

Review of: "Enhanced neutralization against SARS-CoV-2 by vaccine booster exhibits reduction of Omicron variant"

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The Omicron variant (B.1.1.529) possesses ~32 mutations in its spike protein, of which 15 mutations are in the receptor binding domain (RBD). The Omicron variant is worsening the COVID-19 pandemic largely due to the significant escape from the neutralization antibodies. To combat Omicron variant, one of the most effective ways is vaccination, especially the booster vaccination. There are a variety types of COVID-19 vaccines, and in China, the inactivated virus vaccine is dominant, especially BBIBP-CorV. It is of great interest to see what level of protection can the booster dose of BBIBP-CorV provide. In this study, Yu and et al., used pseudovirus neutralization assay and ELISA assay, analyzed samples from a cohort of healthcare workers who have been fully vaccinated with 3 doses of BBIBP-CorV. They found the vaccine triggered neutralization activities were lower for the Omicron variant than that of the wild-type virus strain, while significantly higher neutralization activities, that against both the wild-type virus and the Omicron variant, were observed after the booster dose as compared to that of the 2nd dose. Their results clearly support the necessity of booster vaccination. Overall, the study is clearly designed, the logic of this manuscript is fluent. It is a timely study, which addressed a question of great interest.

1. The whole process of vaccination usually lasts for several months to one year. In this study, only samples from several time points were analyzed. It will be nice to analyze more samples from more time points, especially, compare the longitudinal samples from a single individual (side-by-side comparison).
2. After the booster dose, it is critical to answer: how long will the boosted immunity be lasting? However, only samples collected at 28 days after the booster dose were analyzed. It will be nice to analyzed sera collected at different time points after the booster dose.