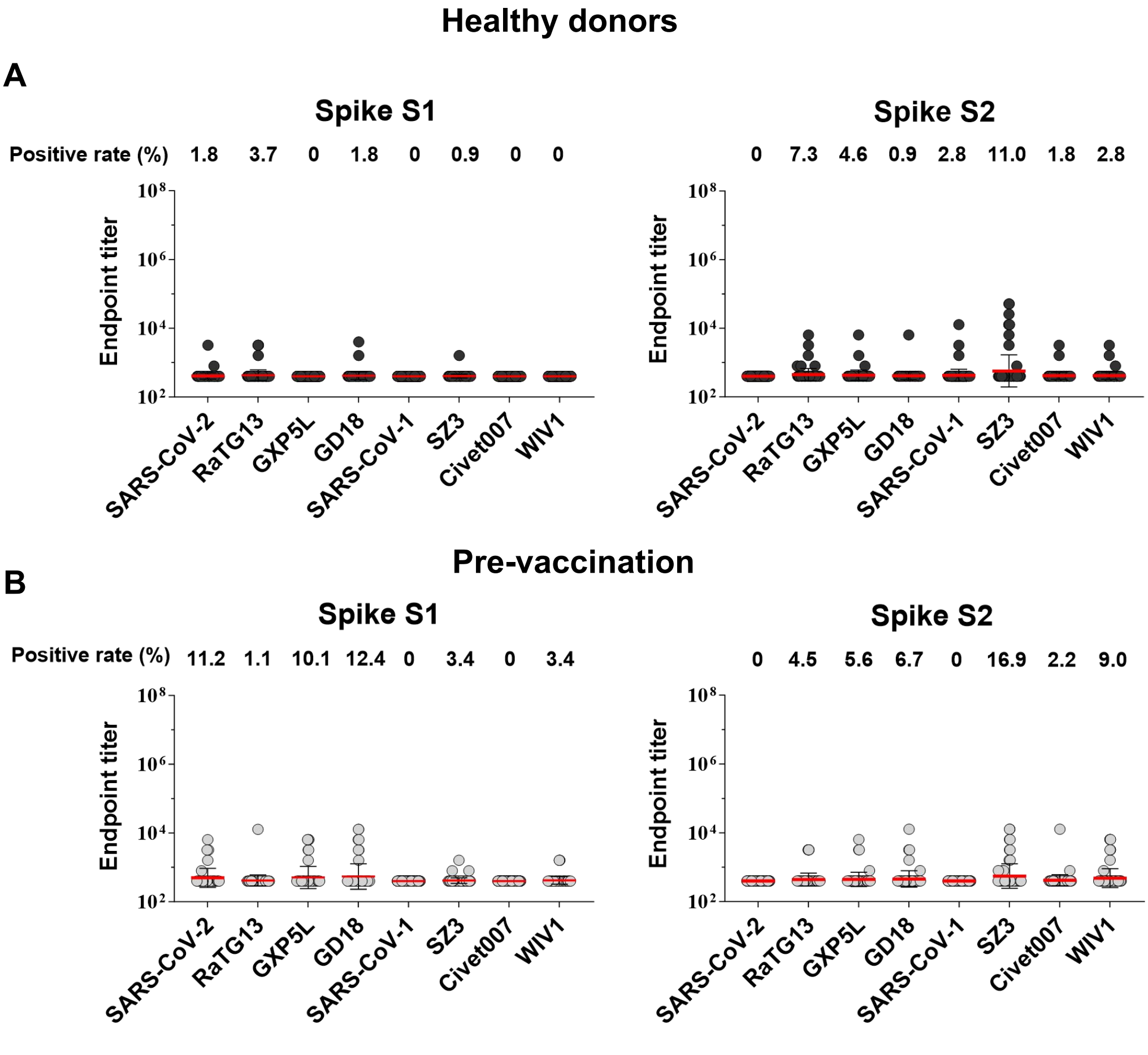
Supplementary Figure 1



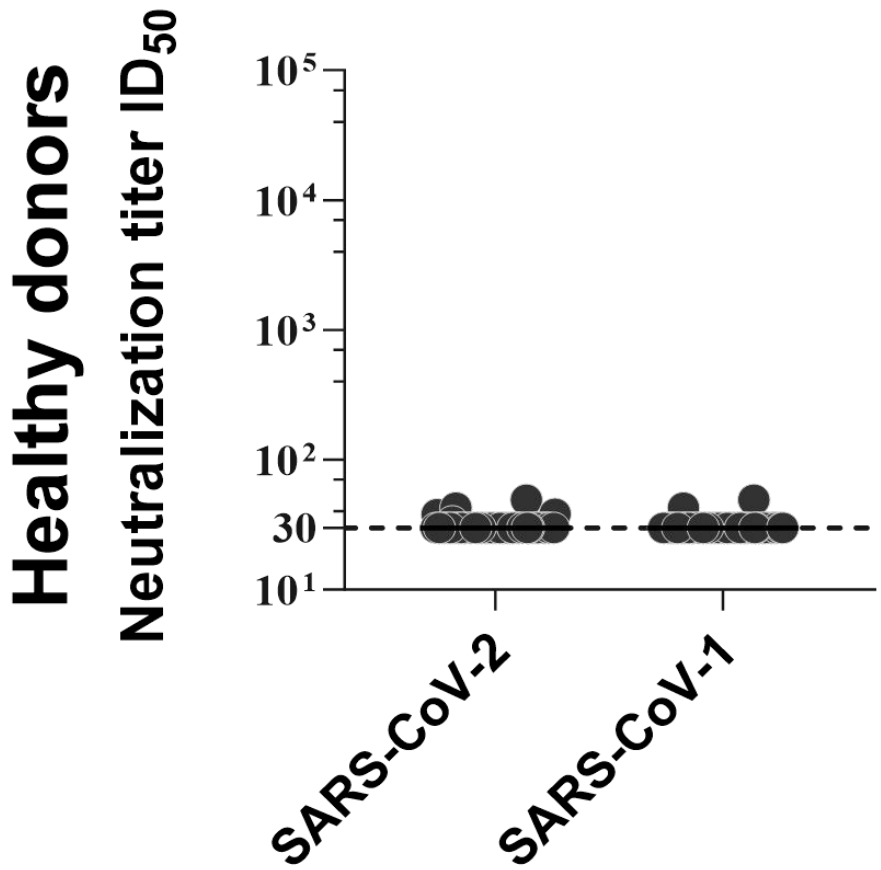
Supplementary Figure 1. Antibody reactivity against sarbecoviruses in pre-pandemic healthy donors and pre-vaccination donors

(A-B) Endpoint titers of plasma IgG antibodies from 119 pre-pandemic healthy donors (A) and 89 pre-vaccination donors (B), determined by antibody binding to sarbecoviruses spike S1 (left) and S2 (right) and displayed as final dilution titers. A value of ED_{50} > 400 was considered positive for binding. Data are representative of technical triplicates.

