

JVDI: Supplementary material

Cai H, Cai A. SARS-CoV2 spike protein gene variants with N501T and G142D mutation–dominated infections in mink in the United States

**Supplementary Table 1.** U.S. mink–derived SARS-CoV2 mutations in spike protein.

GISAID sequence	Collection date	Location	Mutations in S protein				
			G142	Y144	F486	N501	D614
hCoV-19/mink/USA/MI-CDC-IHO1-6827/2020 EPI_ISL_925341 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHOZ-6866/2020 EPI_ISL_925354 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHP1-6869/2020 EPI_ISL_925342 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHP2-6870/2020 EPI_ISL_925353 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHPJ-6890/2020 EPI_ISL_925314 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHQ4-6914/2020 EPI_ISL_925343 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHQ7-6918/2020 EPI_ISL_925344 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHQE-6926/2020 EPI_ISL_925355 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHQV-6946/2020 EPI_ISL_925336 2020-10-13	2020-10-13	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHRD-6976/2020 EPI_ISL_925345 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHRM-6977/2020 EPI_ISL_925356 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHRU-6987/2020 EPI_ISL_925315 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHS4-6998/2020 EPI_ISL_925357 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHSI-7015/2020 EPI_ISL_925346 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHSO-7022/2020 EPI_ISL_925347 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHTR-7067/2020 EPI_ISL_925348 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHTS-7068/2020 EPI_ISL_925358 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHU3-7081/2020 EPI_ISL_925349 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHU4-7082/2020 EPI_ISL_925334 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHU5-7083/2020 EPI_ISL_925360 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHU6-7085/2020 EPI_ISL_925337 2020-10-13	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G

## SARS-CoV2 N501T-G142D variants dominated infections in minks in the US

hCoV-19/mink/USA/MI-CDC-IHU7-7086/2020 EPI_ISL_925338 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUD-7093/2020 EPI_ISL_925350 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUE-7094/2020 EPI_ISL_925335 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUH-7098/2020 EPI_ISL_925339 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUI-7099/2020 EPI_ISL_925340 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUK-7101/2020 EPI_ISL_925351 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUL-7102/2020 EPI_ISL_925359 2020-10-14	2020-10-14	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHUR-7108/2020 EPI_ISL_925352 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHVC-7129/2020 EPI_ISL_925318 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHVN-7139/2020 EPI_ISL_925323 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHVN-7173/2020 EPI_ISL_925316 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHVT-7174/2020 EPI_ISL_925330 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHVZ-7167/2020 EPI_ISL_925325 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHW2-3526/2020 EPI_ISL_925320 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHW5-7133/2020 EPI_ISL_925322 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHWB-7153/2020 EPI_ISL_925308 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	WT/N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHWC-7160/2020 EPI_ISL_925324 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHWU-3519/2020 EPI_ISL_925319 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHX8-7146/2020 EPI_ISL_925309 2020-10-15	2020-10-15	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHXX-7228/2020 EPI_ISL_925326 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHXZ-7239/2020 EPI_ISL_925333 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHYE-7249/2020 EPI_ISL_925317 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHYF-7184/2020 EPI_ISL_925331 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHZF-7215/2020 EPI_ISL_925332 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-IHZZ-7327/2020 EPI_ISL_925312 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II0C-7328/2020 EPI_ISL_925310 2020-10-17	2020-10-17	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II12-7329/2020 EPI_ISL_925313 2020-10-18	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II16-7296/2020 EPI_ISL_925329 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II19-7314/2020 EPI_ISL_925311 2020-10-18	2020-10-18	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II1E-7315/2020 EPI_ISL_925327 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II1G-3562/2020 EPI_ISL_925328 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/MI-CDC-II1O-7265/2020 EPI_ISL_925307 2020-10-16	2020-10-16	Michigan	G142D	del	ND	WT	D614G

