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Supplemental information

**SARS-CoV-2 Omicron sublineages exhibit
distinct antibody escape patterns**

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Figure S1

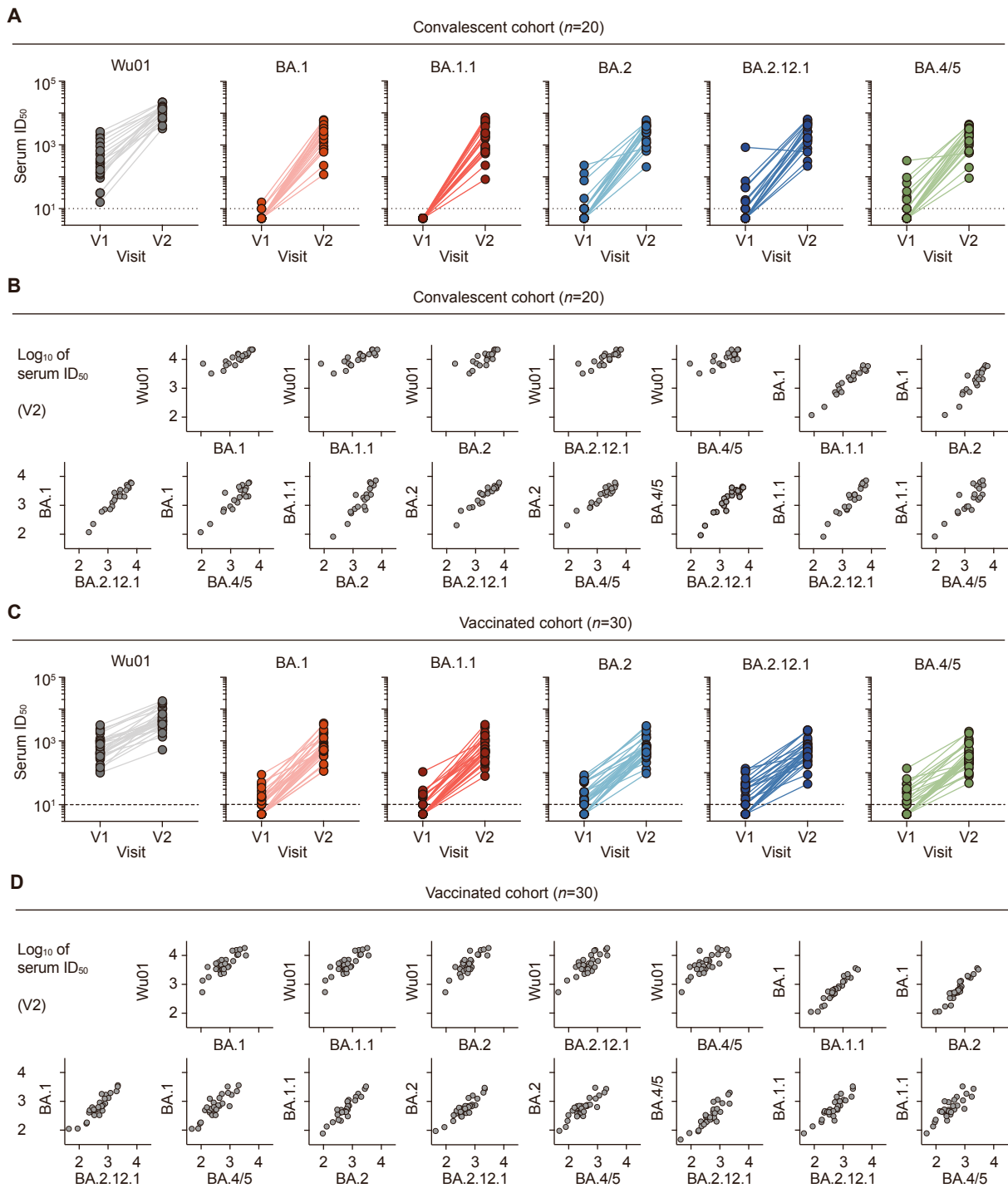


Figure S1. Serum neutralization of Omicron sublineages, Related to Figure 2

(A) Serum ID₅₀s in convalescent individuals after infection (V1) and BNT162b2 booster immunization (V2) as in Figure 2. Solid lines connect ID₅₀s of individual participants; dashed lines indicate lower limit of quantification (LLOQ, ID₅₀=10). (B) Correlation plots of log₁₀ serum ID₅₀s against indicated viruses in convalescent individuals at V2. (C) Serum ID₅₀s in the cohort of BNT162b2-vaccinated individuals after the second (V1) and third vaccine doses (V2) as in Figure 2. Solid lines connect ID₅₀s of individual participants; dashed lines indicate lower limit of quantification (LLOQ, ID₅₀=10). (D) Correlation plots of log₁₀ serum ID₅₀s against indicated viruses in vaccinated individuals at V2. In A and C, Serum ID₅₀s <LLOQ were imputed to ½x LLOQ (ID₅₀=5).

Figure S3

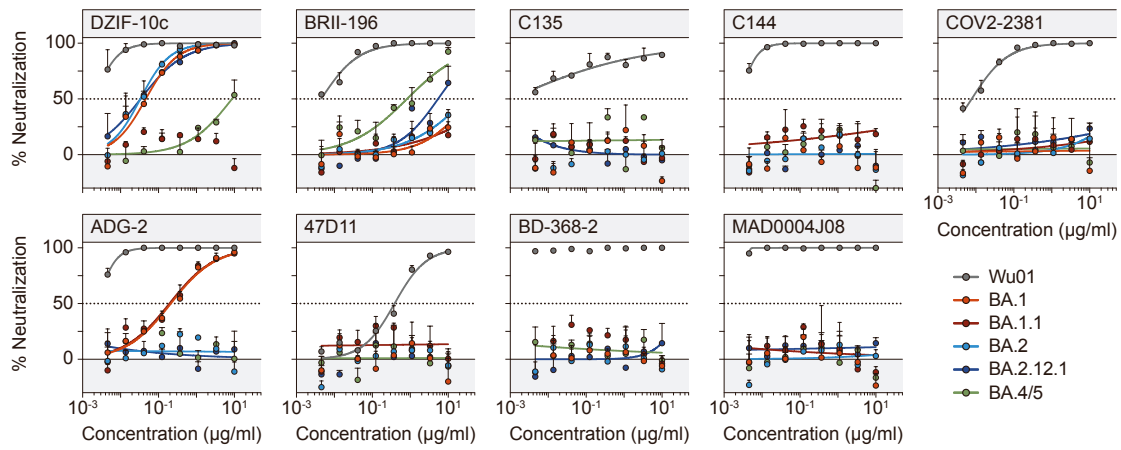


Figure S3. Omicron sublineage neutralizing activity of monoclonal antibodies in clinical testing, Related to Figure 4
Neutralization dose response curves in a pseudovirus neutralization assay. Circles show averages and error bars indicate standard deviation. Dotted lines indicate 50% neutralization (IC_{50}).

Table S1 - Study cohorts, Related to Figure 2

A Convalescent cohort	
Demographics	
Participants - <i>n</i>	20