Supplementary Figure 2

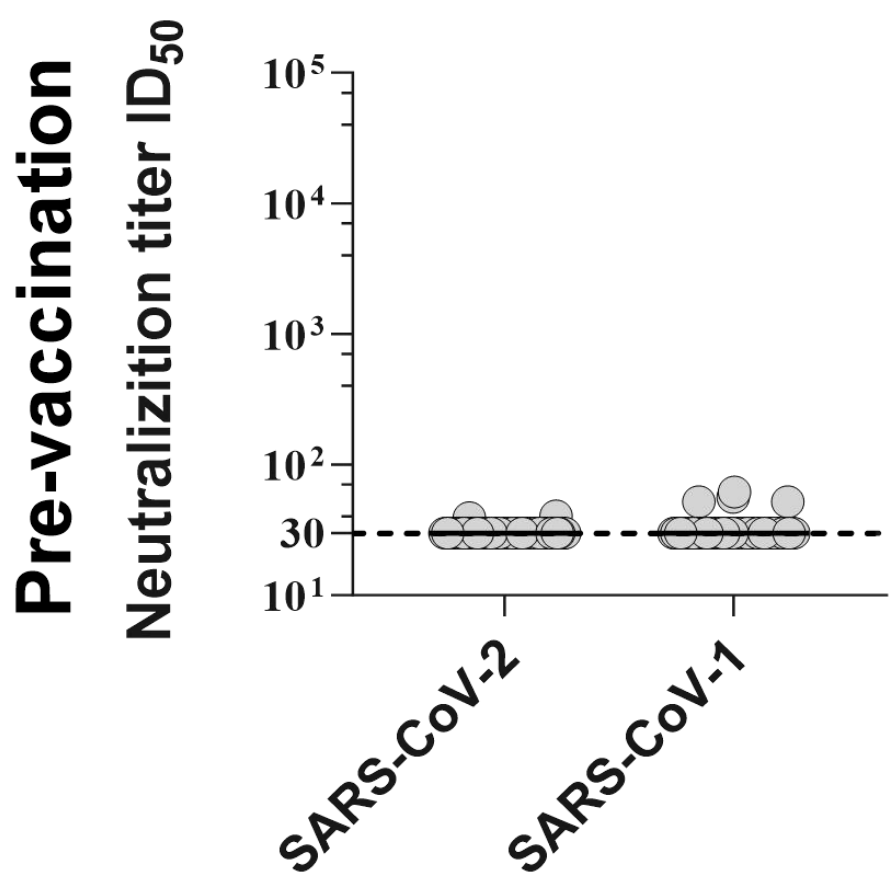
A

Positive rate (%)	3.67	1.83
Titer (median)	1.48	1.48



B

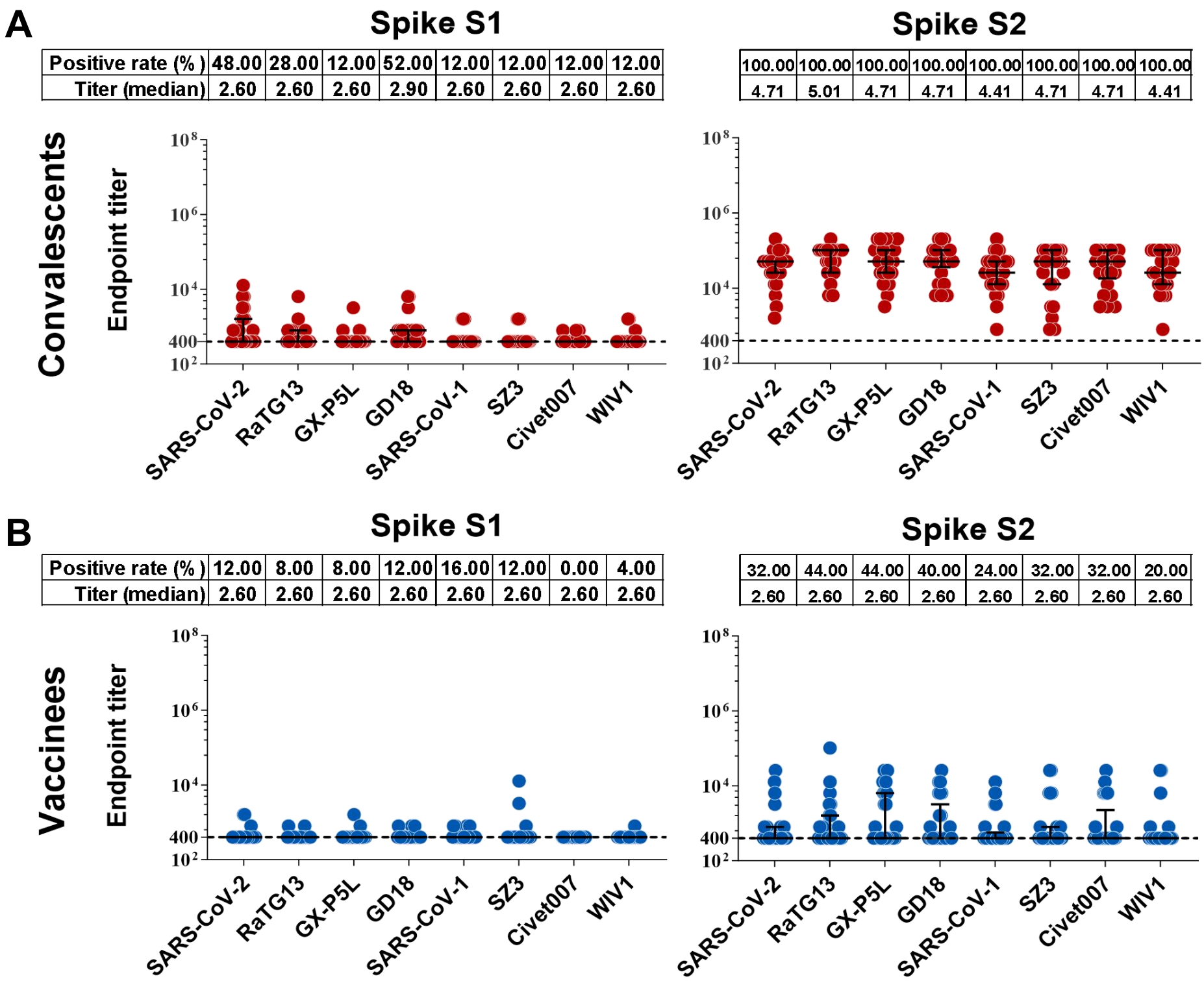
Positive rate (%)	2.25	4.49
Titer (median)	1.48	1.48



Supplementary Figure 2. Neutralization activity against sarbecoviruses in plasma from pre-pandemic healthy donors and pre-vaccination individuals

(A–B) Neutralization titers of plasma samples from 119 pre-pandemic healthy donors (A) and 89 pre-vaccination individuals (B) against sarbecovirus-pseudotyped viruses. The dashed lines represent the cut-off values (ID_{50} = 30), and a ID_{50} value > 30 was considered positive for neutralization. Data are representative of technical triplicates. The positive rates and mean titers (after index conversion) are shown.

Supplementary Figure 3



Supplementary Figure 3. Antibody responses to sarbecoviruses in COVID-19 convalescents before vaccination and vaccinees before receiving a third booster dose

(A–B) Endpoint titers of serum IgG antibodies from 25 COVID-19 convalescents before vaccination (A) and 25 vaccinees before receiving a third booster dose (B), determined by antibody binding to sarbecovirus spike S1 (left) and S2 (right) protein subunits. The dashed lines represent the cut-off values (endpoint titer = 400); an endpoint titer value > 400 was considered positive for binding. Data are representative of technical triplicates and are presented as medians ± interquartile ranges (IQR, 25–75%), and the error bars indicate medians with IQR. The positive rates and mean titers (after index conversion) are shown.

Supplementary Table 1. Baseline characteristics of COVID-19 convalescents recruited in this study

Patient ID	Sex	Severity of disease	Age (year)	Course of disease (day)	Sample collection time (day after illness onset)
Patient 1	Male	Non-severe	29	16	48
Patient 2	Male	Non-severe	48	12	42
Patient 3	Male	Severe	47	21	53
Patient 4	Female	Non-severe	29	20	50
Patient 5	Female	Non-severe	20	15	44
Patient 6	Female	Non-severe	50	23	54
Patient 7	Female	Non-severe	46	16	43
Patient 8	Male	Non-severe	43	25	52
Patient 9	Female	Non-severe	43	24	59
Patient 10	Female	Non-severe	45	25	63
Patient 11	Male	Severe	54	28	62
Patient 12	Male	Non-severe	43	27	76
Patient 13	Female	Severe	72	22	65
Patient 14	Male	Non-severe	47	17	66
Patient 15	Female	Non-severe	19	24	149
Patient 16	Male	Non-severe	45	21	48
Patient 17	Female	Non-severe	45	18	48
Patient 18	Female	Non-severe	51	15	45
Patient 19	Female	Non-severe	69	18	47
Patient 20	Female	Non-severe	47	24	54
Patient 21	Male	Severe	53	29	59
Patient 22	Male	Non-severe	62	22	52
Patient 23	Female	Non-severe	46	11	49
Patient 24	Male	Severe	62	15	46
Patient 25	Male	Non-severe	20	13	47
Patient 26	Female	Non-severe	41	24	48
Patient 27	Male	Non-severe	22	14	42
Patient 28	Male	Non-severe	33	17	43
Patient 29	Male	Severe	43	21	49
Patient 30	Female	Non-severe	39	23	51
Patient 31	Female	Non-severe	41	16	43
Patient 32	Female	Non-severe	39	19	48
Patient 33	Male	Severe	43	13	45
Patient 34	Male	Severe	62	17	50
Patient 35	Male	Non-severe	23	16	45
Patient 36	Male	Non-severe	47	16	44
Patient 37	Male	Non-severe	23	17	47
Patient 38	Female	Non-severe	32	16	48
Patient 39	Female	Non-severe	30	17	47
Patient 40	Male	Non-severe	82	20	50
Patient 41	Male	Non-severe	40	20	49
Patient 42	Female	Non-severe	28	28	58
Patient 43	Female	Non-severe	21	22	51
Patient 44	Male	Non-severe	41	23	55
Patient 45	Female	Non-severe	50	25	61
Patient 46	Male	Non-severe	36	18	59
Patient 47	Female	Severe	34	28	57
Patient 48	Male	Non-severe	23	19	56

