

Figure S1: Omicron resistance to two-dose and booster immunity varies by individual and vaccine type, related to Figure 1. (A) NT_{50} values for HCWs who received two doses of Moderna mRNA-1273 (n = 20) or Pfizer/BioNTech BNT162b2 (n = 28) are plotted by vaccine type. (B-F) Post-second vaccine dose and post-booster dose NT_{50} values are plotted pairwise for HCWs for which both time points were analyzed (n = 14) against the D614G (C), Alpha (D), Beta (E), Delta (F), and Omicron BA.1.1 (G) variants. (H) NT_{50} values for recipients of Moderna mRNA-1273 (n = 4) or Pfizer/BioNTech BNT162b2 (n = 15) booster doses are plotted by vaccine type. Geometric mean NT_{50} values in panels A and G are displayed at the top of plots along with the percentage of subjects with NT_{50} values above the limit of detection; bars represent geometric mean \pm 95% confidence interval, and for A and G significance is determined by one-way repeated measures ANOVA with Bonferroni's multiple testing correction while for B-F, significance was determined by two-tailed paired t-test. P-values are represented as * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; ns, not significant.

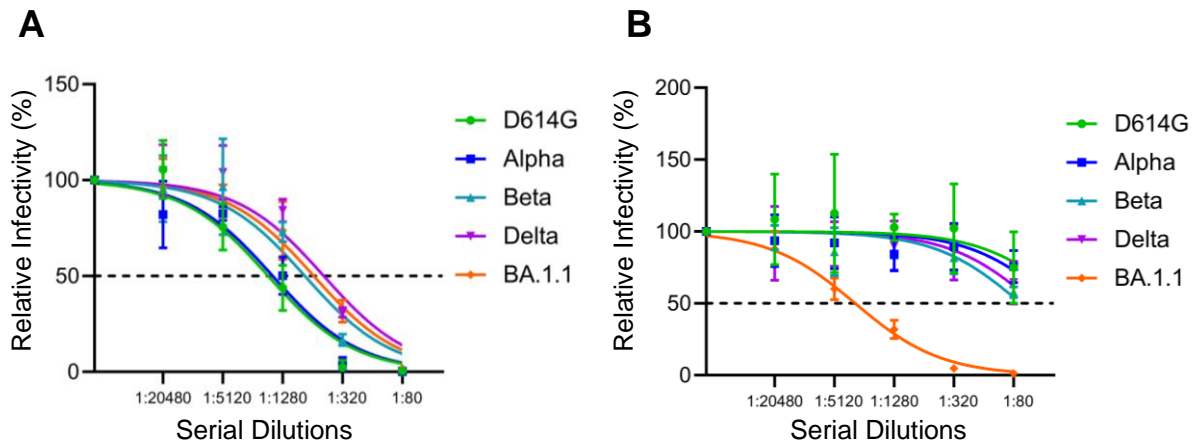


Figure S2: Omicron patients exhibit heterogeneous breadth of neutralization, related to Figure 2. (A-B) Representative neutralization curves are shown for two Omicron-wave COVID-19 hospitalized patient are displayed, including one with a broad nAb repertoire (A) and one with an Omicron-specific nAb repertoire (B).

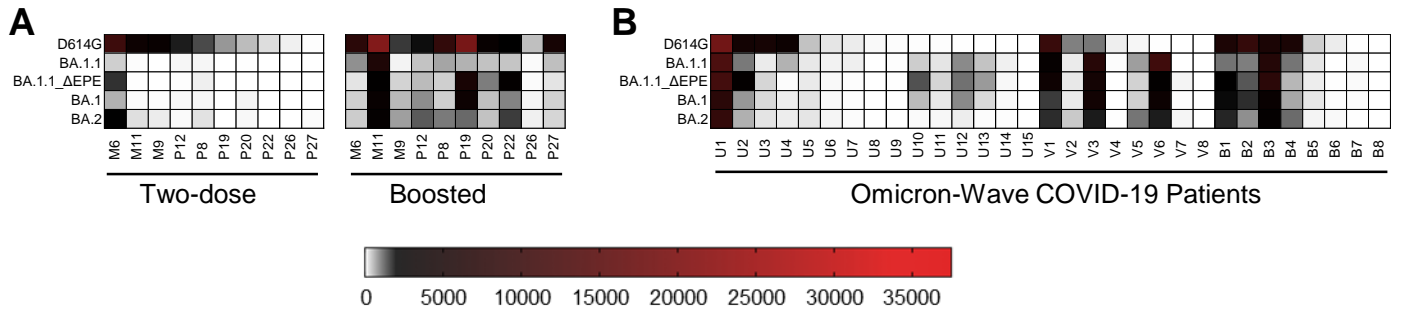


Figure S3: Omicron sub-lineage escape from Omicron infected patient sera varies by vaccination status, related to Figure 3. (A-B) Heat maps showing patient/HCW NT₅₀ values against each Omicron sub-lineage. **(A)** HCWs are identified as “M” for Moderna mRNA-1273 vaccinated/boosted HCW, “P” for Pfizer/BioNTech BNT162b2 vaccinated/boosted HCW. **(B)** Hospitalized patient samples collected during the Omicron-wave are identified as “U” for unvaccinated, “V” for 2-dose vaccinated, and “B” for booster dose vaccinated.