

Sinovac: Vaccine used in much of the world no match for Omicron variant

January 20 2022



Credit: Pixabay/CC0 Public Domain

Millions of people around the world have received two shots of Sinovac, a Chinese-manufactured inactive vaccine that is used in 48 countries to help reduce transmission rates of COVID-19.

However, those vaccinations alone are of no help against the widely circulating Omicron variant, show a new study by researchers at Yale and the Dominican Republic. The results are published in the journal *Nature Medicine*.

An analysis of blood serum from 101 individuals from the Dominican Republic showed that Omicron infection produced no [neutralizing antibodies](#) among those who received the standard two-shot regimen of the Sinovac vaccine. Antibody levels against Omicron rose among those who had also received a [booster](#) shot of the mRNA vaccine made by Pfizer-BioNTech.

But when researchers compared these samples with blood serum samples stored at Yale, they found that even those who had received two Sinovac shots and a booster had [antibody levels](#) that were only about the same as those who'd received two shots of the mRNA vaccines but no booster shot. In other studies, the two-shot mRNA regimen without a booster has been shown to offer only limited protection against Omicron.

Also, the researchers found that individuals who had been infected by earlier strains of the SARS-Cov-2 virus saw little immune protection against Omicron.

The findings will likely complicate global efforts to combat the Omicron strain, which has supplanted the more dangerous but less transmissible Delta strain as the most dominant circulating virus in much of the world. An additional booster shot—and possibly two—are clearly needed in areas of the globe where the Sinovac shot has been chief source of vaccination, said Akiko Iwasaki, the Waldemar Von Zedtwitz Professor of Immunobiology and senior author of the paper.

"Booster shots are clearly needed in this population because we know that even two doses of mRNA vaccines do not offer sufficient protection

against infection with Omicron," Iwasaki said.

Omicron has proven particularly problematic to combat because it possesses 36 mutations on the [spike proteins](#) on its surface, which the virus uses to enter cells, researchers say. Existing mRNA vaccines are designed to trigger antibody response when spike proteins are recognized.

Iwasaki stressed, however, that the human immune system still has other weapons it can use against COVID-19, such as T cells that can attack and kill infected cells and prevent [severe disease](#).

"But we need antibodies to prevent infection and slow transmission of the virus," she said.

Carolina Lucas and Valter Silva Monteiro, both from the Yale School of Medicine, are co-lead authors of the paper. Eddy Perez-Then, of the Health Ministry of the Dominican Republic, and Marija Miric, of Two Oceans Health in Santo Domingo, are co-lead authors.

More information: Eddy Pérez-Then et al, Neutralizing antibodies against the SARS-CoV-2 Delta and Omicron variants following heterologous CoronaVac plus BNT162b2 booster vaccination, *Nature Medicine* (2022). [DOI: 10.1038/s41591-022-01705-6](https://doi.org/10.1038/s41591-022-01705-6)

Provided by Yale University

Citation: Sinovac: Vaccine used in much of the world no match for Omicron variant (2022, January 20) retrieved 27 April 2024 from <https://medicalxpress.com/news/2022-01-sinovac-vaccine-world-omicron-variant.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.