Supplementary Information
for COVID-19 mRNA vaccine induced antibody responses and neutralizing antibodies against three SARS-CoV-2 variants

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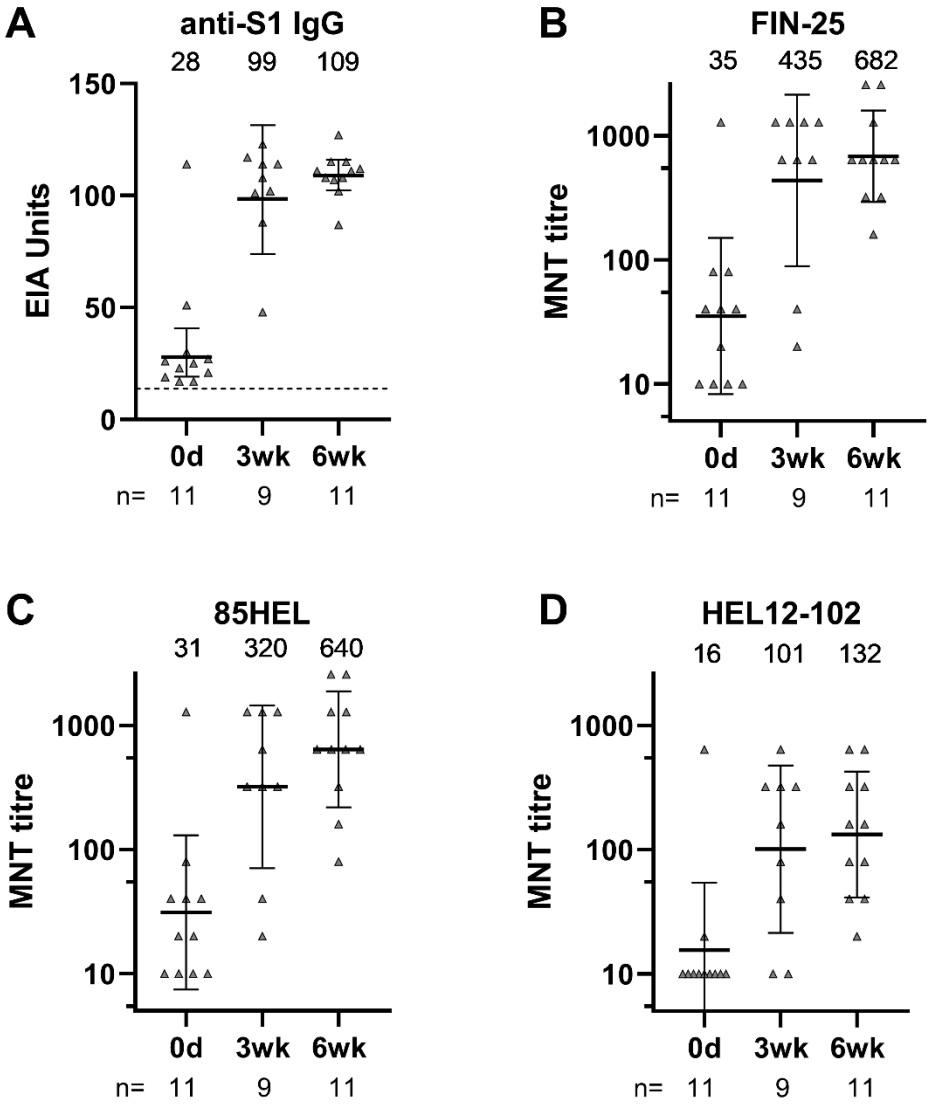
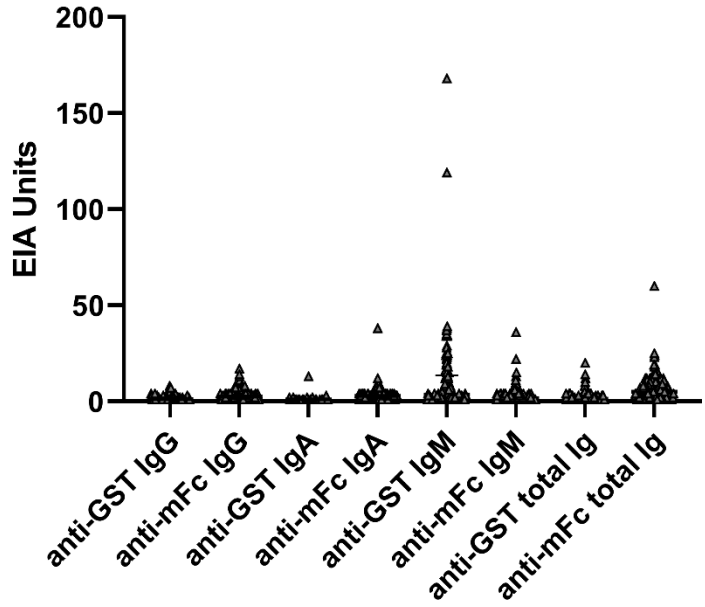
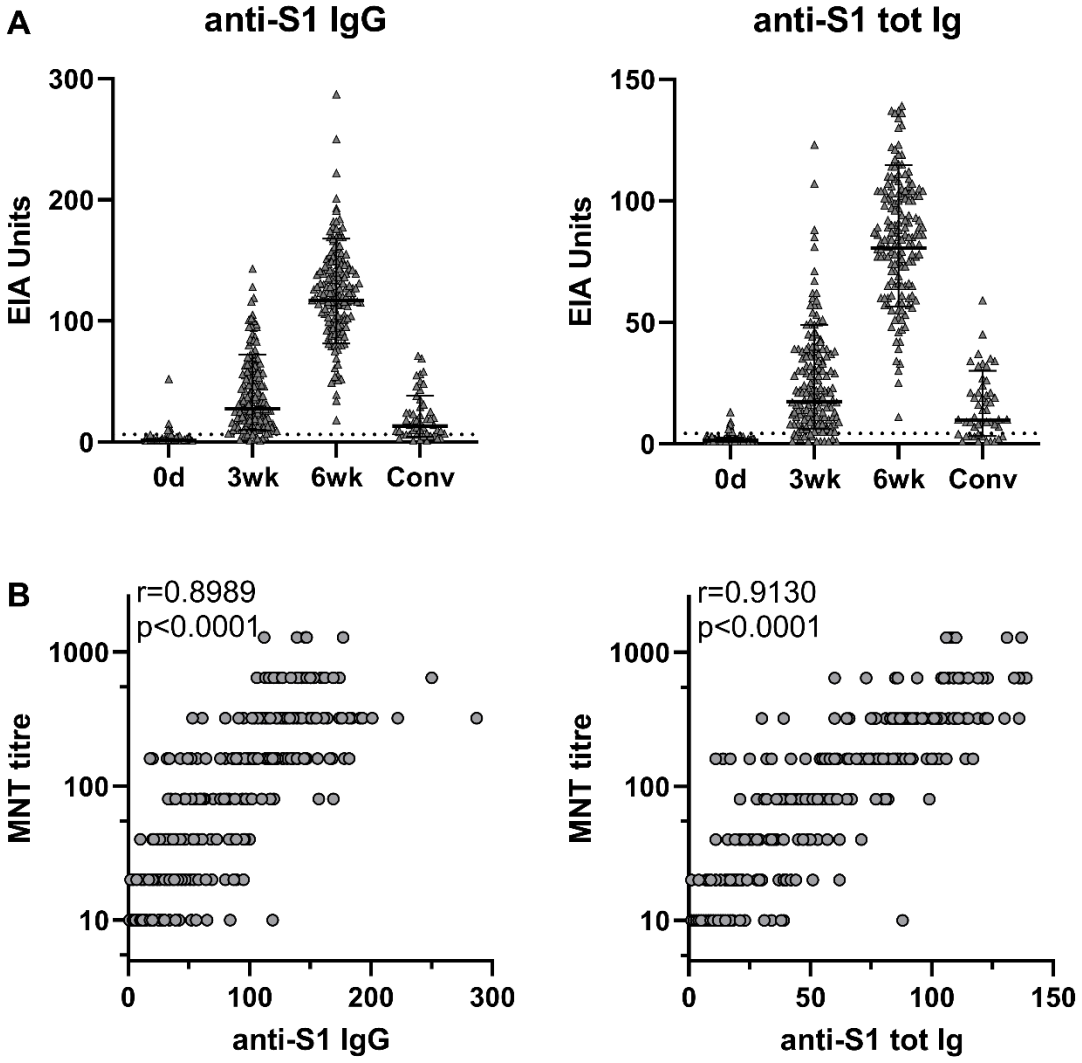


