

Supplementary Table 1. Kinetics of monomeric human ACE2 binding to immobilized SARS-CoV-2 variant RBDs as measured by biolayer interferometry.

	K_D (nM)	k_{on} (M⁻¹s⁻¹)	k_{off}(s⁻¹)
Wu	101.1 ± 7.3	1.30 × 10 ⁵	1.31 × 10 ⁻²
BA.4/5	12.8 ± 2.2	1.45 × 10 ⁵	1.82 × 10 ⁻³
BA.2.75.2	26.2 ± 1.7	1.35 × 10 ⁵	3.52 × 10 ⁻³
BQ.1.1	13.7 ± 1.4	1.39 × 10 ⁵	1.89 × 10 ⁻³
XBB.1	88.4 ± 11.9	1.47 × 10 ⁵	1.29 × 10 ⁻²
XBB.1.5	26.8 ± 5.0	1.20 × 10 ⁵	3.14 × 10 ⁻³

Values are presented as mean ± standard deviations obtained from 2-3 batches of each RBD and ACE2.

Supplementary Table 2. Kinetics of monomeric human ACE2 binding to immobilized SARS-CoV-2 variant RBDs as measured by surface plasmon resonance.

RBD	Average k_{on} (1/Ms)	stdev(k_a)	Average k_{off} (1/s)	stdev(k_d)	Average K_D (nM)	stdev(K_D)	# of replicates
Wu	7.18E+04	6.39E+03	6.19E-03	1.62E-04	86.91	8.82	7
Wu-E340A	5.66E+04	8.96E+03	6.01E-03	8.01E-04	106.71	4.78	6
BQ.1.1	4.22E+04	7.97E+03	7.91E-04	2.08E-05	19.26	3.21	6
BA.2.75.2	3.53E+04	7.28E+02	1.50E-03	5.43E-05	42.38	1.32	3
BA.4/5	3.31E+04	3.97E+03	9.32E-04	1.30E-04	28.22	2.74	8
XBB	4.48E+04	8.15E+03	4.19E-03	8.52E-04	93.48	4.72	3
XBB.1.5	5.58E+04	1.20E+03	1.48E-03	2.45E-05	26.58	0.16	4

Supplementary Table 3. Statistically significant differences of mean neutralization titers.

Fig. 3a	Mean rank diff.	Significant?	Adjusted P Value
Wu-D614 vs. BA.2	-40.4	***	<0.001
Wu-D614 vs. BQ.1	-44.9	***	<0.001
Wu-D614 vs. BQ.1.1	-61.5	***	<0.001
Wu-D614 vs. BF.7	-56.5	***	<0.001
Wu-D614 vs. BN.1	-67	***	<0.001
Fig. 3b	Mean rank diff.	Significant?	Adjusted P Value
Wuhan vs. BA.2	-48.4	Yes	<0.001
Wuhan vs. BQ.1	-35.1	Yes	0.01
Wuhan vs. BQ.1.1	-43.1	Yes	<0.001
Wuhan vs. BN.1	-56.3	Yes	<0.001
Wuhan vs. E340A	-60.3	Yes	<0.001
Fig. 3d	Mean rank diff.	Significant?	Adjusted P Value
sotrovimab vs. S309-GRLR	35.2	*	0.04
sotrovimab vs. S309-GRLR	42.2	**	0.003
sotrovimab vs. S309-GRLR	40.7	*	0.02
Fig. 3d	Mean rank diff.	Significant?	Adjusted P Value
sotrovimab vs. S309-GRLR	40.3	**	0.007
sotrovimab vs. S309-GRLR	37	*	0.02
sotrovimab vs. S309-GRLR	34.6	*	0.04
sotrovimab vs. S309-GRLR	48.3	**	0.009
sotrovimab vs. S309-GRLR	41.5	*	0.05
sotrovimab vs. sotrovimab	53.8	**	0.002
sotrovimab vs. S309-GRLR	48.8	**	0.008

Supplementary Table 4. Kinetics of S309 Fab binding to immobilized SARS-CoV-2 variant RBDs as measured by surface plasmon resonance.