Gender	
Female - <i>n</i> (%)	11 (55%)
Male - <i>n</i> (%)	9 (45%)
Age - median years (IQR; range)	51 (35-60; 25-73)
Reported comorbidities	
Asthma - <i>n</i> (%)	3 (15%)
Arterial hypertension - <i>n</i> (%)	2 (10%)
Malignancy - <i>n</i> (%)	2 (10%)
Gastroesophageal reflux disease - <i>n</i> (%)	1 (5%)
Infection	
Period of SARS-CoV-2 infection	February - April 2020
COVID-19 severity	
Mild symptoms - <i>n</i> (%)	19 (95%)
Asymptomatic - <i>n</i> (%)	1 (5%)
Vaccination	
Vaccine	BNT162b2
Time between infection and vaccination - median days (IQR; range)	428 (411-449; 392-483)
Study visits	
Sampling time point - median days (IQR; range)	
V1 (after disease onset)	48 (34-58; 22-75)
V2 (after vaccination)	33 (27-52; 23-68)
B Vaccine cohort	
Demographics	
Participants - <i>n</i>	30
Gender	
Female - <i>n</i> (%)	18 (60%)
Male - <i>n</i> (%)	12 (40%)
Age - median years (IQR; range)	33 (29-43; 21-59)
Reported comorbidities	
Allergic rhinitis - <i>n</i> (%)	11 (37%)
Asthma - <i>n</i> (%)	3 (10%)
Gynecologic disease - <i>n</i> (%)	3 (10%)
Cardiovascular disease - <i>n</i> (%)	2 (6%)
Diabetes - <i>n</i> (%)	2 (6%)
Hypothyroidism - <i>n</i> (%)	1 (3%)
Chronic liver/Intestinal disease - <i>n</i> (%)	1 (3%)
Neurological disorder - <i>n</i> (%)	1 (3%)
Vaccination	
Vaccine	BNT162b2
Time between first and second dose - median days (IQR; range)	21 (21-21; 21-28)
Time between second and third dose - median days (IQR; range)	274 (267-286; 173-307)
Study visits	
Sampling time point - median days (IQR; range)	
V1 (after second dose)	28 (27-32; 20-49)
V2 (after third dose)	29 (26-35; 21-57)