Patient 49	Female	Non-severe	30	18	54
Patient 50	Female	Severe	67	25	55
Patient 51	Male	Non-severe	27	14	51
Patient 52	Male	Severe	81	30	57
Patient 53	Female	Severe	84	35	61
Patient 54	Male	Non-severe	22	18	45
Patient 55	Female	Non-severe	54	14	44
Patient 56	Male	Severe	33	27	62
Patient 57	Female	Non-severe	42	29	59
Patient 58	Male	Non-severe	38	32	64
Patient 59	Male	Non-severe	29	12	63
Patient 60	Male	Severe	53	24	54
Patient 61	Male	Severe	64	27	62
Patient 62	Female	Non-severe	53	29	64
Patient 63	Male	Non-severe	23	23	79
Patient 64	Female	Non-severe	50	17	67
Patient 65	Female	Severe	59	28	79
Patient 66	Female	Non-severe	29	30	71
Patient 67	Female	Severe	82	22	65
Patient 68	Female	Non-severe	47	45	86
Patient 69	Female	Non-severe	43	12	68
Patient 70	Male	Non-severe	52	19	142
Patient 71	Female	Non-severe	56	16	155
Patient 72	Male	Severe	38	17	254
Patient 73	Female	Non-severe	8	11	369
Media			43	20	54
(IQR)			（30-52.25）	(16-24.25)	(48-63)

IQR: Interquartile range.

Supplementary Table 2. Baseline characteristics of vaccine recipients recruited in this study

Vaccine recipient ID	Sex	Age (year)	Type of vaccine administered		Intervals between dose 1 and 2 (day)	Sample collection time (day after standard two-dose administration)
			First dose	Second dose		
Vaccine recipient 1	Male	25	Sinovac	Sinovac	24	17
Vaccine recipient 2	Female	44	Sinovac	Sinovac	24	18
Vaccine recipient 3	Female	26	Sinovac	Sinovac	25	16
Vaccine recipient 4	Female	32	Sinovac	Sinovac	24	18
Vaccine recipient 5	Male	34	Sinovac	Sinovac	31	13
Vaccine recipient 6	Female	33	Sinovac	Sinovac	24	17
Vaccine recipient 7	Female	26	Sinovac	Sinovac	25	16
Vaccine recipient 8	Male	45	Sinovac	Sinovac	25	16
Vaccine recipient 9	Female	35	Sinovac	Sinovac	25	16
Vaccine recipient 10	Female	42	Sinovac	Sinovac	25	16
Vaccine recipient 11	Male	26	Sinovac	Sinovac	24	17
Vaccine recipient 12	Female	31	Sinovac	Sinovac	24	17
Vaccine recipient 13	Male	40	Sinovac	Sinovac	24	17
Vaccine recipient 14	Female	30	Sinovac	Sinovac	30	13
Vaccine recipient 15	Female	33	Sinovac	Sinovac	24	17
Vaccine recipient 16	Female	45	Sinovac	Sinovac	18	23
Vaccine recipient 17	Male	33	Sinovac	Sinovac	24	17
Vaccine recipient 18	Male	23	Sinovac	Sinovac	25	17
Vaccine recipient 19	Female	45	Sinovac	Sinovac	24	17
Vaccine recipient 20	Female	35	Sinovac	Sinovac	25	16
Vaccine recipient 21	Male	45	Sinovac	Sinovac	18	23
Vaccine recipient 22	Female	28	Sinovac	Sinovac	25	16
Vaccine recipient 23	Female	45	Sinovac	Sinovac	34	10
Vaccine recipient 24	Female	34	Sinovac	Sinovac	26	16
Vaccine recipient 25	Female	32	Sinovac	Sinovac	25	16
Vaccine recipient 26	Female	29	Sinovac	Sinovac	24	17
Vaccine recipient 27	Male	44	Sinovac	Sinovac	24	17
Vaccine recipient 28	Female	45	Sinovac	Sinovac	25	16
Vaccine recipient 29	Female	53	Sinovac	Sinovac	24	17
Vaccine recipient 30	Female	56	Sinovac	Sinovac	24	17
Vaccine recipient 31	Female	36	Sinovac	Sinovac	24	17
Vaccine recipient 32	Female	37	Sinovac	Sinovac	24	17
Vaccine recipient 33	Female	38	Sinovac	Sinovac	18	23
Vaccine recipient 34	Female	38	Sinovac	Sinovac	25	15
Vaccine recipient 35	Female	36	Sinovac	Sinovac	24	17
Vaccine recipient 36	Female	31	Sinovac	Sinovac	25	14
Vaccine recipient 37	Female	40	Sinovac	Sinovac	24	16
Vaccine recipient 38	Female	41	Sinovac	Sinovac	31	13
Vaccine recipient 39	Female	28	Sinovac	Sinovac	24	16
Vaccine recipient 40	Male	48	Sinovac	Sinovac	24	16
Vaccine recipient 41	Male	47	Sinovac	Sinovac	24	16
Vaccine recipient 42	Male	42	Sinovac	Sinovac	24	16
Vaccine recipient 43	Female	33	Sinovac	Sinovac	24	17
Vaccine recipient 44	Male	56	Sinovac	Sinovac	19	17
Vaccine recipient 45	Female	34	Sinovac	Sinovac	24	17
Vaccine recipient 46	Female	45	Sinovac	Sinovac	24	16
Vaccine recipient 47	Female	43	Sinovac	Sinovac	24	17
Vaccine recipient 48	Female	46	Sinovac	Sinovac	24	16

Vaccine recipient 49	Male	49	Sinovac	Sinovac	24	17
Vaccine recipient 50	Female	31	Sinovac	Sinovac	31	13
Vaccine recipient 51	Female	52	Sinovac	Sinovac	24	25
Vaccine recipient 52	Female	49	Sinovac	Sinovac	24	17
Vaccine recipient 53	Female	43	Sinovac	Sinovac	25	16
Vaccine recipient 54	Female	41	Sinovac	Sinovac	25	15
Vaccine recipient 55	Female	37	Sinovac	Sinovac	26	15
Vaccine recipient 56	Female	50	Sinovac	Sinovac	25	15
Vaccine recipient 57	Female	33	Sinovac	Sinovac	18	23
Vaccine recipient 58	Female	33	Sinovac	Sinovac	24	16
Vaccine recipient 59	Female	38	Sinovac	Sinovac	20	21
Vaccine recipient 60	Male	47	Sinovac	Sinovac	31	13
Vaccine recipient 61	Female	28	Sinovac	Sinovac	26	15
Vaccine recipient 62	Female	52	Sinovac	Sinovac	24	17
Vaccine recipient 63	Male	34	Sinovac	Sinovac	24	17
Vaccine recipient 64	Male	31	Sinovac	Sinovac	24	17
Vaccine recipient 65	Male	38	Sinovac	Sinovac	25	16
Vaccine recipient 66	Male	33	Sinovac	Sinovac	24	17
Vaccine recipient 67	Female	38	Sinovac	Sinovac	25	16
Vaccine recipient 68	Female	39	Sinovac	Sinovac	24	17
Vaccine recipient 69	Female	37	Sinovac	Sinovac	24	16
Vaccine recipient 70	Female	38	Sinovac	Sinovac	23	16
Vaccine recipient 71	Female	39	Sinovac	Sinovac	26	15
Vaccine recipient 72	Male	32	Sinovac	Sinovac	25	16
Vaccine recipient 73	Female	37	Sinovac	Sinovac	23	15
Vaccine recipient 74	Female	45	Sinovac	Sinovac	24	17
Vaccine recipient 75	Male	35	Sinovac	Sinovac	25	16
Vaccine recipient 76	Female	36	Sinovac	Sinovac	23	16
Vaccine recipient 77	Male	35	Sinovac	Sinovac	24	17
Vaccine recipient 78	Female	33	Sinovac	Sinovac	24	16
Vaccine recipient 79	Female	33	Sinovac	Sinovac	24	16
Vaccine recipient 80	Male	33	Sinovac	Sinovac	24	16
Vaccine recipient 81	Female	29	Sinovac	Sinovac	31	13
Vaccine recipient 82	Male	54	Sinovac	Sinovac	24	16
Vaccine recipient 83	Female	37	Sinovac	Sinovac	24	16
Vaccine recipient 84	Female	24	Sinovac	Sinovac	31	13
Vaccine recipient 85	Female	29	Sinovac	Sinovac	31	13
Vaccine recipient 86	Male	51	Sinovac	Sinovac	25	16
Vaccine recipient 87	Female	51	Sinovac	Sinovac	25	17
Vaccine recipient 88	Male	48	Sinovac	Sinovac	24	19
Vaccine recipient 89	Female	24	Sinovac	Sinovac	30	13
Media		37			24	16
(IQR)		(32-45)			(24-25)	(16-17)

