

**Table S1.** Details about mutations identified in the S gene following sequence alignment with the Wuhan-Hu-1 SARS-CoV-2 strain.

Sample	Total Nucleotide number	position in the whole genome	N. change (Ref/Alt)	Variant type	A.A. position	A.A. change
1	3816	21618	C/G	nonsynonymous SNV	19	T/R
		21721	C/T	synonymous SNV	53	D/D
		21800	G/T	nonsynonymous SNV	80	D/Y
		21846	C/T	nonsynonymous SNV	95	T/I
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
		22247	T/C	synonymous SNV	229	L/L
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23191	C/T	synonymous SNV	543	F/F
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N
		21618	C/G	nonsynonymous SNV	19	T/R
		21721	C/T	synonymous SNV	53	D/D
2	3816	21846	C/T	nonsynonymous SNV	95	T/I
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N
		25352	G/T	nonsynonymous SNV	1264	V/L
		21618	C/G	nonsynonymous SNV	19	T/R
		21721	C/T	synonymous SNV	53	D/D
		21846	C/T	nonsynonymous SNV	95	T/I
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
		3	3816	22917	T/G	nonsynonymous SNV
22995	C/A			nonsynonymous SNV	478	T/K
23403	A/G			nonsynonymous SNV	614	D/G
23604	C/G			nonsynonymous SNV	681	P/R
24410	G/A			nonsynonymous SNV	950	D/N
25469	C/T			nonsynonymous SNV	77	V/I
21618	C/G			nonsynonymous SNV	19	T/R
21846	C/T			nonsynonymous SNV	95	T/I
21987	G/A			nonsynonymous SNV	142	G/D
22029-22034	AGTTCA/-			nonframeshift deletion	156_158del	-
22917	T/G			nonsynonymous SNV	452	L/R
22995	C/A			nonsynonymous SNV	478	T/K
23403	A/G			nonsynonymous SNV	614	D/G
23604	C/G			nonsynonymous SNV	681	P/R
4	3816			24410	G/A	nonsynonymous SNV
		24863	C/T	nonsynonymous SNV	1101	H/Y

		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
		22311	C/T	nonsynonymous SNV	250	T/I
		22444	C/T	synonymous SNV	294	D/D
5	3816	22597	C/T	synonymous SNV	345	T/T
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		23625	C/T	nonsynonymous SNV	688	A/V
		24410	G/A	nonsynonymous SNV	950	D/N
		25146	A/C	nonsynonymous SNV	1195	E/A
		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
		22104	G/T	nonsynonymous SNV	181	G/V
6	3816	22311	C/T	nonsynonymous SNV	250	T/I
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N
		21618	C/G	nonsynonymous SNV	19	T/R
		21846	C/T	nonsynonymous SNV	95	T/I
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	non frameshift deletion	156_158del	-
7	3816	22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N
		24872	G/T	nonsynonymous SNV	1104	V/L
		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
8	3816	22311	C/T	nonsynonymous SNV	250	T/I
		22468	G/T	synonymous SNV	302	T/T
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N

		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
9	3816	22311	C/T	nonsynonymous SNV	250	T/I
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		23909	G/A	nonsynonymous SNV	783	A/T
		24410	G/A	nonsynonymous SNV	950	D/N
		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
10	3816	22311	C/T	nonsynonymous SNV	250	T/I
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N
		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
11	3816	22311	C/T	nonsynonymous SNV	250	T/I
		22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N
		21618	C/G	nonsynonymous SNV	19	T/R
		21721	C/T	synonymous SNV	53	D/D
		21846	C/T	nonsynonymous SNV	95	T/I
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
12	3816	22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23533	C/T	synonymous SNV	657	N/N
		23604	C/G	nonsynonymous SNV	681	P/R
		24410	G/A	nonsynonymous SNV	950	D/N