Table S2 - Human monoclonal antibody panel analysis, Related to Figure 3

#	Name	Epitope	Pseudovirus IC ₅₀ (µg/ml)					Heavy chain				Light chain				Donor	Ref.	
			Wu01	BA.1	BA.1.1	BA.2	BA.2.12.1	BA.4/5	V gene	GL id. (%) ^a	# aa mut. ^b	CDR3 # aa ^c	V gene	GL id. (%) ^a	# aa mut. ^b			CDR3 # aa ^c
1	2-7	RBD	0.022	>10	>10	0.296	0.333	0.292	2-5	100.0	0	11	L2-14	93.9	6	9	Fab2	1
2	2-15	RBD	<0.005	>10	>10	>10	>10	>10	1-2	95.9	4	22	L2-14	95.9	4	10	Fab2	1
3	2-30	RBD	0.775	>10	>10	>10	>10	>10	3-30	96.9	3	12	K1-9	95.8	4	9	Fab2	1
4	2-36	RBD	0.062	>10	9.885	>10	>10	>10	4-61	96.0	4	20	K3-20	100.0	0	9	Fab2	1
5	2-38	RBD	2.059	>10	>10	>10	>10	>10	3-21	99.0	1	14	L3-19	96.8	3	9	Fab2	1
6	2-43	RBD	3.779	>10	>10	>10	>10	>10	1-2	98.0	2	22	L2-14	96.9	3	10	Fab2	1
7	4-20	RBD	0.029	>10	>10	>10	>10	>10	1-46	95.9	4	13	K1-39	97.9	2	10	Fab4	1
8	B38	RBD	1.000	>10	>10	>10	>10	>10	3-53	99.0	1	9	K1-9	97.9	2	10	n.a.	2
9	Bamlanivimab	RBD	<0.005	>10	>10	>10	>10	>10	1-69	99.0	1	18	K1-39	97.9	2	9	n.a.	3
10	BD-236	RBD	0.018	>10	>10	>10	>10	>10	3-53	96.9	3	12	K1-9	96.8	3	9	Patient 1-64	4
11	BD-368-2	RBD	<0.005	>10	>10	>10	>10	>10	3-23	90.8	9	18	K2-28	100.0	0	9	Patient 1-64	4
12	BD23	RBD	0.831	>10	>10	>10	>10	>10	7-4-1	100.0	0	19	K1-5	100.0	0	9	Patient 1-64	4
13	C002	RBD	<0.005	>10	>10	>10	>10	>10	3-30	98.0	2	17	K1-39	98.9	1	9	COV21	5
14	C022	RBD	0.203	>10	>10	>10	>10	>10	4-39	97.0	3	21	K1-5	97.9	2	9	COV21	5
15	C101	RBD	0.016	>10	>10	>10	>10	>10	3-53	94.8	5	11	K3-20	96.9	3	9	COV107	5
16	C102	RBD	0.027	>10	>10	>10	>10	>10	3-53	96.9	3	11	K3-20	100.0	0	9	COV107	5
17	C104	RBD	0.046	>10	>10	>10	>10	>10	4-34	93.8	6	17	K3-20	94.8	5	9	COV107	5
18	C105	RBD	0.058	>10	>10	>10	>10	>10	3-53	99.0	1	12	L2-8	98.0	2	11	COV107	5
19	C123	RBD	0.137	>10	>10	>10	>10	>10	3-53	97.9	2	10	K1-9	100.0	0	9	COV107	5
20	C125	RBD	0.021	>10	>10	>10	>10	>10	1-58	99.0	1	16	K3-20	100.0	0	9	COV107	5
21	C128	RBD	0.295	>10	>10	>10	>10	>10	3-23	90.7	9	18	K3-20	93.7	6	10	COV072	5
22	C135	RBD	<0.005	>10	>10	>10	>10	>10	3-30	95.9	4	12	K1-5	96.8	3	9	COV072	5
23	C140	RBD	0.020	>10	>10	>10	>10	>10	3-66	94.8	5	11	K1-9	100.0	0	9	COV072	5