IQR: Interquartile range.

Supplementary Table 3. Neutralization titer against sarbecoviruses in COVID-19 convalescents

Patient ID	Neutralization breadth (number of sarbecoviruses, n)	Neutralization titer (ID_{50})							
		SARS-CoV-2	RaTG13	GX-P5L	GD18	SARS-CoV-1	SZ3	Civet007	WIV1
Patient 1	7	133	106	80	2248	70	66	30	436
Patient 2	4	192	30	55	994	30	30	30	297
Patient 3	7	653	84	113	1919	43	55	30	1593
Patient 4	6	1252	232	861	3911	30	100	30	136
Patient 5	3	30	30	80	398	30	101	30	30
Patient 6	8	842	1041	628	2778	44	247	84	653
Patient 7	7	578	30	342	1756	40	61	36	190
Patient 8	6	277	479	412	1551	30	92	30	153
Patient 9	6	207	67	31	4921	30	53	30	47
Patient 10	7	589	142	42	2053	88	69	30	465
Patient 11	8	1009	96	366	3866	40	65	59	804
Patient 12	1	30	30	30	121	30	30	30	30
Patient 13	8	1209	274	509	1633	31	244	428	163
Patient 14	6	2147	176	240	3027	30	114	30	390
Patient 15	7	1286	201	1039	2915	66	78	30	1247
Patient 16	5	254	30	381	518	56	30	30	161
Patient 17	7	841	177	71	2478	30	100	51	48
Patient 18	7	1120	1099	367	5161	33	124	30	221
Patient 19	8	1538	867	347	4485	32	212	217	181
Patient 20	0	30	30	30	30	30	30	30	30
Patient 21	7	2482	854	125	1626	30	117	74	77
Patient 22	7	1170	215	295	3378	30	294	107	776
Patient 23	6	490	48	153	2843	30	151	30	63
Patient 24	8	1905	56	249	4275	47	583	222	163
Patient 25	7	654	799	682	2975	30	131	81	117
Patient 26	8	3782	836	1853	3929	34	128	152	541
Patient 27	7	928	842	758	4334	30	110	63	522
Patient 28	7	166	110	183	706	30	106	147	134
Patient 29	3	32	30	40	30	30	98	30	30
Patient 30	7	2277	334	1467	5703	30	113	92	76
Patient 31	7	1369	195	721	4610	30	212	152	401
Patient 32	5	263	161	91	1148	30	59	30	30
Patient 33	5	437	198	89	3286	30	80	30	30
Patient 34	6	297	148	104	4793	30	276	30	81
Patient 35	7	1117	708	451	6146	30	219	319	360
Patient 36	7	3159	480	129	4451	30	226	36	255
Patient 37	6	126	836	98	1360	30	127	37	30
Patient 38	5	2575	1088	114	1507	30	99	30	30
Patient 39	7	1150	220	434	4040	30	384	275	187
Patient 40	7	55	284	49	843	30	82	99	55
Patient 41	7	391	381	126	2636	33	130	30	57
Patient 42	6	298	394	138	1623	30	124	30	88
Patient 43	7	2412	491	380	2082	30	331	137	224
Patient 44	8	1316	74	141	3676	33	150	63	188
Patient 45	6	46	203	118	592	30	30	38	58
Patient 46	7	1105	245	363	3419	30	103	210	128
Patient 47	7	1134	892	501	4786	30	372	492	981
Patient 48	7	923	1432	443	4490	30	239	62	240

Patient 49	7	93	40	58	622	30	41	47	84
Patient 50	8	1215	39	322	2857	58	314	427	2098
Patient 51	6	1215	267	913	3395	30	30	688	410
Patient 52	7	1231	651	290	4930	30	86	568	639
Patient 53	7	53	115	59	2826	30	59	78	124
Patient 54	7	378	650	182	3356	46	62	30	341
Patient 55	5	99	135	71	465	30	30	61	30
Patient 56	7	1490	1317	968	5007	30	891	539	122
Patient 57	6	281	64	340	1183	30	108	60	30
Patient 58	6	454	869	189	4201	30	74	154	30
Patient 59	7	139	217	100	1430	58	30	78	45
Patient 60	6	131	128	541	760	30	30	85	33
Patient 61	8	426	487	1194	4590	101	109	198	233
Patient 62	5	48	48	30	350	30	30	51	31
Patient 63	5	127	214	30	613	30	54	30	44
Patient 64	7	1377	652	656	6123	30	103	342	322
Patient 65	7	118	133	79	722	30	62	67	51
Patient 66	7	810	87	1664	2896	30	124	587	211
Patient 67	7	1150	176	1184	4884	30	76	364	276
Patient 68	7	383	321	2205	4722	30	128	221	134
Patient 69	6	46	30	85	1345	30	35	80	161
Patient 70	5	31	30	77	1195	30	30	123	77
Patient 71	8	387	1236	257	4084	51	73	364	108
Patient 72	8	469	123	687	4912	32	292	209	129
Patient 73	6	110	242	109	1987	30	43	82	30
Median	**7**	490	203	240	2843	30	100	63	134
(IQR)	(6-7)	(139-1209)	(87-491)	(89-501)	(1345-4275)	(30-32)	(59-131)	(30-154)	(51-297)

IQR: Interquartile range.

Supplementary Table 4. Neutralization titer against sarbecoviruses in vaccine recipients

