# COVID-19 subject HUP Q-0070

2021-06-23

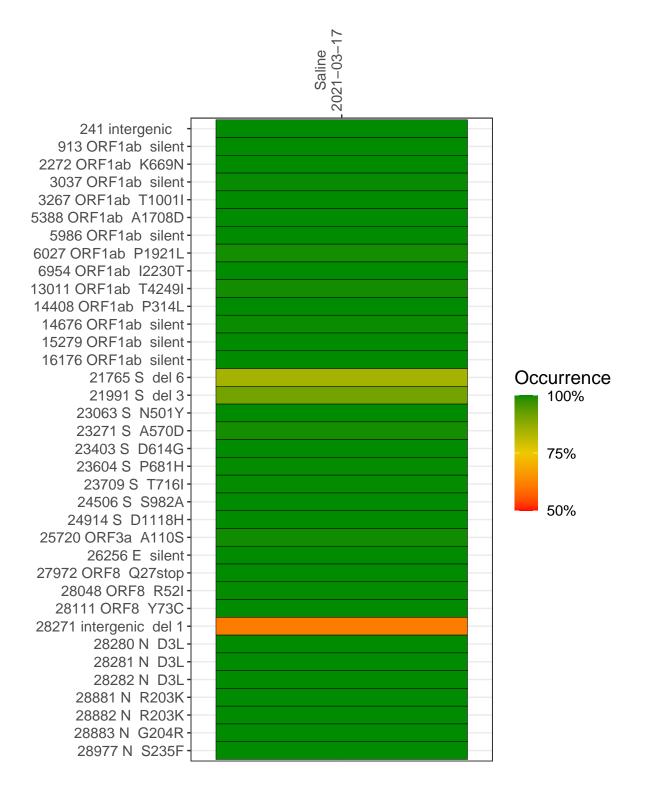
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software tool (Rambaut et al 2020) for genomes with > 90% sequence coverage.

Table 1. Sample summary.

Experiment	Туре	Genomes	Sample type	Sample date	Largest contig (KD)	Lineage	Reference read coverage	Reference read coverage (>= 5 reads)
VSP1237-1	single experiment	NA	Saline	2021-03-17	29.80	B.1.1.7	99.7%	99.7%

#### Variants shared across samples

The heat map below shows how variants (reference genome /home/common/SARS-CoV-2-Philadelphia/Wuhan-Hu-1) are shared across subject samples where the percent variance is colored. Variants are called if a variant position is covered by 5 or more reads, the alternative base is found in > 50% of read pairs and the variant yields a PHRED score > 20. Gray tiles denote positions where the variant was not the major variant or no variants were found. The relative base compositions of each experiment used to calculate tiles are shown in the following plot where the total number of position reads are shown atop of each plot.



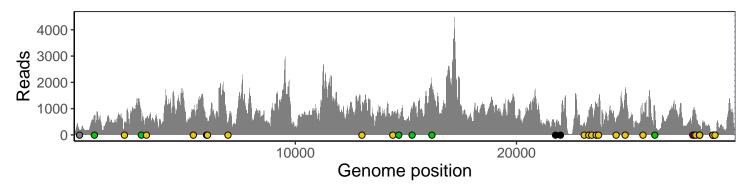
#### Saline 2021-03-17

	2021-03-17
241 intergenic	183
913 ORF1ab silent	709
2272 ORF1ab K669N	422
3037 ORF1ab silent	572
3267 ORF1ab T1001I	672
5388 ORF1ab A1708D	868
5986 ORF1ab silent	650
6027 ORF1ab P1921L	511
6954 ORF1ab I2230T	410
13011 ORF1ab T4249I	822
14408 ORF1ab P314L	750
14676 ORF1ab silent	415
15279 ORF1ab silent	882
16176 ORF1ab silent	1716
21765 S del 6	286
21991 S del 3	305
23063 S N501Y	457
23271 S A570D	690
23403 S D614G	1138
23604 S P681H	1145
23709 S T716I	1026
24506 S S982A	618
24914 S D1118H	1820
25720 ORF3a A110S	685
26256 E silent	924
27972 ORF8 Q27stop	893
28048 ORF8 R52I	915
28111 ORF8 Y73C	723
28271 intergenic del 1	284
28280 N D3L	167
28281 N D3L	167
28282 N D3L	179
28881 N R203K	23
28882 N R203K	23
28883 N G204R	23
28977 N S235F	40
	7
	37

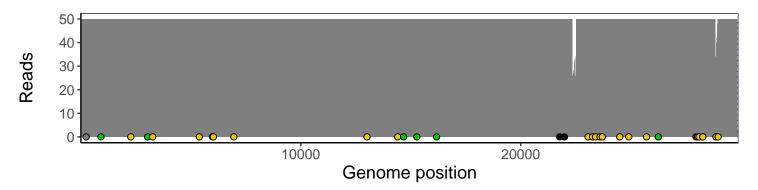
### Analyses of individual experiments and composite results

#### VSP1237-1 | 2021-03-17 | Saline | HUP Q-0070 | genomes | single experiment

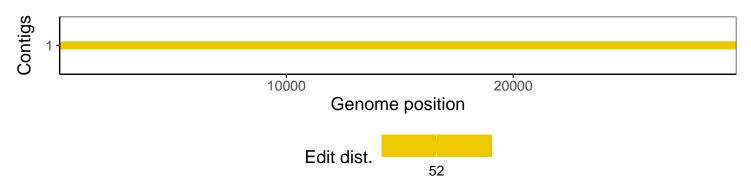
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



Excerpt from plot above focusing on reads coverage from 0 to 50 NT.



The longest five assembled contigs are shown below colored by their edit distance to the reference genome.



## Software environment

Software/R package	Version
R	3.4.0
bwa	0.7.17-r1198-dirty
samtools	1.10 Using htslib 1.10
bcftools	1.10.2-34-g1a12af0-dirty Using htslib $1.10.2-57-gf58a6f3$
pangolin	3.1.3
genbankr	1.4.0
optparse	1.6.0
forcats	0.3.0
stringr	1.4.0
dplyr	0.8.1
purrr	0.2.5
readr	1.1.1
tidyr	0.8.1
tibble	2.1.2
ggplot2	3.3.3
tidyverse	1.2.1
ShortRead	1.34.2
GenomicAlignments	1.12.2
${\bf Summarized Experiment}$	1.6.5
DelayedArray	0.2.7
matrixStats	0.54.0
Biobase	2.36.2
Rsamtools	1.28.0
GenomicRanges	1.28.6
GenomeInfoDb	1.12.3
Biostrings	2.44.2
XVector	0.16.0
IRanges	2.10.5
S4Vectors	0.14.7
BiocParallel	1.10.1
BiocGenerics	0.22.1