RBD	average k_{on} (1/Ms)	stdev(k_{on})	average k_{off} (1/s)	stdev (k_{off})	average K_D (nM)	stdev(K_D)	number of replicates
Wu	8.86E+04	8.76E+03	1.38E-05	1.05E-05	0.20	0.12	12
Wu-E340A	NB	N/A	NB	N/A	NB	N/A	6
Delta (His avi)	8.42E+04	1.02E+04	2.56E-05	4.89E-06	0.33	0.08	4
BA.1	2.21E+04	2.27E+03	2.48E-04	2.54E-05	11.35	2.08	6
BA.2	2.16E+04	2.01E+03	7.05E-04	5.25E-05	32.88	2.79	8
BA.2.75.2	2.55E+04	3.14E+03	2.80E-05	5.52E-06	0.86	0.25	6
BQ.1	2.51E+04	1.39E+03	4.40E-04	3.60E-05	17.63	2.31	5
BQ.1.1	2.27E+04	1.67E+03	6.43E-04	7.37E-05	28.47	3.89	8
XBB	2.57E+04	2.24E+03	4.12E-05	2.00E-05	1.56	0.74	6
XBB.1.5	2.76E+04	2.41E+03	4.45E-05	3.01E-06	1.61	0.08	8
CH.1.1	3.33E+04	6.40E+02	1.67E-05	4.56E-07	0.50	0.02	4
BN.1	8.92E+02	1.14E+02	6.85E-05	3.08E-05	74.70	28.01	5
BN.1 + PNGase F	1.50E+03	1.97E+02	2.59E-04	3.58E-06	174.4	20.5	2
BN.1-T356K	2.09E+04	8.70E+00	4.50E-05	4.27E-06	2.16	0.2	2

NB: no binding; N/A: not applicable.

Supplementary Table 5. Donors' demographics.