Vaccine recipient ID	Neutralization breadth (number of sarbecoviruses, n)	Neutralization titer (ID_{50})							
		SARS-CoV-2	RaTG13	GX-P5L	GD18	SARS-CoV-1	SZ3	Civet007	WIV1
Vaccine recipient 1	3	98	142	30	325	30	30	30	30
Vaccine recipient 2	6	36	131	108	607	30	60	30	75
Vaccine recipient 3	6	53	197	53	607	30	56	30	87
Vaccine recipient 4	6	121	128	74	677	30	40	30	151
Vaccine recipient 5	7	410	283	97	930	30	174	86	237
Vaccine recipient 6	6	1021	984	76	1308	30	30	34	62
Vaccine recipient 7	7	351	610	91	796	30	78	38	371
Vaccine recipient 8	6	308	207	31	1588	30	30	61	431
Vaccine recipient 9	6	31	213	30	165	30	49	33	74
Vaccine recipient 10	6	362	50	30	1208	30	136	44	66
Vaccine recipient 11	7	373	101	57	952	30	88	57	130
Vaccine recipient 12	3	113	30	30	614	30	30	74	30
Vaccine recipient 13	5	1004	30	36	2285	30	53	30	123
Vaccine recipient 14	8	3450	508	745	7051	565	240	330	34
Vaccine recipient 15	4	92	48	30	471	30	30	30	37
Vaccine recipient 16	2	30	30	30	394	30	30	30	36
Vaccine recipient 17	3	130	223	30	779	30	30	30	30
Vaccine recipient 18	4	67	121	30	391	30	30	43	30
Vaccine recipient 19	6	152	822	47	3982	30	34	40	30
Vaccine recipient 20	3	176	327	30	3423	30	30	30	30
Vaccine recipient 21	3	30	120	30	120	30	30	30	40
Vaccine recipient 22	5	70	46	30	240	153	30	30	34
Vaccine recipient 23	6	65	59	30	545	30	54	59	43
Vaccine recipient 24	8	45	75	34	784	69	56	742	76
Vaccine recipient 25	2	74	30	30	211	30	30	30	30
Vaccine recipient 26	3	74	30	30	220	30	30	67	30
Vaccine recipient 27	4	125	44	30	1133	30	30	83	30
Vaccine recipient 28	5	79	75	30	800	30	30	74	231
Vaccine recipient 29	5	165	35	30	1013	30	30	56	431
Vaccine recipient 30	5	45	53	30	1276	30	30	38	685
Vaccine recipient 31	4	30	58	30	290	30	30	33	183
Vaccine recipient 32	4	30	31	30	45	30	30	34	51
Vaccine recipient 33	4	30	47	30	359	30	30	241	131
Vaccine recipient 34	4	151	51	30	1523	30	30	30	126
Vaccine recipient 35	4	68	123	30	553	30	30	30	94
Vaccine recipient 36	6	37	80	150	1978	30	272	30	203
Vaccine recipient 37	4	30	60	30	869	30	223	30	210
Vaccine recipient 38	5	39	47	30	2695	30	210	30	90
Vaccine recipient 39	4	30	229	30	839	30	565	30	43
Vaccine recipient 40	3	37	30	30	292	30	30	30	40
Vaccine recipient 41	6	34	34	30	858	30	36	55	57
Vaccine recipient 42	5	119	163	30	1168	30	31	30	59
Vaccine recipient 43	3	57	30	30	1072	30	30	30	55
Vaccine recipient 44	3	76	30	30	1799	30	30	30	51
Vaccine recipient 45	4	81	222	30	2323	30	30	30	186
Vaccine recipient 46	2	30	30	30	463	30	30	30	56
Vaccine recipient 47	4	67	58	30	971	30	30	30	84
Vaccine recipient 48	2	30	30	30	171	30	30	30	48

Vaccine recipient 49	4	45	47	30	152	30	30	30	73
Vaccine recipient 50	4	79	109	30	613	30	30	30	216
Vaccine recipient 51	4	66	60	30	1342	30	30	30	110
Vaccine recipient 52	8	179	75	83	1112	91	52	47	108
Vaccine recipient 53	3	30	30	116	97	30	30	30	62
Vaccine recipient 54	4	47	145	30	232	30	30	30	90
Vaccine recipient 55	3	94	32	30	120	30	30	30	30
Vaccine recipient 56	5	81	94	30	432	30	113	30	86
Vaccine recipient 57	2	30	30	30	101	30	30	30	56
Vaccine recipient 58	4	54	61	30	294	30	30	30	89
Vaccine recipient 59	5	57	144	30	517	30	98	30	41
Vaccine recipient 60	5	263	75	30	1353	30	37	30	46
Vaccine recipient 61	4	30	51	30	155	30	47	30	336
Vaccine recipient 62	4	61	147	30	515	30	30	30	250
Vaccine recipient 63	5	138	176	33	504	30	30	30	138
Vaccine recipient 64	5	209	318	30	1658	30	50	30	67
Vaccine recipient 65	4	181	174	30	481	30	30	30	110
Vaccine recipient 66	4	30	98	30	247	30	30	31	65
Vaccine recipient 67	4	86	57	30	1249	30	30	30	805
Vaccine recipient 68	3	30	38	30	191	30	30	35	30
Vaccine recipient 69	4	108	46	30	496	30	30	30	46
Vaccine recipient 70	5	180	125	30	945	30	30	52	67
Vaccine recipient 71	4	60	144	30	681	30	30	30	53
Vaccine recipient 72	3	30	45	30	160	30	95	30	30
Vaccine recipient 73	4	30	884	340	2077	30	30	30	85
Vaccine recipient 74	1	30	30	30	241	30	30	30	30
Vaccine recipient 75	4	30	144	30	163	30	37	30	61
Vaccine recipient 76	3	30	64	30	315	30	30	30	43
Vaccine recipient 77	3	30	30	30	597	30	79	30	81
Vaccine recipient 78	5	125	104	30	1624	30	74	30	142
Vaccine recipient 79	5	365	172	30	550	30	82	30	45
Vaccine recipient 80	4	86	442	30	375	30	30	30	53
Vaccine recipient 81	5	175	78	30	1323	30	42	30	116
Vaccine recipient 82	4	30	189	30	799	30	39	30	61
Vaccine recipient 83	3	374	30	30	267	30	30	30	49
Vaccine recipient 84	6	76	246	57	771	30	45	30	54
Vaccine recipient 85	5	114	155	30	1232	30	39	30	66
Vaccine recipient 86	5	30	191	30	613	30	54	39	63
Vaccine recipient 87	5	146	75	30	2204	30	30	35	40
Vaccine recipient 88	5	110	105	30	789	30	33	30	34
Vaccine recipient 89	6	977	234	346	611	30	48	30	74
Median	4	68	75	30	614	30	30	30	67
(IQR)	(4-5)	(36-130)	(45-145)	(30-30)	(294-1168)	(30-30)	(30-50)	(30-38)	(41-126)

IQR: Interquartile range.

Supplementary Table 5. Baseline characteristics of COVID-19 convalescents who received vaccine in this study

Patient ID	Sex	Severity of disease	Age (year)	Sample collection time before vaccine administration (day after illness onset)	Type of vaccine administered			Sample collection time (day after third dose administration)
					First dose	Second dose	Third dose	
Patient 1	Male	Non-severe	29	254	Kconvac	Kconvac	Unknown	123
Patient 2	Male	Non-severe	48	248	Sinovac	Sinopharm	Unknown	155
Patient 3	Male	Severe	47	387	Zifivax	Zifivax	Zifivax	74
Patient 4	Female	Non-severe	29	382	Sinovac	Sinovac	Unknown	201
Patient 5	Female	Non-severe	20	376	Sinovac	Sinovac	Unknown	165
Patient 6	Female	Non-severe	50	382	Sinovac	Sinopharm	Unknown	149
Patient 7	Female	Non-severe	46	371	Sinovac	Sinovac	Unknown	144
Patient 8	Male	Non-severe	43	375	Zifivax	Zifivax	Zifivax	139
Patient 9	Female	Non-severe	43	382	Sinovac	Sinovac	Sinopharm	15
Patient 10	Female	Non-severe	45	386	Zifivax	Zifivax	Zifivax	166
Patient 11	Male	Severe	54	378	Sinopharm	Sinovac	Unknown	118
Patient 12	Male	Non-severe	43	378	Zifivax	Zifivax	Zifivax	151
Patient 13	Female	Severe	72	367	Sinovac	Sinovac	Unknown	150
Patient 14	Male	Non-severe	47	368	Sinovac	Sinovac	Sinovac	15
Patient 15	Female	Non-severe	19	377	Sinovac	Sinopharm	Unknown	155
Patient 16	Male	Non-severe	45	382	Sinopharm	Sinopharm	Sinopharm	21
Patient 17	Female	Non-severe	45	382	Sinopharm	Sinopharm	Sinopharm	21
Patient 18	Female	Non-severe	51	377	Sinopharm	Sinopharm	Sinopharm	22
Patient 19	Female	Non-severe	69	375	Sinopharm	Sinovac	Sinopharm	40
Patient 20	Female	Non-severe	47	382	Zifivax	Zifivax	Zifivax	168
Patient 21	Male	Severe	53	382	Sinovac	Sinopharm	Sinopharm	21
Patient 22	Male	Non-severe	62	375	Sinopharm	Sinopharm	Sinopharm	15
Patient 23	Female	Non-severe	46	366	Sinovac	Sinopharm	Sinopharm	50
Patient 24	Male	severe	62	372	Sinopharm	Sinovac	Sinopharm	40
Patient 25	Male	Non-severe	20	370	Sinopharm	Sinopharm	Sinopharm	26
Media			46	377				118
(IQR)			(43-52)	(371-382)				(22-151)

IQR: Interquartile range. Unknown: The type of vaccine administered is unidentified.