		21618	C/G	nonsynonymous SNV	19	T/R
		21647	A/G	nonsynonymous SNV	29	T/A
		21987	G/A	nonsynonymous SNV	142	G/D
		22029-22034	AGTTCA/-	nonframeshift deletion	156_158del	-
		22088	C/T	nonsynonymous SNV	176	L/F
		22311	C/T	nonsynonymous SNV	250	T/I
13	3816	22917	T/G	nonsynonymous SNV	452	L/R
		22995	C/A	nonsynonymous SNV	478	T/K
		23401	G/T	nonsynonymous SNV	613	Q/H
		23403	A/G	nonsynonymous SNV	614	D/G
		23534	A/C	nonsynonymous SNV	658	N/H
		23604	C/G	nonsynonymous SNV	681	P/R
		23873	G/T	nonsynonymous SNV	771	A/S
		24410	G/A	nonsynonymous SNV	950	D/N
		21762	C/T	nonsynonymous SNV	67	A/V
		21765-21770	TACATG/-	nonframeshift deletion	68_70del	-
		21846	C/T	nonsynonymous SNV	95	T/I
		21987-21995	GTGTTTATT/-	nonframeshift deletion	142_145del	-
		22194-22196	ATT/-	nonframeshift deletion	211_212del	-
		22204	_ /GAGCCAGAA	nonframeshift insertion	-	R214delinsREPE
		22578	G/A	nonsynonymous SNV	339	G/D
		22599	G/A	nonsynonymous SNV	346	R/K
		22673	T/C	nonsynonymous SNV	371	S/P
		22674	C/T	nonsynonymous SNV	371	S/F
		22679	T/C	nonsynonymous SNV	373	S/P
		22686	C/T	nonsynonymous SNV	375	S/F
		22813	G/T	nonsynonymous SNV	417	K/N
		22882	T/G	nonsynonymous SNV	440	N/K
		22898	G/A	nonsynonymous SNV	446	G/S
		22992	G/A	nonsynonymous SNV	477	S/N
		22995	C/A	nonsynonymous SNV	478	T/K
14	3813	23013	A/C	nonsynonymous SNV	484	E/A
		23040	A/G	nonsynonymous SNV	493	Q/R
		23048	G/A	nonsynonymous SNV	496	G/S
		23055	A/G	nonsynonymous SNV	498	Q/R
		23063	A/T	nonsynonymous SNV	501	N/Y
		23075	T/C	nonsynonymous SNV	505	Y/H
		23202	C/A	nonsynonymous SNV	547	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23525	C/T	nonsynonymous SNV	655	H/Y
		23599	T/G	nonsynonymous SNV	679	N/K
		23604	C/A	nonsynonymous SNV	681	P/H
		23854	C/A	nonsynonymous SNV	764	N/K
		23948	G/T	nonsynonymous SNV	796	D/Y
		24130	C/A	nonsynonymous SNV	856	N/K
		24424	A/T	nonsynonymous SNV	954	Q/H
		24469	T/A	nonsynonymous SNV	969	N/K
		24503	C/T	nonsynonymous SNV	981	L/F
		25000	C/T	synonymous SNV	1146	D/D

		21762	C/T	nonsynonymous SNV	67	A/V
		21765-21770	TACATG/-	nonframeshift deletion	68_70del	-
		21846	C/T	nonsynonymous SNV	95	T/I
		21987-21995	GTGTTTATT/-	nonframeshift deletion	142_145del	-
		22194-22196	ATT/-	nonframeshift deletion	211_212del	-
		22204	_ /GAGCCAGAA	nonframeshift insertion	-	R214delinsREPE
		22578	G/A	nonsynonymous SNV	339	G/D
		22599	G/A	nonsynonymous SNV	346	R/K
		22673	T/C	nonsynonymous SNV	371	S/P
		22674	C/T	nonsynonymous SNV	371	S/F
		22679	T/C	nonsynonymous SNV	373	S/P
		22686	C/T	nonsynonymous SNV	375	S/F
		22813	G/T	nonsynonymous SNV	417	K/N
		22882	T/G	nonsynonymous SNV	440	N/K
		22898	G/A	nonsynonymous SNV	446	G/S
		22992	G/A	nonsynonymous SNV	477	S/N
		22995	C/A	nonsynonymous SNV	478	T/K
15	3813	23013	A/C	nonsynonymous SNV	484	E/A
		23040	A/G	nonsynonymous SNV	493	Q/R
		23048	G/A	nonsynonymous SNV	496	G/S
		23055	A/G	nonsynonymous SNV	498	Q/R
		23063	A/T	nonsynonymous SNV	501	N/Y
		23075	T/C	nonsynonymous SNV	505	Y/H
		23202	C/A	nonsynonymous SNV	547	T/K
		23403	A/G	nonsynonymous SNV	614	D/G
		23525	C/T	nonsynonymous SNV	655	H/Y
		23599	T/G	nonsynonymous SNV	679	N/K
		23604	C/A	nonsynonymous SNV	681	P/H
		23854	C/A	nonsynonymous SNV	764	N/K
		23948	G/T	nonsynonymous SNV	796	D/Y
		24130	C/A	nonsynonymous SNV	856	N/K
		24424	A/T	nonsynonymous SNV	954	Q/H
		24469	T/A	nonsynonymous SNV	969	N/K
		24503	C/T	nonsynonymous SNV	981	L/F
		25000	C/T	synonymous SNV	1146	D/D