24	C144	RBD	<0.005	>10	>10	>10	>10	>10	3-53	96.9	3	25	L2-14	99.0	1	10	COV047	5
25	C155	RBD	0.009	>10	>10	>10	>10	>10	3-53	97.9	2	11	K3-15	98.9	1	9	COV047	5
26	C165	RBD	0.083	>10	>10	>10	>10	>10	1-69	96.9	3	15	K3-20	99.0	1	9	COV072	5
27	C210	RBD	0.058	>10	>10	>10	>10	>10	3-53	97.9	2	11	K1-9	100.0	0	10	COV96	5
28	CC6.31	RBD	0.035	>10	>10	>10	>10	>10	1-46	94.9	5	12	K1-17	100.0	0	10	CC6	6
29	CC6.33	RBD	0.062	>10	>10	>10	>10	>10	1-69	95.9	4	11	K3-20	98.9	1	9	CC6	6
30	CC12.4	RBD	4.951	>10	>10	>10	>10	>10	1-2	96.9	3	19	L2-8	96.0	4	10	CC12	6
31	CnC21p1_B4	RBD	0.173	>10	>10	>10	>10	>10	1-18	100.0	0	12	L2-23	99.0	1	10	CnC2	7
32	CnC21p1_D6	RBD	1.726	>10	>10	>10	>10	>10	3-49	100.0	0	17	K2-28	100.0	0	9	CnC2	7
33	CnC21p1_E8	RBD	0.449	>10	>10	>10	>10	>10	1-2	85.7	14	13	L2-23	90.9	9	10	CnC2	7
34	CnC21p1_E12	RBD	1.175	>10	>10	>10	>10	>10	3-49	99.0	1	17	K2-28	100.0	0	9	CnC2	7
35	CnC21p1_G6	RBD	5.616	>10	>10	>10	>10	>10	1-2	85.7	14	13	L2-23	89.9	10	10	CnC2	7
36	COV2-2050	RBD	<0.005	>10	>10	>10	>10	>10	1-2	95.9	4	23	L1-44	94.8	5	11	n.a.	8
37	COV2-2064	RBD	0.500	>10	>10	>10	>10	>10	1-8	91.8	8	16	L1-44	91.8	8	11	n.a.	8
38	COV2-2068	RBD	0.045	1.283	0.968	1.330	0.821	0.497	3-53	93.8	6	16	L1-40	96.0	4	12	n.a.	8
39	COV2-2098	RBD	0.006	>10	>10	>10	>10	>10	3-23	87.9	11	11	K3-15	91.6	8	9	n.a.	8
40	COV2-2130	RBD	<0.005	6.848	>10	0.008	0.014	0.085	3-15	96.0	4	22	K4-1	96.0	4	8	n.a.	8
41	COV2-2196	RBD	<0.005	>10	>10	>10	>10	>10	1-58	98.0	2	16	K3-20	98.9	1	10	n.a.	8
42	COV2-2268	RBD	0.510	>10	>10	3.324	4.248	4.071	2-5	98.0	2	11	L2-14	97.0	3	11	n.a.	8
43	COV2-2308	RBD	0.007	>10	>10	>10	>10	>10	3-23	87.9	11	10	K3-15	91.6	8	9	n.a.	8
44	COV2-2354	RBD	0.458	>10	>10	>10	>10	>10	3-53	89.6	10	12	L6-57	100.0	0	10	n.a.	8
45	COV2-2381	RBD	0.008	>10	>10	>10	>10	>10	1-58	98.0	2	16	K3-20	95.8	4	10	n.a.	8
46	COV2-2479	RBD	<0.005	>10	>10	>10	>10	>10	1-69	90.8	9	14	K3-15	96.8	3	8	n.a.	8
47	COV2-2499	RBD	0.012	>10	>10	>10	>10	>10	4-39	98.0	2	19	L3-19	95.8	4	11	n.a.	8
48	COV2-2531	RBD	0.366	>10	>10	>10	>10	>10	4-59	90.7	9	12	L6-57	95.9	4	9	n.a.	8
49	COV2-2539	RBD	0.562	>10	>10	>10	>10	>10	1-8	94.9	5	16	L1-44	92.9	7	11	n.a.	8
50	COV2-2562	RBD	0.427	>10	>10	>10	>10	>10	1-8	91.8	8	16	L1-44	91.8	8	11	n.a.	8