Supplementary Table 6. Baseline characteristics of vaccine recipients who received a third-dose booster in this study

Vaccine recipient ID	sex	Age (year)	Type of booster vaccine administered	Sample collection time after a two-dose standard regimen (day)	Sample collection time after a third booster dose (day)
Vaccine recipient 1	Male	25	Sinovac	276	92
Vaccine recipient 5	Male	34	Sinovac	278	17
Vaccine recipient 8	Male	45	Sinovac	277	18
Vaccine recipient 16	Female	45	Sinovac	307	91
Vaccine recipient 18	Male	23	Sinovac	287	20
Vaccine recipient 23	Female	45	Sinovac	275	20
Vaccine recipient 27	Male	44	Sinovac	271	15
Vaccine recipient 30	Female	56	Sinovac	276	18
Vaccine recipient 31	Female	36	Sinovac	276	92
Vaccine recipient 32	Female	37	Sinovac	276	92
Vaccine recipient 41	Male	47	Sinovac	275	24
Vaccine recipient 43	Female	33	Sinovac	275	21
Vaccine recipient 47	Female	43	Sinovac	275	20
Vaccine recipient 50	Female	31	Sinovac	276	22
Vaccine recipient 52	Female	49	Sinovac	275	19
Vaccine recipient 55	Female	37	Sinovac	277	25
Vaccine recipient 57	Female	33	Sinovac	281	19
Vaccine recipient 61	Female	28	Sinovac	276	17
Vaccine recipient 66	Male	33	Sinovac	275	21
Vaccine recipient 79	Female	33	Sinovac	281	26
Vaccine recipient 80	Male	33	Sinovac	283	17
Vaccine recipient 81	Female	29	Sinovac	276	15
Vaccine recipient 84	Female	24	Sinovac	277	19
Vaccine recipient 86	Male	51	Sinovac	283	14
Vaccine recipient 88	Male	48	Sinovac	277	22
Media		36		276	20
(IQR)		(33-45)		(275-278)	(18-24)

IQR: Interquartile range.

Supplementary Table 7. Characteristics of 116 SARS-CoV-2 nAbs isolated from COVID-19 convalescents and vaccine recipients

Antibody ID	Inhibition of SARS-CoV-2 (%)	Target domain	Binding breadth (number of sarbecoviruses, n)	Binding activity (OD_{450})							
				SARS-CoV-2	RaTG13	GX-P5L	GD18	SARS-CoV-1	SZ3	Civet-007	WIV1
SCM13-65	100%	S1	8	2.8062	2.52985	2.49365	2.51785	2.5087	2.4905	2.55165	2.46995
SCM12-61	99%	S1	8	2.23265	2.3123	2.64455	2.62635	2.67935	2.61835	2.62605	2.5458
VSM9-12	98%	S1	8	2.3164	2.1653	2.46865	2.69995	2.66285	2.66835	2.634	2.4768
VSM9-44	96%	S1	8	2.45755	1.91075	2.62115	2.8548	2.8037	2.7295	2.54645	2.45725
VSM13-9	96%	S1	8	2.5895	1.8777	2.5273	2.66815	2.6164	2.66755	2.5682	2.6089
VSM16-28	96%	S1	8	2.70435	2.60855	2.5751	2.80495	2.7436	2.7385	2.6424	2.7248
VSM8-83	92%	S1	8	2.60615	2.3604	2.63035	2.694	2.61895	2.6308	2.58135	2.5558
VSM7-81	91%	S1	8	2.02705	2.05075	2.55055	2.6647	2.529	2.663	2.42205	2.6244
SCM14-64	74%	S1	8	2.58055	2.32	2.4524	2.67155	2.65255	2.6382	2.6268	2.62525
VSM16-12	65%	S1	8	2.35385	1.92175	2.4588	2.6466	2.61235	2.5193	2.53865	2.54125
SCM5-15	89%	S1	8	2.78925	2.0583	2.55505	2.7464	2.49155	2.3376	2.6875	2.7025
SCM12-55	86%	S1	8	2.44665	1.9876	2.422	2.59625	2.46505	2.59125	2.3424	2.29865
VSM4-83	83%	S1	8	2.59865	2.0627	2.5851	2.83605	2.6083	2.5052	2.80035	2.69995
VSM11-26	86%	S1	8	2.615	0.8518	2.21005	2.74215	2.42705	2.6612	2.1119	1.7263
VSM14-56	89%	S1	8	2.4101	0.89395	2.38365	2.6237	1.879	2.5271	2.25205	1.6672
VSM15-10	83%	S1	8	2.38695	1.0637	2.31495	2.6292	1.99495	2.0421	1.36755	1.57405
VSM9-60	80%	S1	8	2.3398	1.22375	2.1376	2.65975	2.3588	2.51065	1.8959	0.709
VSM7-92	91%	S1	8	2.243	1.9288	2.4307	2.607	0.6666	1.2837	0.4643	0.8975
SCM16-51	87%	S1	8	2.51715	1.85775	1.9935	2.66265	0.70165	0.9151	0.6982	0.73055
SCM15-89	98%	S1	8	1.73255	0.3161	0.39485	2.6946	0.6021	0.46005	0.34385	0.32195
VSM14-37	99%	S1	7	2.52505	0.3104	1.11615	2.5204	0.3146	0.45045	0.2224	0.9137
VSM15-44	99%	S1	7	1.88205	0.6258	1.68365	2.74955	0.4563	0.51275	0.214	0.3203
SCM14-52	52%	S1	7	1.9472	0.5311	1.1465	2.65435	0.10225	0.576	0.5228	0.491
SCM9-27	88%	S1	6	0.43545	0.0323	0.0363	2.3091	0.68275	1.11315	1.46475	0.5203
VSM14-4	82%	S1	6	2.1628	0.8075	1.9614	2.7216	0.3445	0.3911	0.26975	0.18265
SCM16-60	54%	S1	6	2.57255	0.27425	0.2006	0.73605	0.41815	0.46995	0.40145	0.4231
SCM16-30	100%	S1	5	2.4385	0.0802	0.0792	2.1302	1.88435	1.88205	1.7288	0.1438
SCM14-69	99%	S1	5	2.81045	0.23275	0.24655	2.90185	0.3022	0.53315	0.35615	0.2872
SCM12-62	100%	S1	4	2.1851	1.6817	0.2241	2.8286	0.17515	0.31365	0.1732	0.18605
VSM13-40	99%	S1	4	1.545	0.37665	0.4308	2.5659	0.16165	0.2739	0.1685	0.148
SCM13-74	98%	S1	4	1.754	0.89305	0.6856	2.63255	0.24565	0.28875	0.23735	0.253
SCM16-9	93%	S1	4	2.5377	0.45505	0.7012	1.3318	0.16325	0.1642	0.1039	0.12235
SCM15-26	75%	S1	4	2.44325	1.81845	2.46375	2.65545	0.0972	0.1074	0.08585	0.0753
SCM11-3	100%	S1	3	1.52785	1.01745	0.25865	1.73495	0.1409	0.1807	0.16385	0.21765
SCM13-36	100%	S1	3	2.13525	1.80435	0.26565	2.5576	0.04065	0.0561	0.03525	0.0472
SCM7-2	100%	S1	3	2.706	0.043	0.04915	2.5658	0.0343	0.0441	0.03535	0.4955
VSM11-53	100%	S1	3	2.3472	1.21785	0.06735	2.56645	0.07305	0.04755	0.074	0.0441
VSM12-26	100%	S1	3	2.44295	0.393	0.2445	2.40345	0.059	0.05005	0.0435	0.0366
VSM14-67	100%	S1	3	1.21905	0.2265	0.255	0.7201	0.4188	0.15525	0.1819	0.1524
SCM10-50	100%	S1	3	2.6656	1.3109	0.131	2.60845	0.05865	0.0676	0.0773	0.087
SCM15-45	99%	S1	3	2.08995	0.08555	0.3008	2.7616	0.07095	0.0808	0.0921	0.0674
VSM15-9	99%	S1	3	2.1267	0.2794	1.2234	2.65475	0.06015	0.0638	0.05375	0.05485
VSM6-68	99%	S1	3	1.65995	0.1941	1.90055	2.6465	0.0997	0.0962	0.0947	0.17635
VSM8-76	99%	S1	3	2.6656	1.3109	0.131	2.60845	0.05865	0.0676	0.0773	0.087
SCM15-13	96%	S1	3	2.55135	0.76755	0.13125	2.65425	0.05635	0.16295	0.1301	0.1486
VSM10-4	94%	S1	3	2.33205	0.14715	1.82555	1.8614	0.0712	0.12115	0.095	0.11945
VSM6-38	94%	S1	3	2.61445	0.07125	1.02875	2.5854	0.09245	0.07315	0.07025	0.06765
VSM14-63	79%	S1	3	2.6698	0.254	1.71985	2.48395	0.10805	0.18515	0.0973	0.0981
VSM12-37	100%	S1	3	2.59615	0.64235	0.0493	2.5779	0.1147	0.0538	0.0531	0.0359
VSM8-40	61%	S1	3	1.96715	0.5499	0.4341	0.05475	0.2969	0.1276	0.0782	0.0407
VSM7-26	52%	S1	3	1.1878	0.7307	0.95435	0.1052	0.2024	0.08495	0.10005	0.0555
SCM9-68	50%	S1	3	0.62085	0.6018	0.4713	0.07875	0.0707	0.03755	0.0427	0.11115
VSM9-53	65%	S1	3	0.7187	0.3836	0.20065	0.451	0.05445	0.0381	0.0352	0.0427
SCM10-2	100%	S1	2	2.4662	0.0367	0.04565	2.66875	0.08075	0.02995	0.03835	0.0553
SCM14-73	100%	S1	2	2.62355	0.11685	0.11465	2.7118	0.14485	0.18965	0.14555	0.1195
SCM15-85	100%	S1	2	2.53125	0.1116	0.07355	2.5751	0.08345	0.1113	0.08505	0.10575
SCM16-15	100%	S1	2	2.56165	0.1185	0.08385	2.50655	0.10225	0.1224	0.0847	0.1064
SCM9-57	100%	S1	2	2.05645	0.05535	0.05535	2.7767	0.0646	0.0343	0.03405	0.03715
SCM9-63	100%	S1	2	1.7056	0.0865	0.08405	2.5141	0.0989	0.09405	0.09975	0.09645
VSM12-60	100%	S1	2	1.86925	0.27625	0.05755	2.43325	0.11385	0.0637	0.09	0.06425
VSM14-58	100%	S1	2	2.52655	0.0948	0.1259	2.67095	0.09375	0.13485	0.0653	0.0756