Donor ID	Gender	Age	Vaccine doses	COVID diagnosis	SARS-CoV-2 variant	Δ sample-vaccine (days)	Cohort
8H	M	79	4	no	/	72	Wu ₄ vacc
15H	M	52	4	no	/	5	Wu ₄ vacc
17H	M	76	4	no	/	21	Wu ₄ vacc
25H	M	60	4	no	/	16	Wu ₄ vacc
27H	M	59	4	no	/	42	Wu ₄ vacc
30H - 4X	F	61	4	no	/	17	Wu ₄ vacc
46H	M	60	4	no	/	15	Wu ₄ vacc
69H	F	68	4	no	/	97	Wu ₄ vacc
71H - 4x	F	58	4	no	/	48	Wu ₄ vacc
76H - 4x	F	38	4	no	/	13	Wu ₄ vacc
12H	F	42	4	no	/	34	Wu/BA.5biv
16H	F	46	4	no	/	33	Wu/BA.5biv
17H	M	76	5	no	/	18	Wu/BA.5biv
29H	M	64	5	no	/	37	Wu/BA.5biv
30H - 5x	F	61	5	no	/	30	Wu/BA.5biv
31H*	F	/	3	no	/	54	Wu/BA.5biv
46H	M	60	5	no	/	16	Wu/BA.5biv
51H	F	50	4	no	/	33	Wu/BA.5biv
54H	F	34	4	no	/	27	Wu/BA.5biv
57H	M	36	5	no	/	46	Wu/BA.5biv
69H	F	68	5	no	/	42	Wu/BA.5biv
71H - 5x	F	58	5	no	/	20	Wu/BA.5biv
76H - 5x	F	38	5	no	/	60	Wu/BA.5biv
110C	M	51	5	yes	WA-1	38	preOm+biv
245C	F	28	4	yes	WA-1	25	preOm+biv
63C	F	36	4	yes	WA-1	33	preOm+biv
71C	F	69	5	yes	WA-1	28	preOm+biv
87C	M	76	5	yes	WA-1	30	preOm+biv
269C	M	41	4	yes	Gamma/P.1 & Om. BA.1	30	Om.BT+biv
318C	F	/	4	yes	Omicron	42	Om.BT+biv
319C	M	/	4	yes	Omicron	28	Om.BT+biv
324C	F	24	4	yes	Omicron	32	Om.BT+biv
331C	M	25	5	yes	Omicron	33	Om.BT+biv
345C	M	/	4	yes	Omicron	28	Om.BT+biv
388C	M	34	4	yes	Omicron BA.5	45	Om.BT+biv
392C	M	/	6	yes	Omicron BA.5	40	Om.BT+biv
400C	F	21	4	yes	Omicron BA.2	22	Om.BT+biv
403C	F	21	4	yes	Omicron BA.2.12.1	33	Om.BT+biv
407C	F	33	4	yes	Omicron BA.2	34	Om.BT+biv
414C	M	/	4	yes	Omicron BA.4	51	Om.BT+biv
415C	F	/	4	yes	Omicron BA.2	30	Om.BT+biv
422C	F	20	4	yes	Omicron BA.2	27	Om.BT+biv
424C	F	21	4	yes	Omicron BA.2.12.1	29	Om.BT+biv
425C	M	45	4	yes	Omicron BA.2.12.1	31	Om.BT+biv
428C	F	22	4	yes	Omicron BA.5	13	Om.BT+biv
445C	F	/	4	yes	Omicron BA.5	36	Om.BT+biv
56H	M	46	4	yes	Omicron*	28	Om.BT+biv
HCW199	M	67	3	no	/	18	Wu ₃ vacc
HCW225	F	50	3	no	/	25	Wu ₃ vacc
HCW229	F	45	3	no	/	20	Wu ₃ vacc
HCW239	F	33	3	no	/	26	Wu ₃ vacc
HCW243	F	29	3	no	/	27	Wu ₃ vacc
HCW198	M	52	3	yes	pre Omicron	18	preOm+vacc
HCW200	F	41	3	yes	pre Omicron	13	preOm+vacc
HCW202	M	46	3	yes	pre Omicron	13	preOm+vacc
HCW221	F	39	3	yes	pre Omicron	20	preOm+vacc
HCW224	F	49	3	yes	pre Omicron	18	preOm+vacc
HCW226	F	48	3	yes	pre Omicron	25	preOm+vacc
HCW228	M	35	3	yes	pre Omicron	20	preOm+vacc
HCW232	F	32	3	yes	pre Omicron	25	preOm+vacc
HCW234	M	27	3	yes	pre Omicron	19	preOm+vacc
HCW236	F	34	3	yes	pre Omicron	27	preOm+vacc
HCW237	F	45	3	yes	pre Omicron	20	preOm+vacc
HCW238	M	27	3	yes	pre Omicron	26	preOm+vacc

HCW240	F	30	3	yes	pre Omicron	26	preOm+vacc
HCW242	F	30	3	yes	pre Omicron	25	preOm+vacc
VC338	F	34	4	no	/	13/82	Wu/BA.1biv
VC343	F	25	4	no	/	14/83	Wu/BA.1biv
VC344	M	27	4	no	/	13/83	Wu/BA.1biv
VC345	M	53	4	no	/	14/82	Wu/BA.1biv
VC346	M	57	4	no	/	14/82	Wu/BA.1biv
VC348	M	30	4	no	/	14/82	Wu/BA.1biv
VC349	F	48	4	no	/	33/63	Wu/BA.1biv
VC339	F	45	4	yes	Omicron BA.1/BA.2	14/84	Om.BT+biv
VC340	F	36	4	yes	Omicron BA.1/BA.2	14/83	Om.BT+biv
VC341	F	31	4	yes	Omicron BA.1/BA.2	14/83	Om.BT+biv
VC342	F	28	4	yes	Omicron BA.1/BA.2	14/83	Om.BT+biv
VC347	M	37	4	yes	Omicron BA.1/BA.2	14/81	Om.BT+biv

[§]TP, timepoint. *Donor 31H received the Janssen COVID-19 vaccination as the primary vaccine series.

[&]determined by longitudinal N ELISA.

Supplementary Table 6. Kidney transplant recipients' and healthcare workers' demographics.

