

1 **Supplementary Information**

- 2       **1) Supplementary Table 1** - List of mutations in B.1.1.7 and B.1.351 SARS-CoV-2 clinical  
3       isolates
- 4       **2) Supplementary Table 2** - List of primers used in this study
- 5       **3) Supplementary Figure 1** – Vaccinee serum FRNT50 curves
- 6       **4) Supplementary Figure 2** – Convalescent serum FRNT50 curves
- 7       **5) Supplementary Figure 3** – Vaccine response by sex
- 8       **6) Supplementary Figure 4** – Correlates of selected demographic and clinical factors with  
9       neutralization in the COVID-19 convalescent cohort
- 10       **7) Supplementary Figure 5** – Variant focus forming assay phenotypes

11 **Supplementary Table 1. List of mutations in B.1.1.7 and B.1.351 SARS-CoV-2 clinical**  
 12 **isolates\***

Lineage	GISAID Clade	GISAID ID	Spike mutations	Non-Spike mutations
B.1.1.7	GR	EPI_ISL_683466	H69del, V70del, Y145del, #N501Y, A570D, D614G, P681H, T716I, S982A, D1118H	N D3L, N G204R, N R203K, N S235F, NS8 Q27stop, NS8 R52I, NS8 Y73C, NSP3 A890D, NSP3 A1305V, NSP3 I1412T, NSP3 T183I, NSP6 F108del, NSP6 G107del, NSP6 S106del, NSP12 P323L, NSP13 K460R, NSP14 E347G
B.1.351	GH	EPI_ISL_678570	D80A, D215G, L242del, A243del, L244del, #K417N, #E484K, #N501Y, D614G, Q677H**, A701V	E P71L, N T205I, NS3 Q57H, NS3 S171L, NSP2 T85I, NSP3 K837N, NSP5 K90R, NSP6 F108del, NSP6 G107del, NSP6 S106del, NSP12 P323L