VSM14-89	100%	S1	2	1.86225	0.15025	0.1324	2.5947	0.1966	0.22765	0.24285	0.2012
VSM7-80	100%	S1	2	2.12385	0.0586	0.04935	2.69095	0.1255	0.05375	0.07095	0.09185
VSM7-88	100%	S1	2	0.60655	0.4099	0.2926	0.18495	0.0703	0.0995	0.0866	0.0876
VSM8-70	100%	S1	2	2.1424	0.06365	0.0659	2.57415	0.0461	0.06065	0.08215	0.0677
SCM10-91	99%	S1	2	1.06275	0.0403	0.0605	2.6481	0.0939	0.0331	0.0328	0.06125
SCM11-46	99%	S1	2	1.9695	0.0388	0.0349	2.65385	0.0481	0.04585	0.05175	0.04835
SCM13-37	99%	S1	2	0.9566	0.20135	0.03785	2.35985	0.0662	0.10365	0.0374	0.05545
SCM14-37	99%	S1	2	1.0497	0.14715	0.04205	2.7545	0.0725	0.09185	0.03865	0.05235
SCM14-5	99%	S1	2	2.01295	0.0675	0.0636	2.3051	0.07415	0.07175	0.09025	0.0703
SCM14-53	99%	S1	2	2.3041	0.2353	0.13375	2.879	0.10215	0.25055	0.25725	0.2137
SCM14-91	99%	S1	2	1.99315	0.13315	0.1133	2.7138	0.14045	0.1652	0.23395	0.1278
SCM15-38	99%	S1	2	1.45255	0.23485	0.1245	2.5827	0.16165	0.24065	0.2008	0.17455
SCM15-52	99%	S1	2	2.76465	0.0613	0.05485	1.40445	0.05405	0.07445	0.06795	0.088
SCM15-61	99%	S1	2	2.4758	0.06525	0.0543	2.69655	0.0492	0.0828	0.05785	0.0914
SCM15-66	99%	S1	2	1.5837	0.0789	0.0605	2.68315	0.06325	0.0882	0.07	0.0932
SCM16-14	99%	S1	2	1.1361	0.1052	0.11165	2.5698	0.08985	0.08075	0.09635	0.07075
SCM9-24	99%	S1	2	2.8193	0.05475	0.07335	2.7361	0.0872	0.08995	0.0427	0.06825
VSM13-20	99%	S1	2	1.75045	0.0883	0.0533	2.03055	0.04215	0.0628	0.069	0.05845
VSM16-55	99%	S1	2	2.1228	0.0371	0.0351	2.5719	0.0492	0.0333	0.04565	0.03475
VSM6-37	99%	S1	2	1.67745	0.21505	0.22525	2.2861	0.12645	0.08555	0.0995	0.0743
VSM7-36	99%	S1	2	2.3559	0.0757	0.09705	2.64535	0.063	0.04935	0.05225	0.0514
VSM7-73	99%	S1	2	2.46385	0.10505	0.0878	2.60255	0.1006	0.09325	0.12585	0.08645
VSM7-83	99%	S1	2	2.1885	0.06305	0.0804	2.58415	0.06055	0.0481	0.058	0.0473
VSM9-47	99%	S1	2	2.2672	0.1428	0.12095	2.72415	0.2799	0.28	0.1059	0.10555
SCM11-4	98%	S1	2	0.74635	0.03495	0.03645	2.46335	0.06225	0.0375	0.0403	0.0477
SCM13-40	98%	S1	2	2.29315	0.086	0.04405	2.64735	0.0403	0.04195	0.03685	0.03705
SCM15-27	98%	S1	2	2.46005	0.268	0.15	2.83875	0.18895	0.23865	0.2211	0.1801
VSM14-50	97%	S1	2	1.68615	0.0681	0.09185	2.30405	0.1093	0.13225	0.0606	0.074
VSM16-56	97%	S1	2	1.61525	0.03595	0.0351	2.5588	0.0363	0.03415	0.03675	0.0689
SCM11-12	96%	S1	2	2.10405	0.07945	0.07455	2.1117	0.08985	0.0749	0.0882	0.07095
SCM11-24	96%	S1	2	2.0802	0.0399	0.0455	2.33285	0.0397	0.0441	0.0426	0.04015
VSM6-66	96%	S1	2	1.29425	0.06745	0.0645	2.5331	0.0475	0.05595	0.07055	0.05985
VSM16-83	95%	S1	2	1.7172	0.0455	0.03535	2.71275	0.05665	0.0329	0.04765	0.05855
VSM13-2	94%	S1	2	2.68895	0.06035	0.0602	2.52285	0.0492	0.09435	0.03625	0.0429
VSM13-85	94%	S1	2	1.29425	0.06745	0.0645	2.5331	0.0475	0.05595	0.07055	0.05985
SCM13-29	86%	S1	2	2.21685	0.1582	0.04255	2.4002	0.1661	0.14795	0.0572	0.0389
VSM12-6	82%	S2	2	0.6299	0.04665	0.0546	1.38875	0.05995	0.04715	0.04935	0.04465
SCM10-74	74%	S1	2	1.7172	0.0455	0.03535	2.71275	0.05665	0.0329	0.04765	0.05855
VSM8-65	74%	S1	2	0.60655	0.4099	0.2926	0.18495	0.0703	0.0995	0.0866	0.0876
SCM9-62	63%	S1	2	1.75045	0.0883	0.0533	2.03055	0.04215	0.0628	0.069	0.05845
VSM14-93	62%	S1	2	2.1228	0.0371	0.0351	2.5719	0.0492	0.0333	0.04565	0.03475
VSM11-7	58%	S1	2	0.45385	0.1138	0.1038	0.8769	0.12955	0.15685	0.07915	0.0441
VSM6-39	55%	S1	2	0.48225	0.11985	0.1172	0.4182	0.1408	0.09045	0.07305	0.0671
SCM10-94	53%	S1	2	0.9566	0.20135	0.03785	2.35985	0.0662	0.10365	0.0374	0.05545
VSM12-46	100%	S1	1	0.45635	0.0635	0.0375	0.07965	0.0667	0.0577	0.0595	0.0398
SCM11-45	97%	S1	1	0.4486	0.0403	0.0364	0.0459	0.03265	0.04355	0.03355	0.04685
VSM12-55	97%	S1	1	1.0794	0.10035	0.04795	0.2162	0.06955	0.0592	0.0859	0.038
VSM13-30	96%	S1	1	1.82005	0.0497	0.0393	0.1554	0.04225	0.05835	0.0881	0.0754
SCM16-40	93%	S1	1	0.4486	0.0403	0.0364	0.0459	0.03265	0.04355	0.03355	0.04685
SCM14-24	92%	S1	1	1.28725	0.0586	0.03285	0.0665	0.07225	0.06385	0.062	0.0802
VSM16-43	92%	S1	1	0.5825	0.23485	0.1573	0.05405	0.05735	0.03645	0.0489	0.0422
VSM12-15	91%	S1	1	1.28725	0.0586	0.03285	0.0665	0.07225	0.06385	0.062	0.0802
VSM14-86	85%	S1	1	1.82005	0.0497	0.0393	0.1554	0.04225	0.05835	0.0881	0.0754
VSM9-51	81%	S1	1	0.7153	0.1682	0.17655	0.12115	0.0407	0.0385	0.0328	0.04275
VSM7-75	61%	S2	8	1.95715	2.7843	2.62135	2.776	2.31435	2.22285	2.64155	2.66965