## SARS-CoV2 N501T-G142D variants dominated infections in minks in the US

hCoV-19/mink/USA/MI-CDC-IIIP-3558/2020 EPI_ISL_925321 2020-10-16	2020-10-16	Michigan	G142D	del	F486L	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWOF-2204/2020 EPI_ISL_1014965 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWOZ-2205/2020 EPI_ISL_1014950 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWPJ-2206/2020 EPI_ISL_1014943 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWQ5-2422/2020 EPI_ISL_1014974 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWR7-2209/2020 EPI_ISL_1014951 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWTH-2425/2020 EPI_ISL_1014946 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWV3-2216/2020 EPI_ISL_1014952 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWWU-2430/2020 EPI_ISL_1014945 2020-10-15	2020-10-15	Wisconsin	ND	ND	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWXY-2431/2020 EPI_ISL_1014975 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CWYZ-2306/2020 EPI_ISL_1014955 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX0O-2226/2020 EPI_ISL_1014953 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX2X-2436/2020 EPI_ISL_1014948 2020-10-15	2020-10-15	Wisconsin	ND	ND	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX4L-2439/2020 EPI_ISL_1014941 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX5N-2235/2020 EPI_ISL_1014966 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX6R-2237/2020 EPI_ISL_1014947 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX7Y-2442/2020 EPI_ISL_1014956 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX8H-2443/2020 EPI_ISL_1014957 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CX9K-2242/2020 EPI_ISL_1014954 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXA4-2243/2020 EPI_ISL_1014944 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXAN-2244/2020 EPI_ISL_1014967 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXB7-2245/2020 EPI_ISL_1014942 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXHY-2454/2020 EPI_ISL_1014958 2020-10-15	2020-10-15	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXP3-2270/2020 EPI_ISL_1014968 2020-10-14	2020-10-14	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXPO-2271/2020 EPI_ISL_1014969 2020-10-14	2020-10-14	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXQA-2462/2020 EPI_ISL_1014959 2020-10-14	2020-10-14	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXQU-2463/2020 EPI_ISL_1014976 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXRE-2464/2020 EPI_ISL_1014960 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXRY-2465/2020 EPI_ISL_1014977 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXSH-2466/2020 EPI_ISL_1014961 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXT2-2467/2020 EPI_ISL_1014978 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXTJ-2278/2020 EPI_ISL_1014970 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G

SARS-CoV2 N501T-G142D variants dominated infections in minks in the US

hCoV-19/mink/USA/WI-CDC-CXU6-2469/2020 EPI_ISL_1014979 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXUQ-2470/2020 EPI_ISL_1014962 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXVA-2471/2020 EPI_ISL_1014980 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXVU-2472/2020 EPI_ISL_1014981 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXWE-2473/2020 EPI_ISL_1014982 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXWY-2474/2020 EPI_ISL_1014963 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXXI-2475/2020 EPI_ISL_1014983 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXY2-2476/2020 EPI_ISL_1014984 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXYL-2477/2020 EPI_ISL_1014985 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXZ6-2478/2020 EPI_ISL_1014986 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CXZO-2289/2020 EPI_ISL_1014971 2020-10-13	2020-10-13	Wisconsin	G142D/G142Y	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CY09-2480/2020 EPI_ISL_1014987 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CY0S-2291/2020 EPI_ISL_1014972 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CY1D-2482/2020 EPI_ISL_1014949 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CY1V-2293/2020 EPI_ISL_1014964 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G
hCoV-19/mink/USA/WI-CDC-CY2G-2294/2020 EPI_ISL_1014973 2020-10-13	2020-10-13	Wisconsin	G142D	WT	WT	N501T	D614G

ND = not determined due to poor sequence quality in the region; WT = no mutation compared to NC\_045512.2 severe acute respiratory syndrome coronavirus 2 isolate Wuhan-Hu-1, complete genome. All F486L mutations in U.S. mink-derived sequences were due to T23047G mutation.

**Supplementary Table 2.** SARS-CoV2 spike protein N501T variants in Canadian mink– and human–derived sequences.

	Host	Collection date	Mutation in S protein			
			G142	F486	N501	D614
hCoV-19/mink/Canada/D/2020 EPI_ISL_717717 2020-12-04	Mink	2020-12	WT*	WT	WT	D614G
hCoV-19/mink/Canada/C/2020 EPI_ISL_717716 2020-12-04	Mink	2020-12	WT	WT	WT	D614G
hCoV-19/mink/Canada/B/2020 EPI_ISL_717715 2020-12-04	Mink	2020-12	WT	WT	WT	D614G
hCoV-19/mink/Canada/A/2020 EPI_ISL_717714 2020-12-04	Mink	2020-12	WT	F486L*	WT	D614G
hCoV-19/Canada/ON-UHTC_0390/2020 EPI_ISL_698100 2020-11-24	Human	2020-11	WT	WT	N501T	D614G
hCoV-19/Canada/ON-PHL-21-00780/2021 EPI_ISL_966110 2021-01	Human	2021-01	WT	WT	N501T	D614G
hCoV-19/Canada/ON-PHL-20-03664/2020 EPI_ISL_775102 2020-11	Human	2020-11	WT	WT	N501T	D614G
hCoV-19/Canada/ON-PHL-20-03660/2020 EPI_ISL_775098 2020-11	Human	2020-11	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5535/2020 EPI_ISL_1055694 2020-12-22	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5251/2020 EPI_ISL_1055536 2020-12-26	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5226/2020 EPI_ISL_1055517 2020-12-12	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5219/2020 EPI_ISL_1055511 2020-12-14	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5217/2020 EPI_ISL_1055509 2020-12-15	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5216/2020 EPI_ISL_1055508 2020-12-15	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5215/2020 EPI_ISL_1055507 2020-12-15	Human	2020-12	WT	WT	N501T	D614G
hCoV-19/Canada/NS-NML-5195/2020 EPI_ISL_1055491 2020-12-21	Human	2020-12	WT	WT	N501T	D614G

