

Table S1: Codon changes affecting amino acid in sars-cov-2 spike-protein gene their distributions

Sample	Reference ID	Amino Acid Change	Nucleotide Change	Codon Change	codon_count	codon_percent
N47215	sars-cov-2	VTWFHAI HVSNTN G61G	21747:TTACTTGGTTC CATGCTATACATGTC TCTGGGACCAATG>	21746:GTTACTTGGTTCC ATGCTATACATGTCTCTG GGACCAATGGT>GGT	GTTACTTGGTTCCATGCT ATACATGTCTCTGGGACC AATGGT-1783;GGT-182	GTTACTTGGTTCCATGCTATAC ATGTCTCTGGGACCAATGGT- 90.69;GGT-9.26
N47215	sars-cov-2	EFR155G	22029:AGTTCA>	22028:GAGTTCAGA>GGA	GAGTTCAGA-0;GGA-2962	GAGTTCAGA-0.00;GGA-99.80
N47215	sars-cov-2	EFR155G	22029:AGTTCA>	22028:GAGTTCAGA>GGT	GAGTTCAGA-0;GGT-3	GAGTTCAGA-0.00;GGT-0.10
N47215	sars-cov-2	EFR155A	22029:AGTTCA>	22028:GAGTTCAGA>GCA	GAGTTCAGA-0;GCA-2	GAGTTCAGA-0.00;GCA-0.07
N47215	sars-cov-2	EFR155G	22029:AGTTCA>	22028:GAGTTCAGA>GGC	GAGTTCAGA-0;GGC-1	GAGTTCAGA-0.00;GGC-0.03
N47215	sars-cov-2	V367F	22660:G>T	22660:GTC>TTC	GTC-1338;TTC-69	GTC-94.96;TTC-4.90
N47215	sars-cov-2	R403S	22770:A>C	22768:AGA>AGC	AGA-510;AGC-34	AGA-93.75;AGC-6.25
N47215	sars-cov-2	R408S	22785:A>C	22783:AGA>AGC	AGA-46;AGC-48	AGA-48.94;AGC-51.06
N47215	sars-cov-2	Y505H	23074:T>C	23074:TAC>CAC	TAC-758;CAC-7235	TAC-9.48;CAC-90.48

Table S2: Nucleotide substitution in sars-cov-2 spike-protein gene their distributions

Sample	Reference ID	pos	Reference Nucleotide	read_count	Nucleotide Frequency	Nucleotide Percent
N47215	sars-cov-2	21613	C	7271	T:7261	T:100
N47215	sars-cov-2	21617	C	7367	G:7359	G:100
N47215	sars-cov-2	21845	C	6698	T:6688	T:100
N47215	sars-cov-2	21986	G	3345	A:3343	A:100
N47215	sars-cov-2	22016	G	3488	T:3486	T:100
N47215	sars-cov-2	22117	T	7812	C:7807	C:100
N47215	sars-cov-2	22199	T	6581	G:6574	G:100
N47215	sars-cov-2	22577	G	1796	A:1793	A:100
N47215	sars-cov-2	22660	G	1301	G:1241,T:60	G:95,T:5
N47215	sars-cov-2	22673	C	1199	T:1197	T:100
N47215	sars-cov-2	22678	T	1191	C:1189	C:100
N47215	sars-cov-2	22685	C	1161	T:1159	T:100
N47215	sars-cov-2	22687	A	1161	G:1161	G:100
N47215	sars-cov-2	22770	A	516	A:480,C:34	A:93,C:7
N47215	sars-cov-2	22774	G	477	A:477	A:100
N47215	sars-cov-2	22785	A	92	A:44,C:48	A:48,C:52
N47215	sars-cov-2	22990	A	1592	G:1592	G:100
N47215	sars-cov-2	22991	G	1592	A:1592	A:100
N47215	sars-cov-2	22994	C	1616	A:1616	A:100
N47215	sars-cov-2	23012	A	4675	C:4672	C:100

N47215	sars-cov-2	23054	A	6498	G:6495	G:100
N47215	sars-cov-2	23062	A	6767	T:6761	T:100
N47215	sars-cov-2	23074	T	7791	T:712,C:7075	T:9,C:91
N47215	sars-cov-2	23402	A	7626	G:7619	G:100
N47215	sars-cov-2	23524	C	7536	T:7524	T:100
N47215	sars-cov-2	23598	T	4350	G:4346	G:100
N47215	sars-cov-2	23603	C	3995	A:3988	A:100
N47215	sars-cov-2	23853	C	37	A:37	A:100
N47215	sars-cov-2	23947	G	7800	T:7778	T:100
N47215	sars-cov-2	24423	A	7689	T:7680	T:100
N47215	sars-cov-2	24468	T	7529	A:7508	A:100
N47215	sars-cov-2	24911	C	6695	T:6679	T:100

Table S3: Selected nucleotide InDels in sars-cov-2 spike-protein gene their distributions

Sample	Reference ID	coor	Nucleotide Frequency	Nucleotide Percent
N47215	sars-cov-2	21106	insT:76,read_count:7996	0.95
N47215	sars-cov-2	21541	delTTGTAAACA:34,read_count:7980	0.43
N47215	sars-cov-2	21745	delGTTACTTGGTTCCATGCTATACATGTCTCTGGGACCAA T:265,read_count:7990	3.32
N47215	sars-cov-2	22027	delGAGTTC:2968,read_count:3458	85.83
N47215	sars-cov-2	22614	delT:8,read_count:1795	0.45
N47215	sars-cov-2	22684	delTCCACT:14,read_count:1199	1.17

Sample	Reference ID	coord	Nucleotide Frequency	Nucleotide Percent
N47215	sars-cov-2	21106	insT:76,read_count:7996	0.95
N47215	sars-cov-2	21541	delTTGTTAACA:34,read_count:7980	0.43
N47215	sars-cov-2	22979	delATCAGGCCGGTAGCACACCTTGTAATGGTGTGAAGG TTTT:6,read_count:1513	0.4
N47215	sars-cov-2	23924	delTTTACAAAACACCACCAATTAAAGATTTTGGTGGTTTT AATTTTTCACAAA:35,read_count:7998	0.44
N47215	sars-cov-2	24070	delTA:37,read_count:7966	0.46
N47215	sars-cov-2	24384	delAGCAAGTGCACCTTGGAACCTCAAGATGTGGTCAAC CAAAATGCAC:34,read_count:7523	0.45