51	COV2-2677	RBD	3.904	>10	>10	>10	>10	>10	4-39	99.0	1	12	L6-57	100.0	0	10	n.a.	8
52	COV2-2678	RBD	0.009	>10	>10	>10	>10	>10	3-20	94.8	5	22	L3-19	96.8	3	11	n.a.	8
53	COV2-2752	RBD	0.028	>10	>10	>10	>10	>10	3-53	95.9	4	10	K1-33	97.9	2	9	n.a.	8
54	COV2-2841	RBD	0.345	>10	>10	>10	>10	>10	4-59	94.8	5	12	L6-57	98.0	2	9	n.a.	8
55	COV2-2919	RBD	0.071	>10	>10	>10	>10	>10	2-70	97.0	3	12	K1-39	94.7	5	9	n.a.	8
56	COV2-2952	RBD	0.010	>10	>10	>10	>10	>10	3-66	93.8	6	11	K1-9	94.7	5	9	n.a.	8
57	COV2-2955	RBD	0.018	>10	>10	>10	>10	>10	3-30	95.9	4	22	K2D-29	98.0	2	9	n.a.	8
58	COVA2-29	RBD	0.837	>10	>10	>10	>10	>10	3-30	97.9	2	18	K1-39	98.9	1	9	COSCA2	9
59	CV-X2-106	RBD	0.088	>10	>10	>10	>10	>10	1-69	100.0	0	18	K1-39	97.9	2	9	CV-X2	10
60	CV07-262	RBD	0.005	>10	>10	>10	>10	>10	1-2	96.9	3	22	L2-23	98.0	2	10	CV07	10
61	CV07-270	RBD	0.016	>10	>10	>10	>10	>10	3-11	99.0	1	22	L2-14	98.0	2	10	CV07	10
62	CV38-139	RBD	0.039	>10	>10	>10	>10	>10	3-66	97.9	2	10	K1-9	100.0	0	10	CV38	10
63	CV38-142	RBD	1.285	>10	>10	>10	>10	>10	5-51	95.9	4	16	K1-39	100.0	0	11	CV38	10
64	DH1042	RBD	0.008	>10	>10	>10	>10	>10	1-69	96.9	3	16	K1-39	97.9	2	9	Donor 26	11
65	DH1128	RBD	3.146	>10	>10	>10	>10	>10	3-23	88.8	11	8	K6-21	94.7	5	9	Donor 26	11
66	DH1138	SI*	2.256	>10	>10	>10	>10	>10	4-61	97.0	3	12	K3-11	97.9	2	8	Donor 26	11
67	DH1184	RBD	0.007	>10	>10	>10	>10	>10	1-69	95.9	4	18	K3-20	100.0	0	9	Donor 26	11
68	DH1210	RBD	0.421	>10	>10	>10	>10	>10	1-69-2	91.8	8	12	L1-47	91.8	8	12	Donor 26	11
69	DZIF-10c	RBD	<0.005	0.046	>10	0.033	0.034	8.638	3-30	88.8	11	13	K1-5	89.4	10	9	HbnC3	7
70	Etesevimab	RBD	0.018	>10	>10	>10	>10	>10	3-66	96.9	3	13	K1-39	97.9	2	11	n.a.	12
71	FnC112p1_G4	RBD	0.008	>10	>10	>10	>10	>10	7-4-1	93.9	6	11	K1-33	96.8	3	9	FnC1	7
72	FnC112p1_G5	RBD	0.012	>10	>10	>10	>10	>10	7-4-1	93.9	6	11	K1-33	96.8	3	9	FnC1	7
73	GW01	RBD	0.072	>10	>10	>10	>10	>10	3-43	94.9	5	20	L1-44	100.0	0	10	n.a.	13
74	HbnC21p2_D9	RBD	0.046	>10	>10	>10	>10	>10	3-33	95.9	4	19	K3-11	97.9	2	11	HbnC2	7
75	HbnC31p1_C6	RBD	<0.005	9.482	>10	>10	>10	>10	1-58	100.0	0	16	K3-20	99.0	1	9	HbnC3	7
76	HbnC31p1_G4	RBD																