WT = no mutation compared to NC\_045512.2 severe acute respiratory syndrome coronavirus 2 isolate Wuhan-Hu-1, complete genome.

\* F486L mutation was due to T23045C mutation.

**Supplementary Table 3.** SARS-CoV2 spike protein mutations in Danish and Netherlands mink N501T variants.

GISAID sequence	Collection date	Mutations in S protein			
		G142	F486	N501	D614
hCoV-19/mink/Netherlands/NB-EMC-8-16/2020 EPI_ISL_523115 2020-06-01	2020-06-01	WT	WT	N501T	D614G
hCoV-19/mink/Netherlands/NB-EMC-6-14/2020 EPI_ISL_523099 2020-05-30	2020-05-30	WT	WT	N501T	D614G
hCoV-19/mink/Netherlands/NB-EMC-5-13/2020 EPI_ISL_523097 2020-05-30	2020-05-30	WT	WT	N501T	WT
hCoV-19/mink/Netherlands/NB-EMC-1-2/2020 EPI_ISL_523004 2020-04-28	2020-04-28	WT	WT	N501T	D614G
hCoV-19/mink/Netherlands/NB01_02KS/2020 EPI_ISL_447624 2020-04-29	2020-04-29	WT	WT	N501T	D614G
hCoV-19/mink/Denmark/mDK-174/2020 EPI_ISL_683025 2020-11-04	2020-11-04	WT	WT	N501T	D614G
hCoV-19/mink/Denmark/mDK-173/2020 EPI_ISL_683024 2020-11-04	2020-11-04	WT	WT	N501T	D614G
hCoV-19/mink/Denmark/mDK-172/2020 EPI_ISL_683023 2020-11-04	2020-11-04	WT	WT	N501T	D614G

WT = no mutation compared to NC\_045512.2 severe acute respiratory syndrome coronavirus 2 isolate Wuhan-Hu-1, complete genome.