Donor ID	Gender	Age	No. of immuno-suppressive drugs*	Vaccine doses	COVID diagnosis	SARS-CoV-2 variant	Δ sample-vaccine (days)	Cohort
KTR-004	M	68	2	4	no	/	83	KTR Wu ₄ vacc
KTR-007	M	77	3	4	no	/	140	KTR Wu ₄ vacc
KTR-009	M	72	2	4	no	/	46	KTR Wu ₄ vacc
KTR-010	F	70	3	4	no	/	51	KTR Wu ₄ vacc
KTR-011	M	56	2	4	no	/	80	KTR Wu ₄ vacc
KTR-013	F	46	1	4	no	/	92	KTR Wu ₄ vacc
KTR-026	M	37	2	4	no	/	63	KTR Wu ₄ vacc
KTR-027	F	66	3	4	no	/	35	KTR Wu ₄ vacc
KTR-030	M	58	2	4	no	/	71	KTR Wu ₄ vacc
KTR-039	M	66	2	4	no	/	77	KTR Wu ₄ vacc
KTR-042	M	78	3	4	no	/	40	KTR Wu ₄ vacc
KTR-047	M	52	2	4	no	/	76	KTR Wu ₄ vacc
KTR-050	M	34	2	4	no	/	84	KTR Wu ₄ vacc
KTR-054	M	70	2	4	no	/	18	KTR Wu ₄ vacc
KTR-056	M	74	2	4	no	/	70	KTR Wu ₄ vacc
KTR-059	M	63	2	4	no	/	78	KTR Wu ₄ vacc
KTR-060	M	50	2	4	no	/	71	KTR Wu ₄ vacc
KTR-061	M	71	2	4	no	/	54	KTR Wu ₄ vacc
KTR-071	F	59	3	4	no	/	35	KTR Wu ₄ vacc
KTR-083	M	71	3	4	no	/	82	KTR Wu ₄ vacc
KTR-085	F	59	2	4	no	/	71	KTR Wu ₄ vacc
KTR-094	M	66	2	4	no	/	41	KTR Wu ₄ vacc
KTR-095	M	63	3	4	no	/	74	KTR Wu ₄ vacc
KTR-096	M	62	2	4	no	/	43	KTR Wu ₄ vacc
KTR-101	M	61	2	4	no	/	72	KTR Wu ₄ vacc
KTR-102	M	72	3	4	no	/	133	KTR Wu ₄ vacc
KTR-017	F	81	2	4	yes	pre Omicron	58	KTR preOm+Wu ₄ vacc
KTR-021	M	45	2	4	yes	pre Omicron	84	KTR preOm+Wu ₄ vacc
KTR-031	F	77	2	4	yes	pre Omicron	59	KTR preOm+Wu ₄ vacc
KTR-084	F	24	3	4	yes	pre Omicron	65	KTR preOm+Wu ₄ vacc
KTR-099	M	52	2	4	yes	pre Omicron	93	KTR preOm+Wu ₄ vacc
HCW-001	M	52	/	3	no	/	90	HCW Wu ₃ vacc
HCW-002	F	44	/	3	no	/	78	HCW Wu ₃ vacc
HCW-003	F	41	/	3	no	/	76	HCW Wu ₃ vacc
HCW-004	M	48	/	3	no	/	90	HCW Wu ₃ vacc
HCW-005	F	57	/	3	no	/	83	HCW Wu ₃ vacc
HCW-008	F	48	/	3	no	/	86	HCW Wu ₃ vacc
HCW-009	F	54	/	3	no	/	81	HCW Wu ₃ vacc
HCW-011	M	69	/	3	no	/	93	HCW Wu ₃ vacc
HCW-012	F	60	/	3	no	/	94	HCW Wu ₃ vacc
HCW-013	F	43	/	3	no	/	55	HCW Wu ₃ vacc
HCW-016	F	62	/	3	no	/	6	HCW Wu ₃ vacc
HCW-017	F	33	/	3	no	/	50	HCW Wu ₃ vacc
HCW-018	M	33	/	3	no	/	110	HCW Wu ₃ vacc
HCW-019	F	62	/	3	no	/	29	HCW Wu ₃ vacc
HCW-020	F	64	/	3	no	/	90	HCW Wu ₃ vacc
HCW-021	M	44	/	3	no	/	28	HCW Wu ₃ vacc
HCW-022	F	44	/	3	no	/	28	HCW Wu ₃ vacc
HCW-023	F	46	/	3	no	/	22	HCW Wu ₃ vacc
HCW-024	M	63	/	3	no	/	35	HCW Wu ₃ vacc
HCW-025	F	54	/	3	no	/	94	HCW Wu ₃ vacc
HCW-026	F	63	/	3	no	/	28	HCW Wu ₃ vacc
HCW-027	F	49	/	3	no	/	38	HCW Wu ₃ vacc
HCW-028	F	56	/	3	no	/	29	HCW Wu ₃ vacc
HCW-031	F	58	/	3	no	/	35	HCW Wu ₃ vacc
HCW-033	F	59	/	3	no	/	31	HCW Wu ₃ vacc
HCW-037	F	59	/	3	no	/	45	HCW Wu ₃ vacc
HCW-038	F	22	/	3	no	/	61	HCW Wu ₃ vacc
HCW-039	F	60	/	3	no	/	23	HCW Wu ₃ vacc
HCW-010	F	39	/	3	yes	pre Omicron	69	HCW preOm+Wu ₃ vacc
HCW-014	F	29	/	3	yes	pre Omicron	89	HCW preOm+Wu ₃ vacc
HCW-015	F	36	/	3	yes	pre Omicron	86	HCW preOm+Wu ₃ vacc
HCW-029	F	49	/	3	yes	pre Omicron	77	HCW preOm+Wu ₃ vacc
HCW-030	F	56	/	3	yes	pre Omicron	35	HCW preOm+Wu ₃ vacc
HCW-034	F	38	/	3	yes	pre Omicron	28	HCW preOm+Wu ₃ vacc
HCW-036	F	49	/	3	yes	pre Omicron	34	HCW preOm+Wu ₃ vacc

