

# Rapid evaluation of vaccine as booster shot for omicron subvariants

April 17 2023

---



Credit: Pixabay/CC0 Public Domain

With continuous mutations of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the severe immune escape of omicron

subvariants highlights the need for development of next-generation broad-spectrum vaccines, especially as boosters after high-level vaccination coverage of inactivated vaccines in China and many other countries. Previously, the authors of this article developed a coronavirus disease 2019 (COVID-19) protein subunit vaccine ZF2001 based on the tandem homo-prototype receptor-binding domain (RBD)-dimer of the SARS-CoV-2 spike protein.

The antigen was upgraded into a hetero-chimeric prototype (PT)-Beta or Delta-BA.1 RBD-dimer to broaden the cross-protection efficacy and prove its efficiency with protein subunit and mRNA vaccine platforms. The authors further explore the hetero-chimeric RBD-dimer mRNA vaccines and evaluated their broad-spectrum activities as booster jabs following two doses of inactivated vaccine (IV) in mice.

The data demonstrated that the chimeric vaccines significantly boosted neutralizing [antibody levels](#) and specific T-cell responses against the variants, and PT-Beta was superior to Delta-BA.1 RBD as a booster in mice, shedding light on the antigen design for the next generation COVID-19 vaccines. The findings are published in the journal *Biosafety and Health*.

**More information:** Qian Chen et al, Rapid evaluation of heterologous chimeric RBD-dimer mRNA vaccine for currently-epidemic Omicron sub-variants as booster shot after inactivated vaccine, *Biosafety and Health* (2023). [DOI: 10.1016/j.bsheal.2023.02.002](https://doi.org/10.1016/j.bsheal.2023.02.002)

Provided by Compuscript Ltd

Citation: Rapid evaluation of vaccine as booster shot for omicron subvariants (2023, April 17) retrieved 3 May 2024 from

<https://medicalxpress.com/news/2023-04-rapid-vaccine-booster-shot-omicron.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.