**Supplementary Table 4.** Earliest SARS-CoV2 spike protein N501T variants in U.S. human infection.

	Collection date	Location	Mutation in S protein			
			G142	F486	N501	D614G
hCoV-19/USA/WA-S3056/2020 EPI_ISL_806986 2020-08-21	2020-08	Washington	WT*	WT	N501T	D614G
hCoV-19/USA/WA-S3043/2020 EPI_ISL_806973 2020-08-20	2020-08	Washington	WT	WT	N501T	D614G
hCoV-19/USA/WA-S3042/2020 EPI_ISL_806972 2020-08-20	2020-08	Washington	WT	WT	N501T	D614G
hCoV-19/USA/WA-S2930/2020 EPI_ISL_806860 2020-08-26	2020-08	Washington	WT	WT	N501T	D614G
hCoV-19/USA/NY-AECOM_113/2020 EPI_ISL_826657 2020-08-04	2020-08	New York	WT	WT	N501T	D614G
hCoV-19/USA/MA-MGH-03101/2020 EPI_ISL_765704 2020-08-31	2020-08	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00220/2020 EPI_ISL_976938 2020-08-18	2020-08	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00176/2020 EPI_ISL_976927 2020-08-28	2020-08	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00004/2020 EPI_ISL_935524 2020-08-31	2020-08	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00003/2020 EPI_ISL_935523 2020-08-29	2020-08	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/NY-MSHSPSP-PV19363/2020 EPI_ISL_802301 2020-09-29	2020-09	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-MSHSPSP-PV18763/2020 EPI_ISL_802255 2020-09-17	2020-09	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-MSHSPSP-PV18395/2020 EPI_ISL_801870 2020-09-09	2020-09	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-AECOM_117/2020 EPI_ISL_826660 2020-09-01	2020-09	New York	WT	WT	N501T	D614G
hCoV-19/USA/MA-MASPHL-00715/2020 EPI_ISL_692948 2020-09-08	2020-09	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00186/2020 EPI_ISL_976931 2020-09-17	2020-09	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00160/2020 EPI_ISL_976919 2020-09-19	2020-09	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00150/2020 EPI_ISL_976913 2020-09-13	2020-09	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/MA-Broad_UMMS-00005/2020 EPI_ISL_935526 2020-09-03	2020-09	Massachusetts	WT	WT	N501T	D614G
hCoV-19/USA/CT-Yale-1286/2020 EPI_ISL_1080462 2020-09-03	2020-09	Connecticut	WT	WT	N501T	D614G
hCoV-19/USA/CT-Yale-455/2020 EPI_ISL_729735 2020-09-12	2020-09	Connecticut	WT	WT	N501T	D614G
hCoV-19/USA/CT-QDX-4500/2020 EPI_ISL_937037 2020-09-29	2020-09	Connecticut	WT	WT	N501T	D614G
hCoV-19/USA/CT-QDX-4499/2020 EPI_ISL_937036 2020-09-15	2020-09	Connecticut	WT	WT	N501T	D614G
hCoV-19/USA/WI-WSLH-200723/2020 EPI_ISL_631479 2020-10-03	2020-10	Wisconsin	G142D	WT	N501T	D614G
hCoV-19/USA/WI-WSLH-200722/2020 EPI_ISL_631478 2020-10-03	2020-10	Wisconsin	G142D	WT	N501T	D614G
hCoV-19/USA/WI-WSLH-200721/2020 EPI_ISL_631477 2020-10-03	2020-10	Wisconsin	G142D	WT	N501T	D614G
hCoV-19/USA/UT-UPHL-2012365234/2020 EPI_ISL_745648 2020-10-21	2020-10	Utah	G142D	WT	N501T	D614G
hCoV-19/USA/TX-HMH-MCoV-15117/2020 EPI_ISL_786601 2020-10-17	2020-10	Texas	WT	WT	N501T	D614G

## SARS-CoV2 N501T-G142D variants dominated infections in minks in the US

hCoV-19/USA/NY-NYCPHL-001123/2020 EPI_ISL_671706 2020-10-22	2020-10	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-NYCPHL-001121/2020 EPI_ISL_671704 2020-10-22	2020-10	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-NYCPHL-001058/2020 EPI_ISL_633065 2020-10-09	2020-10	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-NYCPHL-001053/2020 EPI_ISL_633063 2020-10-13	2020-10	New York	WT	WT	N501T	D614G
hCoV-19/USA/NY-MSHSPSP-PV19680/2020 EPI_ISL_802371 2020-10-08	2020-10	New York	WT	WT	N501T	D614G
hCoV-19/USA/MI-MDHHS-SC22140/2020 EPI_ISL_614191 2020-10-06	2020-10	Michigan	G142D	F486L	N501T	D614G
hCoV-19/USA/MI-MDHHS-SC22125/2020 EPI_ISL_614176 2020-10-06	2020-10	Michigan	WT/G142D	F486L	N501T	D614G
hCoV-19/USA/MA-MGH-03876/2020 EPI_ISL_1011513 2020-10-27	2020-10	Massachusetts	G142	WT	N501T	D614G
hCoV-19/USA/MA-MGH-02843/2020 EPI_ISL_765660 2020-10-26	2020-10	Massachusetts	G142	WT	N501T	D614G
hCoV-19/USA/MA-MASPHL-00914/2020 EPI_ISL_692834 2020-10-22	2020-10	Massachusetts	G142	WT	N501T	D614G
hCoV-19/USA/LA-EVTL1833/2020 EPI_ISL_1039534 2020-10-09	2020-10	Louisiana	G142	WT	N501T	D614G
hCoV-19/USA/CT-QDX-3402/2020 EPI_ISL_884321 2020-10-29	2020-10	Connecticut	G142	WT	N501T	D614G
hCoV-19/USA/CT-QDX-3400/2020 EPI_ISL_884319 2020-10-30	2020-10	Connecticut	G142	WT	N501T	D614G

WT = no mutation compared to NC\_045512.2 severe acute respiratory syndrome coronavirus 2 isolate Wuhan-Hu-1, complete genome.



**Supplementary Table 5.** Incidence of N501Y and N501T mutations in U.S. and Canadian SARS-CoV2 sequences.

Location	N501Y		N501T		Total*
United States	4,097	2.4%	1,339	0.77%	173,277
Canada	315	1.60%	12	0.06%	19,529
World	162,378	21.30%	ND	ND	760,644

ND = not determined.

\* Sequences were downloaded from GISAID on March 12, 2021.