Table S2 - Human monoclonal antibody panel analysis, Related to Figure 3 (continued)

#	Name	Epitope	Pseudovirus IC ₅₀ (µg/ml)					Heavy chain				Light chain				Donor	Ref.	
			Wu01	BA.1	BA.1.1	BA.2	BA.2.12.1	BA.4/5	V gene	GL id. (%) ^a	# aa mut. ^b	CDR3 # aa ^c	V gene	GL id. (%) ^a	# aa mut. ^b			CDR3 # aa ^c
91	P2B-2F6	RBD	0.035	>10	>10	>10	>10	>10	4-38-2	99.0	1	20	L2-8	100.0	0	10	P2	17
92	P2C-1F11	RBD	0.008	>10	>10	>10	5.398	0.820	3-66	95.9	4	11	K3-20	100.0	0	8	P2	17
93	R40-1A1	RBD	0.007	>10	>10	>10	>10	>10	1-18	83.7	16	17	K2-40	95.1	5	9	R40	18
94	R40-1A8	RBD	<0.005	>10	>10	0.729	0.295	0.226	3-43	93.9	6	16	L2-14	94.9	5	10	R40	18
95	R40-1B4	RBD	<0.005	>10	>10	>10	>10	>10	1-2	90.8	9	23	L1-40	94.8	5	9	R40	18
96	R40-1B9	RBD	0.012	>10	>10	>10	>10	>10	2-70	96.0	4	11	K1-39	95.8	4	9	R40	18
97	R40-1C8	RBD	0.012	0.079	0.085	0.032	0.027	5.324	3-53	93.8	6	11	K1-9	97.9	2	10	R40	18
98	R40-1D3	RBD	<0.005	>10	8.296	<0.005	<0.005	<0.005	3-23	88.8	11	14	L2-14	93.9	6	10	R40	18
99	R40-1E1	RBD	0.214	>10	6.880	>10	>10	>10	3-33	94.9	5	24	K3-20	96.9	3	9	R40	18
100	R40-1E4	RBD	<0.005	>10	>10	>10	>10	>10	1-2	95.9	4	13	K3-20	93.7	6	8	R40	18
101	R40-1G6	S1*	0.823	0.546	0.592	0.263	0.394	0.396	3-33	89.8	10	15	K1-39	93.7	6	9	R40	18
102	R40-1G8	RBD	<0.005	0.495	0.575	1.178	0.497	0.692	3-53	91.8	8	11	K1-9	97.8	2	9	R40	18
103	R40-1G12	RBD	0.023	>10	>10	>10	>10	>10	1-2	100.0	0	17	L2-14	99.0	1	12	R40	18
104	R40-1H4	RBD	<0.005	>10	>10	>10	>10	>10	1-2	90.8	9	15	L2-11	97.9	2	9	R40	18
105	R121-1F1	RBD	<0.005	3.935	1.827	0.014	0.029	0.045	3-30	90.8	9	14	L1-40	91.9	8	11	R121	18
106	R121-3F7	RBD	0.055	>10	>10	>10	>10	>10	4-61	97.0	3	19	L1-40	95.9	4	11	R121	18
107	R121-3F11	RBD	0.406	0.667	0.845	0.800	2.209	>10	4-59	88.7	11	20	L1-40	96.0	4	11	R121	18
108	R121-3G2	RBD	0.292	4.288	3.543	>10	>10	>10	4-39	87.9	12	21	K3-20	88.5	11	9	R121	18
109	R200-1B8	RBD	0.008	>10	>10	>10	>10	>10	4-31	91.9	8	19	L1-40	95.9	4	11	R200	18
110	R200-1B9	RBD	<0.005	0.038	0.052	0.092	0.032	>10	1-58	93.9	6	16	K3-20	94.8	5	9	R200	18
111	R200-1F9	RBD	<0.005	0.023	0.025	0.026	0.017	0.017	3-48	90.8	9	15	K3-11	94.7	5	9	R200	18
112	R200-1G11	RBD	<0.005	>10	>10	>10	>10	>10	4-31	94.9	5	18	K1-39	92.6	7	9	R200	18
113	R200-4F4	RBD	0.008	>10	>10	>10	>10	>10	1-69	93.9	6	25	K1-33	97.9	2	9	R200	18
114	R207-1C1	RBD	<0.005	>10	>10	>10	>10	>10	1-69	86.7	13	14	K3-15	98.9	1	8	R207	18