13 # Mutation within the RBD

14 \* Obtained from BEI Resources

15 \*\* Additional mutation not found in clinical isolate

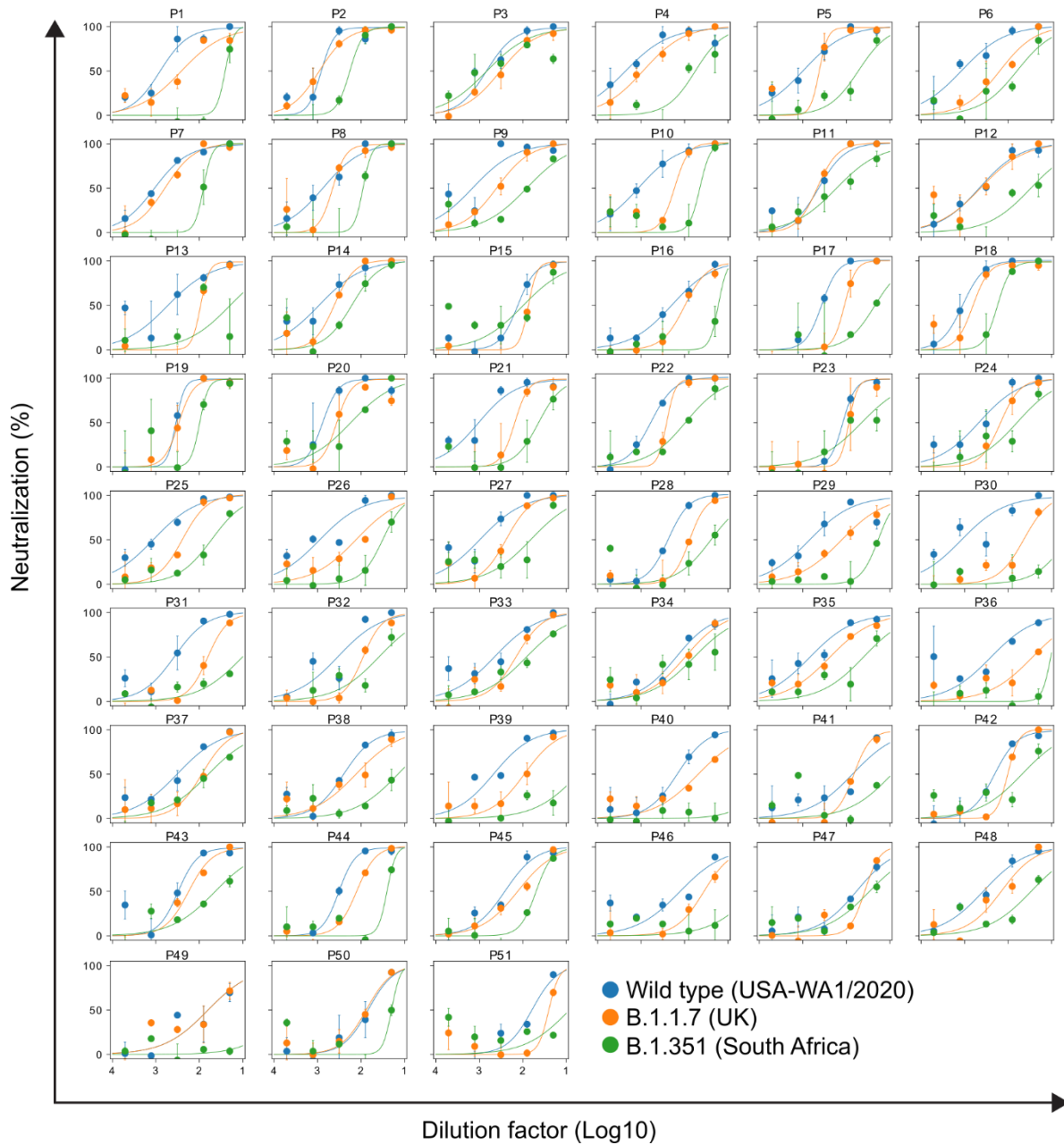
16

17 **Supplementary Table 2. List of primers used in this study**

Oligo	Sequence
M13 reverse (pCAGGS sequencing primer)	CAGGAAACAGCTATGAC
Tn5-i5-Adapter	TCGTCGGCAGCGTCTCCACGC [i5-Tn5-Index] GATCGAGGACGGCAGATGTGTATAAGAGACAG
Tn5-i7-Adapter	GTCTCGTGGGCTCGGCTGTCCTGTCC [i7-Tn5-Index] CCGTCTCCGCCTCAGATGTGTATAAGAGACAG
Tn5-ME	5Phos/CTGTCTTATACACATCT
PCR-i5-Primer	AATGATACGGCGACCACCGAGATCTACAC [i5-PCR-Index] TCGTCGGCAGCGTC
PCR-i7-Primer	CAAGCAGAAGACGGCATACGAGAT [i7-PCR-Index] GTCTCGTGGGCTCGG
Read 1 Sequencing Primer	GATCGAGGACGGCAGATGTGTATAAGAGACAG
Read 2 Sequencing Primer	CCGTCTCCGCCTCAGATGTGTATAAGAGACAG
Index 1 Sequencing Primer	CTGTCTTATACACATCTGAGGCGGAGACGG
Index 2 Sequencing Primer	CTGTCTTATACACATCTGCCGTCCTCGATC