*any of the following: cyclosporin, tacrolimus, MMF/MPA, azathioprine, everolimus/sirolimus, belatacept or glucocorticoids

Supplementary Table 7. Statistically significant differences of mean neutralization and binding titers within and between cohorts

Fig. 4a	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. BQ.1.1	169	*	0.03	Wu4vacc (i)
Wu-G614 vs. XBB.1	192	**	0.003	Wu4vacc (i)
Wu-G614 vs. XBB.1.5	187	**	0.004	Wu4vacc (i)
BA.1 vs. BA.1	-145	*	0.04	Wu4vacc (i)/Om.BT+biv (iv)
BA.5 vs. BA.5	-148	*	0.03	Wu4vacc (i)/Om.BT+biv (iv)
BA.2.75.2 vs. BA.2.75.2	-151	*	0.02	Wu4vacc (i)/Om.BT+biv (iv)
Wu-G614 vs. BA.2.75.2	148	*	0.03	Wu/BA.5biv (ii)
Wu-G614 vs. BQ.1.1	147	*	0.03	Wu/BA.5biv (ii)
Wu-G614 vs. XBB.1	202	***	<0.001	Wu/BA.5biv (ii)
Wu-G614 vs. XBB.1.5	198	***	<0.001	Wu/BA.5biv (ii)
BA.1 vs. XBB.1	148	*	0.03	Wu/BA.5biv (ii)
BA.1 vs. XBB.1.5	144	*	0.04	Wu/BA.5biv (ii)
Wu-G614 vs. BQ.1.1	129	*	0.01	Om.BT+biv (iv)
Wu-G614 vs. XBB.1	162	***	<0.001	Om.BT+biv (iv)
Wu-G614 vs. XBB.1.5	152	***	<0.001	Om.BT+biv (iv)
BA.1 vs. BQ.1.1	129	*	0.01	Om.BT+biv (iv)
BA.1 vs. XBB.1	162	***	<0.001	Om.BT+biv (iv)
BA.1 vs. XBB.1.5	152	***	<0.001	Om.BT+biv (iv)
BA.5 vs. XBB.1	149	***	<0.001	Om.BT+biv (iv)
BA.5 vs. XBB.1.5	139	**	0.002	Om.BT+biv (iv)
Fig.4b	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. XBB.1	159	*	0.01	Wu3vacc (v)
Wu-G614 vs. XBB.1.5	161	*	0.01	Wu3vacc (v)
Wu-G614 vs. BA.2.75.2	114	***	<0.001	preOm+vacc (vi)
Wu-G614 vs. BQ.1.1	108	***	<0.001	preOm+vacc (vi)
Wu-G614 vs. XBB.1	151	***	<0.001	preOm+vacc (vi)
Wu-G614 vs. XBB.1.5	151	***	<0.001	preOm+vacc (vi)
BA.1 vs. XBB.1	99.6	**	0.005	preOm+vacc (vi)
BA.1 vs. XBB.1.5	98.9	**	0.006	preOm+vacc (vi)
BA.5 vs. XBB.1	97	**	0.009	preOm+vacc (vi)
BA.5 vs. XBB.1.5	96.3	*	0.01	preOm+vacc (vi)
Fig. 4c RBD	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. BA.1	108	***	<0.001	preOm+vacc (vi)
Wu-G614 vs. BA.5	94.9	***	<0.001	preOm+vacc (vi)
Wu-G614 vs. BQ.1.1	90.9	**	0.001	preOm+vacc (vi)
Wu-G614 vs. XBB.1	90.8	**	0.001	preOm+vacc (vi)
Fig. 4c S	Mean rank diff.	Significant?	Adjusted P Value	Cohort
BA.1 vs. BA.1	-112	*	0.04	preOm+vacc (vi)/Wu/BA.5biv (ii)
BA.2.75.2 vs. BA.2.75.2	-116	*	0.02	preOm+vacc (vi)/Wu/BA.5biv (ii)
BQ.1.1 vs. BQ.1.1	-117	*	0.02	preOm+vacc (vi)/Wu/BA.5biv (ii)
XBB.1 vs. XBB.1	-113	*	0.04	preOm+vacc (vi)/Wu/BA.5biv (ii)
Fig. 4d	Mean rank diff.	Significant?	Adjusted P Value	Cohort
		no		