115	R207-1C4	RBD	0.016	>10	>10	>10	>10	>10	3-53	91.8	8	11	K1-9	96.8	3	8	R207	18
116	R207-1G1	RBD	0.102	>10	>10	>10	>10	>10	1-18	93.9	6	12	L2-23	99.0	1	10	R207	18
117	R207-2A6	RBD	0.014	2.575	4.952	2.528	1.599	1.850	3-53	89.7	10	11	K3-15	98.9	1	9	R207	18
118	R207-2A10	RBD	<0.005	>10	>10	>10	>10	>10	1-8	92.9	7	15	L2-23	99.0	1	11	R207	18
119	R207-2C2	RBD	0.010	>10	>10	>10	>10	>10	3-53	91.8	8	12	L2-8	93.8	6	10	R207	18
120	R207-2F11	RBD	<0.005	<0.005	0.006	0.006	<0.005	0.011	3-53	89.7	10	11	K1-33	90.5	9	9	R207	18
121	R207-2G4	RBD	0.021	0.052	0.079	0.239	0.201	0.303	3-53	92.8	7	11	K1-9	90.4	9	5	R207	18
122	R207-2H1	RBD	<0.005	>10	>10	>10	>10	>10	1-46	88.8	11	18	L1-40	91.7	8	12	R207	18
123	R259-1B9	RBD	<0.005	0.369	0.262	0.614	0.211	>10	1-58	91.8	8	16	K3-20	94.8	5	9	R259	18
124	R339-1B11	RBD	<0.005	1.090	1.946	0.161	>10	>10	3-7	88.8	11	16	K2-28	97.0	3	9	R339	18
125	R339-3B5	S2	1.158	5.954	4.139	3.596	>10	>10	1-46	81.6	18	11	K3-20	92.7	7	11	R339	18
126	R339-3C6	S1*	2.657	>10	>10	>10	>10	>10	4-59	92.8	7	20	K2D-29	89.0	11	9	R339	18
127	R410-1A8	RBD	0.347	0.507	0.610	1.304	3.547	2.394	2-5	92.9	7	15	K1D-12	94.7	5	9	R410	18
128	R568-1A9	RBD	<0.005	7.558	>10	0.013	0.014	>10	1-69	88.8	11	17	K1-5	94.7	5	10	R568	18
129	R568-1B3	RBD	0.010	2.954	1.954	>10	1.678	1.829	3-53	91.8	8	11	K1-9	94.6	5	9	R568	18
130	R568-1C6	RBD	<0.005	>10	>10	0.017	1.862	>10	1-69	92.8	7	18	K1-5	97.9	2	10	R568	18
131	R568-1E8	RBD	0.048	>10	>10	>10	>10	>10	3-53	96.9	3	11	K1-9	96.8	3	9	R568	18
132	R568-1G9	RBD	0.007	0.006	0.006	0.005	<0.005	0.045	3-66	96.9	3	12	L1-40	99.0	1	10	R568	18
133	R568-2A1	RBD	0.295	>10	>10	>10	>10	>10	3-11	95.9	4	15	L1-47	99.0	1	11	R568	18
134	R568-2A3	RBD	<0.005	>10	>10	>10	>10	>10	1-2	89.8	10	15	L2-8	97.0	3	10	R568	18
135	R568-2B9	RBD	0.014	>10	>10	>10	>10	>10	3-53	89.7	10	11	K1-9	95.8	4	10	R568	18
136	R568-2B11	RBD	0.014	2.638	2.624	3.749	0.609	0.416	3-53	93.8	6	11	K1-9	95.8	4	10	R568	18
137	R568-2E1	RBD	0.006	>10	>10	>10	>10	>10	3-53	93.8	6	11	K1-9	97.8	2	9	R568	18
138	R568-2E7	S1*	0.007	>10	>10	0.009	0.007	<0.005	3-23	90.7	9	8	K3-15	97.9	2	10	R568	18
139	R568-2F1	RBD	0.009	>10	>10	>10	>10	>10	1-69	89.7	10	17	L1-47	94.8	5	12	R568	18
140	R568-2G5	RBD	0.006	0.684	0.973	1.648	0.640	2.122	3-53	91.8	8	11	K1-9	95.8	4	11	R568	18
141	R568-2G11	RBD	<0.005	0.042	>10	0.007	0.012	0.006	3-15	92.0	8	15	K1-8	95.8	4	9	R568	18
142	R616-1A11	RBD	0.037	>10	>10	>10	>10	>10	1-69	88.7	11	16	K1-5	93.7	6	11	R616	18