18

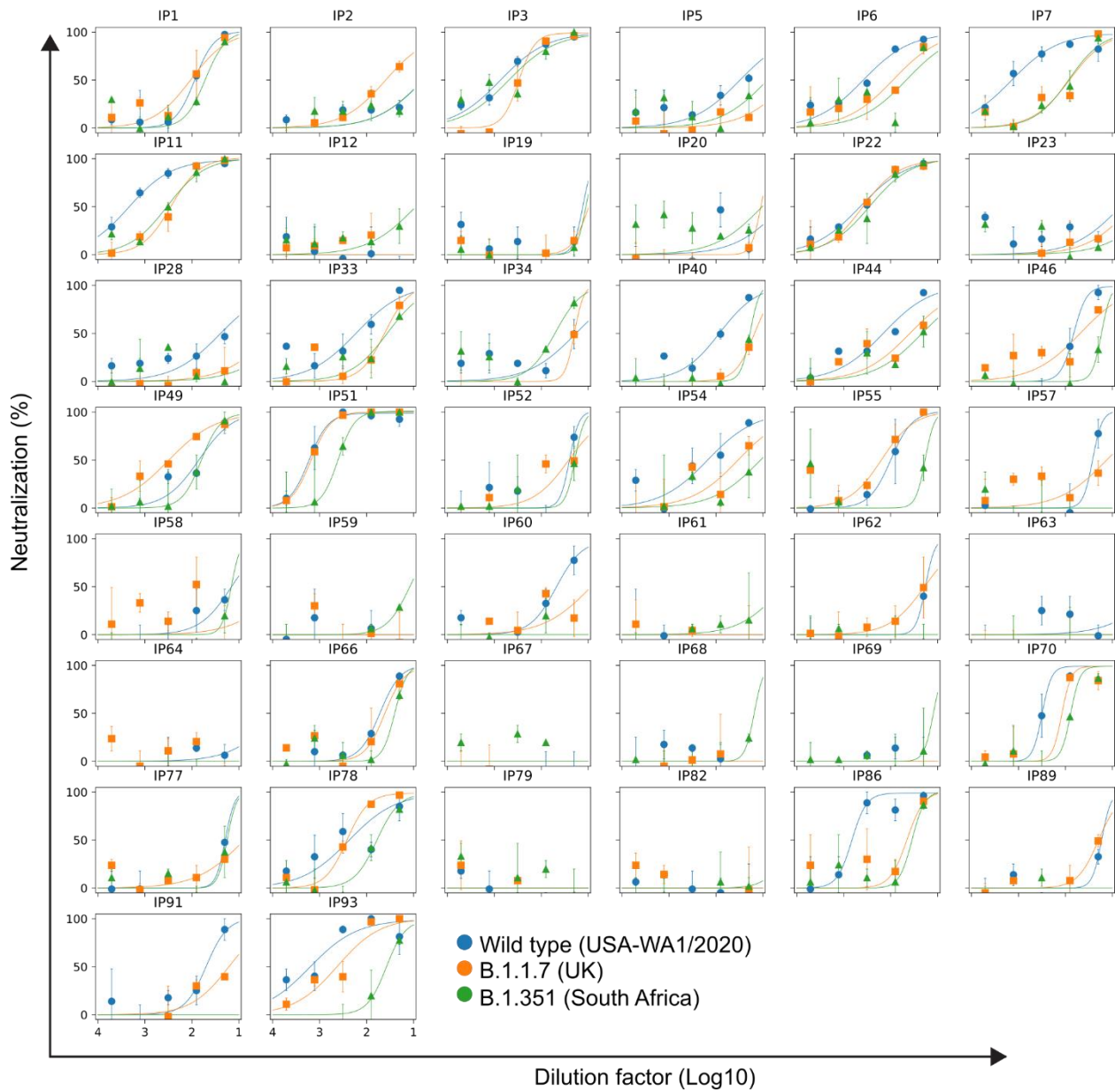
## Neutralization with the BNT162b2 (Pfizer) vaccine sera



19 **Supplementary Figure 1. Vaccinee serum FRNT50 curves.** Neutralization curves of serum (n  
20 = 51) against the different strains of SARS-CoV-2 are shown. Serum was collected two weeks  
21 after the second dose of the BNT162b2 vaccine. Error bars represent SEM of biological  
22 replicates.

23

### Neutralization of the natural infection

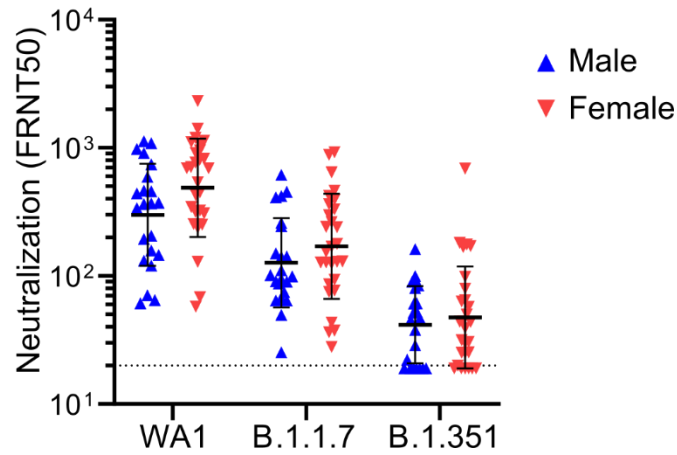


24

25 **Supplementary Figure 2. Convalescent serum FRNT50 curves.** Neutralization plots  
26 of convalescent sera (n = 44) against the different strains of SARS-CoV-2 are shown. Error bars  
27 represent SEM of biological replicates.