The neutralization activity of the nAb was determined by measuring its inhibition of pseudotyped sarbecovirus particles at a concentration of 10 μg/mL.
The binding activity was determined by measuring the OD_{450} value of the antibody against the spike S1 or S2 proteins of sarbecoviruses at a concentration of 1 μg/mL. An average OD_{450} value three-fold greater than the cut-off value (the average OD_{450} value of the negative antibody) was considered a positive readout.

Supplementary Table 8. Baseline information of selected 33 broad nAbs

Antibody ID	Antibody origin	Sex	Age (year)	COVID-19 convalescents	Severity of disease	Vaccination record	Sample collection time (day after the last dose administration)
SCM16-9	Patient 1	Male	29	Yes	Non-severe	Third dose	123
SCM15-89	Patient 3	Male	47	Yes	Severe	Third dose	74
SCM16-30	Patient 3	Male	47	Yes	Severe	Third dose	74
SCM16-51	Patient 3	Male	47	Yes	Severe	Third dose	74
SCM16-60	Patient 3	Male	47	Yes	Severe	Third dose	74
SCM9-27	Patient 3	Male	47	Yes	Severe	Third dose	74
SCM12-61	Patient 5	Femal	50	Yes	Non-severe	Third dose	165
SCM12-62	Patient 5	Femal	50	Yes	Non-severe	Third dose	165
SCM12-55	Patient 5	Femal	50	Yes	Non-severe	Third dose	165
SCM15-26	Patient 8	Male	43	Yes	Severe	Third dose	139
SCM13-65	Patient 11	Male	54	Yes	Severe	Third dose	118
SCM13-74	Patient 11	Male	54	Yes	Severe	Third dose	118
SCM14-52	Patient 11	Male	54	Yes	Severe	Third dose	118
SCM14-64	Patient 11	Male	54	Yes	Severe	Third dose	118
SCM14-69	Patient 11	Male	54	Yes	Severe	Third dose	118
SCM5-15	Patient 38	Femal	32	Yes	Non-severe	Third dose	50
VSM15-44	Vaccine recipient 3	Femal	26	NO	-	Third dose	14
VSM13-40	Vaccine recipient 7	Femal	26	NO	-	Third dose	16
VSM13-9	Vaccine recipient 7	Femal	26	NO	-	Third dose	16
VSM16-12	Vaccine recipient 11	Male	26	NO	-	Two dose	66
VSM14-56	Vaccine recipient 17	Male	33	NO	-	Third dose	15
VSM15-10	Vaccine recipient 17	Male	33	NO	-	Third dose	15
VSM14-37	Vaccine recipient 18	Male	23	NO	-	Third dose	15
VSM14-4	Vaccine recipient 18	Male	23	NO	-	Third dose	15
VSM16-28	Vaccine recipient 23	Femal	45	NO	-	Two dose	66
VSM11-26	Vaccine recipient 39	Femal	28	NO	-	Two dose	16
VSM4-83	Vaccine recipient 80	Male	33	NO	-	Two dose	17
VSM7-81	Vaccine recipient 81	Male	29	NO	-	Third dose	15
VSM7-92	Vaccine recipient 81	Male	29	NO	-	Third dose	15
VSM8-83	Vaccine recipient 81	Male	29	NO	-	Third dose	15
VSM9-12	Vaccine recipient 83	Male	37	NO	-	Third dose	20
VSM9-44	Vaccine recipient 83	Male	37	NO	-	Third dose	20
VSM9-60	Vaccine recipient 83	Male	37	NO	-	Third dose	20

"-": The vaccine recipient was not infected with COVID-19.

Supplementary Table 9. Neutralization profiles of selected 33 broad nAbs

Antibody ID	Neutralization breadth (number of sarbecoviruses, n)	Inhibition (%)							
		SARS-CoV-2	RaTG13	GX-P5L	GD18	SARS-CoV-1	SZ3	Civet-007	WIV1
SCM12-61	8	100	93	100	100	99	96	100	100
VSM16-12	8	80	70	95	100	90	80	75	98
SCM13-65	8	100	90	100	100	100	95	98	100
VSM9-44	8	96	90	100	100	100	95	94	100
VSM8-83	8	92	90	98	98	90	94	87	99
VSM9-12	8	98	93	95	100	85	90	80	98
VSM13-9	7	96	26	65	85	89	71	82	76
SCM14-64	6	74	63	45	93	77	0	64	51
VSM15-10	6	83	50	59	83	29	67	60	48
VSM4-83	6	83	5	38	76	50	85	74	81
SCM16-30	5	100	5	0	100	98	82	98	46
SCM12-62	5	100	43	48	100	13	78	68	57
VSM14-37	5	99	64	92	100	27	5	0	75
SCM15-89	5	98	4	16	100	27	59	52	50
SCM9-27	5	88	46	0	95	75	46	63	55
VSM7-92	5	91	0	23	76	0	75	52	53
SCM5-15	5	89	0	33	79	5	82	89	90
VSM15-44	4	99	60	98	98	18	30	3	7
VSM13-40	4	99	53	87	100	28	30	20	9
VSM9-60	4	80	42	55	82	34	34	64	42
VSM16-28	4	96	26	25	91	30	68	48	82
VSM7-81	4	91	40	0	74	73	0	0	79
VSM14-56	4	89	74	57	84	26	29	7	25
VSM11-26	4	86	42	10	6	30	73	81	55
SCM13-74	3	98	0	95	100	6	25	21	38
SCM15-26	3	75	31	60	84	25	0	18	34
SCM12-55	3	86	0	27	81	34	0	15	70
SCM16-60	3	54	6	0	71	0	0	54	44
SCM14-69	2	99	13	0	100	36	1	30	31
SCM16-9	2	93	0	9	86	0	26	36	22
VSM14-4	2	82	41	48	71	29	8	0	1
SCM16-51	2	87	0	35	92	9	7	47	48
SCM14-52	2	52	16	19	84	21	0	45	43

The neutralization activity of the nAb was determined by measuring its inhibition of pseudotyped sarbecovirus particles at a concentration of 10 μg/mL. An inhibition rate of greater than 50% was considered a positive readout.