143	R616-1D6	RBD	3.278	>10	>10	>10	>10	>10	4-34	83.5	16	20	K1-39	90.5	9	9	R616	18
144	R616-1F10	RBD	0.052	>10	>10	>10	>10	>10	3-30	86.7	13	17	L1-44	94.9	5	12	R616	18
145	R616-1G4	RBD	0.005	>10	>10	>10	>10	>10	3-53	96.9	3	15	L2-14	97.0	3	12	R616	18
146	R849-1C11	RBD	0.409	1.811	2.062	7.581	5.386	5.023	4-30-4	94.9	5	27	L2-18	97.0	3	10	R849	18
147	R849-1G7	RBD	<0.005	>10	>10	>10	>10	>10	1-2	90.8	9	16	L2-23	91.8	8	10	R849	18
148	R849-1H1	RBD	0.132	>10	>10	>10	>10	>10	3-33	96.9	3	20	K1-39	96.8	3	10	R849	18
149	R849-3H2	RBD	0.013	>10	>10	>10	>10	>10	3-30	92.9	7	14	K1-39	97.9	2	8	R849	18
150	REGN10954	RBD	0.009	1.641	1.583	0.117	0.046	0.212	3-66	96.9	3	13	K1-33	94.7	5	9	Donor_3	14
151	REGN10955	RBD	0.017	>10	>10	1.319	0.212	0.857	3-66	95.9	4	9	K1-33	97.9	2	9	Donor_3	14
152	REGN10964	RBD	<0.005	>10	>10	>10	>10	>10	4-59	94.8	5	12	K1-39	93.7	6	9	Donor_1	14
153	REGN10970	RBD	0.014	>10	>10	>10	>10	>10	3-66	96.9	3	14	K1-33	98.9	1	9	Donor_1	14
154	REGN10971	RBD	0.008	>10	>10	5.290	1.046	>10	3-53	95.9	4	11	K1-9	97.9	2	10	Donor_1	14
155	REGN10977	RBD	<0.005	>10	>10	>10	>10	>10	1-69	95.9	4	16	K3-20	95.8	4	9	Donor_1	14
156	REGN10986	RBD	0.006	0.381	0.192	>10	0.885	>10	3-66	97.9	2	13	L1-40	98.0	2	12	Donor_1	14
157	REGN10989	RBD	<0.005	>10	>10	>10	>10	>10	1-2	93.9	6	16	L2-14	92.9	7	10	Donor_3	14
158	S2X35	RBD	0.057	>10	>10	>10	>10	>10	1-18	98.0	2	21	L1-40	99.0	1	13	Donor S2X	19

a Amino acid identity relative to germline gene (framework region 1 to framework region 3).
b Number of amino acid mutations relative to germline gene (framework region 1 to framework region 3).
c Length of CDR3 in amino acids.
* Indicates epitope in S1 domain of SARS-CoV-2 spike protein outside of receptor-binding domain (e.g., N-terminal domain).
n.a. Indicates that donor ID was not unambiguously identified.
RBD Receptor-binding domain.
Ref. References:

1, Liu L. et al., 2020; 2, Wu Y. et al., 2020; 3, Jones B.E. et al., 2021; 4, Cao Y. et al., 2020; 5, Robbiani D.F. et al., 2020; 6, Rogers T.F. et al., 2020; 7, Kreer C. et al., 2020; 8, Zost S.J. et al., 2020; 9, Brouwer P.J.M. et al., 2020; 10, Kreye J. et al., 2020; 11, Li D. et al., 2021; 12, Shi R. et al., 2020; 13, Wang Y. et al., 2022; 14, Hansen J. et al., 2020; 15, Westendorp K. et al., 2022; 16, Andreano E. et al., 2021; 17, Ju B. et al., 2020; 18, Vanshilla K. et al., 2022; 19, Piccoli L. et al., 2020.