28

### BNT162b2 vaccine- sex correlations



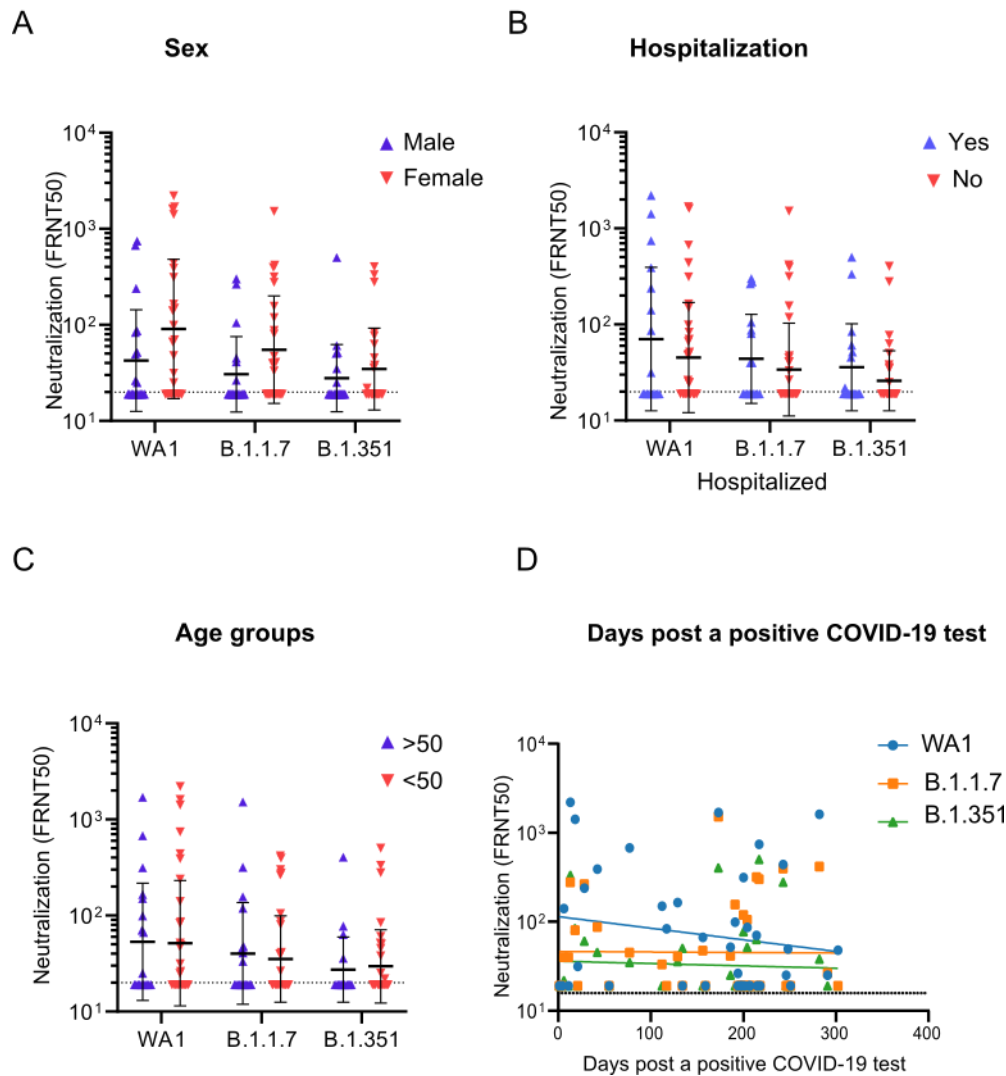
29

30 **Supplementary Figure 3. Vaccine response by sex.** Comparison of vaccine sera neutralization  
31 titers (FRNT50) of the different SARS-CoV-2 strains showing no correlation with sex. The male  
32 group contains n=22, and the female group contains n=28 independent biological samples. Data  
33 are presented as the geometric mean +/- SD with individual values shown. Statistical comparison  
34 was performed using a two-way ANOVA with the Šidák multiple comparison correction. There  
35 is no significance correlation between vaccine serum neutralization titers with sex.

