Review of: "Omicron BA.1 and BA.2 neutralizing activity elicited by a comprehensive panel of human vaccines"

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Using vesicular stomatitis virus(VSV) pseudotyped with the SARS-CoV-2 spike protein, Bowen et al have assessed the plasma neutralizing activity of individuals stimulated by either infection (N=14) or seven clinical vaccines (N=134), against VSV pseudotype virus bearing CoV-2 spike proteins with mutations of two major sub-variants, namely BA.1 and BA.2 of the globally dominant SARS-CoV-2 Omicron variant of concern. The authors found that mRNA vaccines induced the greatest magnitude of Omicron BA.1 and BA.2 plasma neutralizing activity, while the neutralization activity against Omicron BA.1 and BA.2 is substantially reduced compared to that against the early dominant D614G variant. Moreover, a booster immunization (using spike protein derived from the original Wuhan-Hu-1) for people who have previously received mRNA, Ad26.COV2.S, AZD1222, or Sputnik V vaccinations has resulted in remarkably higher plasma neutralizing activity against BA.1 and BA.2 Omicron variants than individuals received no booster immunization. The results of this study suggest that vaccine boosting regimens using the spike protein from the original Wuhan-Hu-1 strain is able to provide protection against SARS-CoV-2 variants including the highly infectious Omicron lineage. The sampling size of this study is sufficient and the data set is compelling.