodies. The factors associated with an effective, durable antibody response are still unclear.

To address this gap in knowledge, Mor and colleagues used molecular and bioinformatics techniques to compare B-cell responses in eight patients with severe COVID-19 and 10 individuals with mild symptoms, 1.5 months after infection. Very ill patients showed higher concentrations of RBD-specific antibodies and increased B-cell expansion. Among 22 antibodies cloned from two of these patients, six exhibited potent neutralization against SARS-CoV-2. Bioinformatics analysis suggests that most people would be capable of readily producing neutralizing antibodies against SARS-CoV-2 in severe cases of COVID-19. Moreover, combinations of different types of neutralizing antibodies completely blocked the live virus from spreading. According to the authors, these antibody cocktails can be further tested in clinical settings as a useful means to prevent and treat COVID-19.

"Even with a vaccine at our doorstep, arming clinicians with specific anti-SARS-CoV-2 therapeutics is extremely important," the authors add. "Combinations of neutralizing antibodies represent a promising approach towards effective and safe treatment of severe COVID-19 cases, especially in the elderly population or chronically ill people, who will not be able to so easily produce these antibodies upon infection or

vaccination."

More information: Mor M, Werbner M, Alter J, Safra M, Chomsky E, Lee JC, et al. (2021) Multi-clonal SARS-CoV-2 neutralization by antibodies isolated from severe COVID-19 convalescent donors. *PLoS Pathog* 17(2): e1009165. doi.org/10.1371/journal.ppat.1009165

Provided by Public Library of Science

Citation: Most people are naturally armed against SARS-CoV-2: study (2021, February 11) retrieved 19 April 2024 from
https://medicalxpress.com/news/2021-02-people-naturally-armed-sars-cov-.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.