36

37

### Natural infection correlates

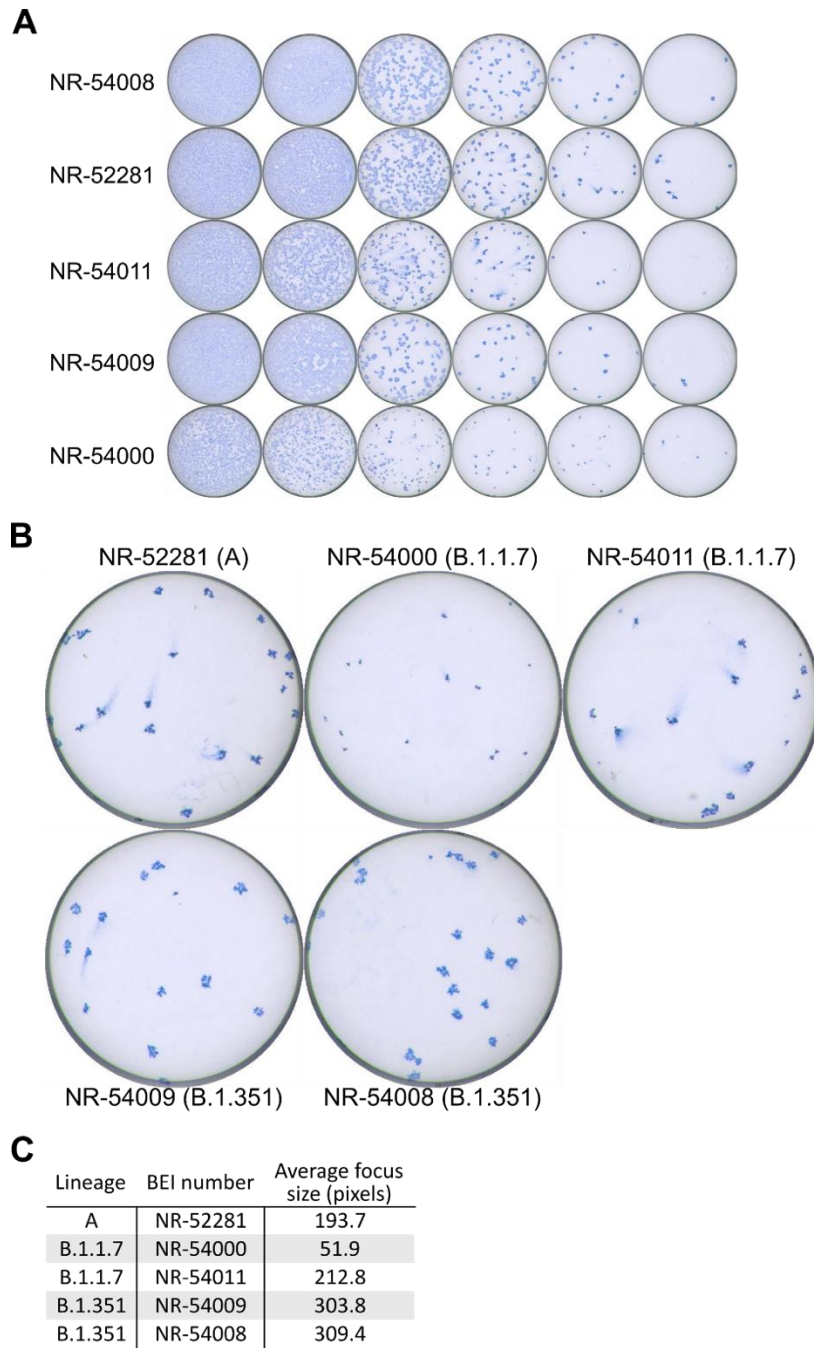


38

39 **Supplementary Figure 4. Correlates of selected demographic and clinical factors with**  
40 **neutralization in the COVID-19 convalescent cohort.** A-C) Correlation of  
41 convalescent neutralization titers with sex (male n=19, female n=25 biologically independent  
42 samples) (A), hospitalization versus ambulatory care (yes n=17, no n=37 biologically  
43 independent samples) (B), and age of COVID-19 patients (>50 n=19, <50 n=35 biologically  
44 independent samples) (C). Data are presented at the geometric mean +/- SD with individual  
45 values shown. D) comparison of FRNT50 and the number of days between the date of

46 confirmatory COVID-19 PCR test and the date of serum sample collection. Statistical  
47 comparisons were performed using a two-way ANOVA with the Šidák multiple comparison  
48 correction. There is no significant correlation between convalescent neutralization titers and sex,  
49 hospitalization, age or days after a positive COVID-19 test.





50 **Supplementary Figure 5. Variant focus forming assay phenotypes.** Focus assay well images  
 51 showing an example of the utilized titration curves for the clinical isolates tested during for assay  
 52 development (A). Increased resolution of wells with individual foci (B). Average focus size for  
 53 each isolate (C). Individual focus sizes were measured manually using ImageJ using the images

54 indicated in (B). The average size indicates the mean number of pixels across all foci in each  
55 image, excluding those contacting the edge of the well.