*** (p-value < 0.001); ** (p < 0.002), * (p < 0.033) Kruskal-Wallis rank test and corrected with Dunn's test

Supplementary Table 8. Statistically significant differences of mean neutralization and binding titers within and between cohorts

ED Fig. 7a (neutralization)	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. BA.5	127	**	0.004	DP Wu4vacc
Wu-G614 vs. BA.2.75.2	194	***	<0.001	DP Wu4vacc
Wu-G614 vs. BQ.1.1	224	***	<0.001	DP Wu4vacc
Wu-G614 vs. XBB.1	229	***	<0.001	DP Wu4vacc
Wu-G614 vs. XBB.1.5	238	***	<0.001	DP Wu4vacc
BA.1 vs. BA.2.75.2	113	*	0.03	DP Wu4vacc
BA.1 vs. BQ.1.1	144	***	<0.001	DP Wu4vacc
BA.1 vs. XBB.1	148	***	<0.001	DP Wu4vacc
BA.1 vs. XBB.1.5	157	***	<0.001	DP Wu4vacc
BA.5 vs. XBB.1.5	111	*	0.03	DP Wu4vacc
Wu-G614 vs. BA.2.75.2	156	***	<0.001	HCW Wu3/4vacc
Wu-G614 vs. BQ.1.1	179	***	<0.001	HCW Wu3/4vacc
Wu-G614 vs. XBB.1	261	***	<0.001	HCW Wu3/4vacc
Wu-G614 vs. XBB.1.5	262	***	<0.001	HCW Wu3/4vacc
BA.1 vs. BQ.1.1	121	**	0.009	HCW Wu3/4vacc
BA.1 vs. XBB.1	203	***	<0.001	HCW Wu3/4vacc
BA.1 vs. XBB.1.5	204	***	<0.001	HCW Wu3/4vacc
BA.5 vs. XBB.1	185	***	<0.001	HCW Wu3/4vacc
BA.5 vs. XBB.1.5	186	***	<0.001	HCW Wu3/4vacc
ED Fig. 7a (binding)	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. BA.5	111	**	0.004	DP Wu4vacc
Wu-G614 vs. BQ.1.1	98.9	*	0.02	DP Wu4vacc
Wu-G614 vs. XBB.1	103	*	0.01	DP Wu4vacc
Wu-G614 vs. BA.1	191	***	<0.001	HCW Wu3/4vacc
Wu-G614 vs. BA.5	162	***	<0.001	HCW Wu3/4vacc
Wu-G614 vs. BQ.1.1	147	***	<0.001	HCW Wu3/4vacc
Wu-G614 vs. XBB.1	146	***	<0.001	HCW Wu3/4vacc
BA.1 vs. BA.2.75.2	-116	**	0.002	HCW Wu3/4vacc
ED Fig. 7b (neutralization)	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. Wu-G614	-208	***	<0.001	KTR Wu4vacc / HCW Wu3vacc
Wu-G614 vs. Wu-G614	-224	**	0.003	KTR Wu4vacc / HCW preOm+Wu3vacc
BA.1 vs. BA.1	-217	***	<0.001	KTR Wu4vacc / HCW Wu3vacc
BA.1 vs. BA.1	-247	***	<0.001	KTR Wu4vacc / HCW preOm+Wu3vacc
BA.5 vs. BA.5	-178	***	<0.001	KTR Wu4vacc / HCW Wu3vacc
BA.5 vs. BA.5	-220	**	0.004	KTR Wu4vacc / HCW preOm+Wu3vacc
Wu-G614 vs. BA.2.75.2	238	***	<0.001	HCW Wu3vacc