Supplementary Fig. 1 Antibody responses in BNT162b2 vaccinated health care workers with pre-existing anti-S1 IgG antibodies. A. Anti-S1 IgG antibody responses determined with EIA. **B-D.** Neutralizing antibody titres against D614G variant FIN-25 (B), B.1.1.7 variant 85HEL (C) and B.1.351 variant HEL12-102 (D) determined with microneutralization test (MNT). Sequential serum samples were collected before vaccination (0d), and three (3wk) and six (6wk; 3 wk after the second vaccine dose) weeks after the first dose of the BNT162b2 vaccine. Geometric means (GMs) are indicated on top of the graphs. Dotted line (A) represents the cut-off value in IgG EIA. In MNT (B) samples with a titre value of <20 (considered negative) is given a value of 10. N refers to the number of serum specimens analyzed.



Supplementary Fig. 2 IgG, IgA, IgM and total Ig antibody responses against negative control antigens in serum samples collected from study participants before BNT162b2 vaccination (n=180). GST was used as a negative control antigen for recombinant SARS-CoV-2 nucleoprotein (N) and mouse promyostatin (ProMstn)-mFc(IgG2a)-6xhis protein, indicated as mFc, was used as a negative control for recombinant SARS-CoV-2 spike S1 domain.



Supplementary Fig. 3 Anti-S1 antibody responses in BNT162b2 vaccinated health care workers determined in high serum dilutions. A. IgG and total Ig antibody levels were measured with S1-based EIA in 1:1000 serum dilution (n=159). Sequential serum samples were collected before vaccination (0d), and three (3wk) and six (6wk; 3 wk after the second vaccine dose) weeks after the first dose of the BNT162b2 vaccine. **B.** Correlation between anti-S1 IgG and total Ig responses in 1:1000 diluted sera and neutralization titres against FIN-25 virus isolate.