Wu-G614 vs. BQ.1.1	235	***	<0.001	HCW Wu3vacc
Wu-G614 vs. XBB.1	272	***	<0.001	HCW Wu3vacc
Wu-G614 vs. XBB.1.5	283	***	<0.001	HCW Wu3vacc
BA.1 vs. BA.2.75.2	185	***	<0.001	HCW Wu3vacc
BA.1 vs. BQ.1.1	182	***	<0.001	HCW Wu3vacc
BA.1 vs. XBB.1	219	***	<0.001	HCW Wu3vacc
BA.1 vs. XBB.1.5	230	***	<0.001	HCW Wu3vacc
BA.5 vs. BA.2.75.2	146	**	0.001	HCW Wu3vacc
BA.5 vs. BQ.1.1	143	**	0.002	HCW Wu3vacc
BA.5 vs. XBB.1	180	***	<0.001	HCW Wu3vacc
BA.5 vs. XBB.1.5	192	***	<0.001	HCW Wu3vacc
ED Fig. 7b (binding)	Mean rank diff.	Significant?	Adjusted P Value	Cohort
Wu-G614 vs. Wu-G614	-227	***	<0.001	KTR Wu4vacc / HCW Wu3vacc
Wu-G614 vs. Wu-G614	-254	***	<0.001	KTR Wu4vacc / HCW preOm+Wu3vacc
BA.1 vs. BA.1	-133	**	0.01	KTR Wu4vacc / HCW Wu3vacc
BA.1 vs. BA.1	-212	**	0.006	KTR Wu4vacc / HCW preOm+Wu3vacc
BA.5 vs. BA.5	-149	***	<0.001	KTR Wu4vacc / HCW Wu3vacc
BA.5 vs. BA.5	-231	***	<0.001	KTR Wu4vacc / HCW preOm+Wu3vacc
BA2.75.2 vs. BA2.75.2	-181	***	<0.001	KTR Wu4vacc / HCW Wu3vacc
BA2.75.2 vs. BA2.75.2	-249	***	<0.001	KTR Wu4vacc / HCW preOm+Wu3vacc
BQ.1.1 vs. BQ.1.1	-230	**	0.001	KTR Wu4vacc / HCW preOm+Wu3vacc
XBB.1 vs. XBB.1	-126	*	0.02	KTR Wu4vacc / HCW Wu3vacc
Wu-G614 vs. BA.1	140	**	0.002	HCW Wu3vacc
Wu-G614 vs. XBB.1	134	**	0.005	HCW Wu3vacc

*** (p-value < 0.001); ** (p < 0.002), * (p < 0.033) Kruskal-Wallis rank test and corrected with Dunn's test