# COVID-19 subject HUP Q-0035

2021-05-05

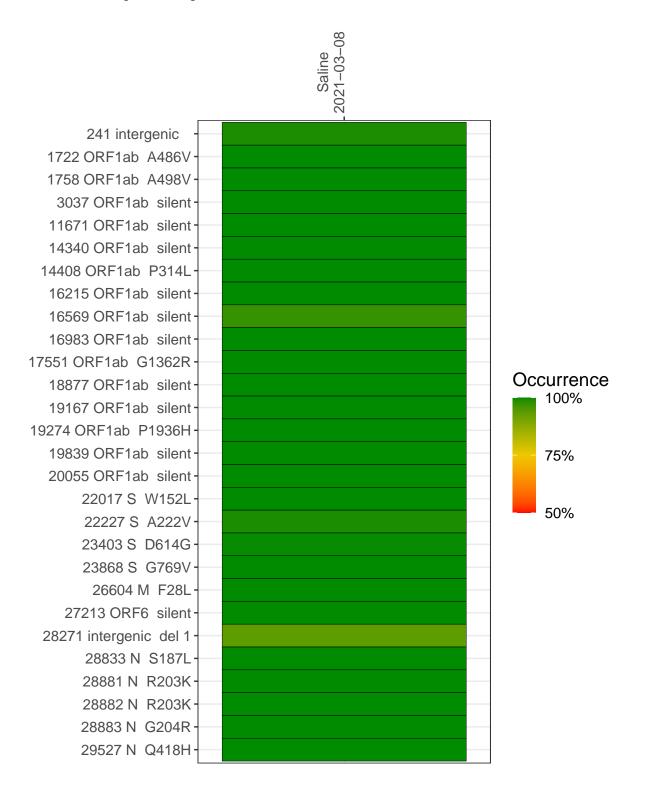
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP1217-1	single experiment	NA	Saline	2021-03-08	7.46	NA	99.3%	94.4%

#### Variants shared across samples

The heat map below shows how variants (reference genome /home/everett/projects/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 2021-03-08

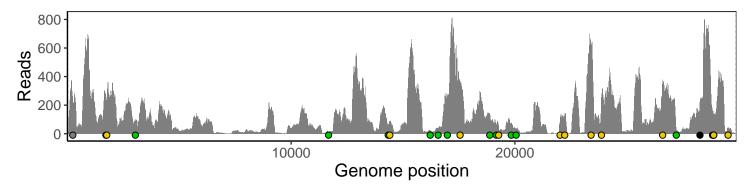
	2021-03-08
241 intergenic	227
1722 ORF1ab A486V	227
1758 ORF1ab A498V	226
3037 ORF1ab silent	82
11671 ORF1ab silent	14
14340 ORF1ab silent	62
14408 ORF1ab P314L	83
16215 ORF1ab silent	24
16569 ORF1ab silent	38
16983 ORF1ab silent	247
17551 ORF1ab G1362R	343
18877 ORF1ab silent	139
19167 ORF1ab silent	74
19274 ORF1ab P1936H	56
19839 ORF1ab silent	78
20055 ORF1ab silent	34
22017 S W152L	82
22227 S A222V	117
23403 S D614G	619
23868 S G769V	255
26604 M F28L	359
27213 ORF6 silent	17
28271 intergenic del 1	213
28833 N S187L	161
28881 N R203K	106
28882 N R203K	104
28883 N G204R	104
29527 N Q418H	41
	7-7
	VSP1217-1
	×S ∨
	· ·



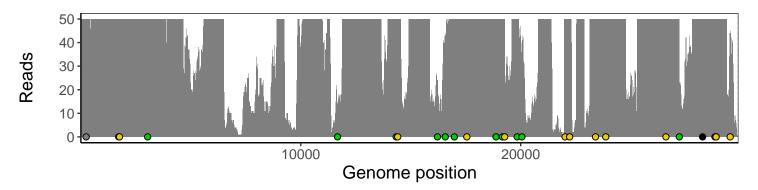
## Analyses of individual experiments and composite results

## VSP1217-1 | 2021-03-08 | Saline | HUP Q-0035 | genomes | single experiment

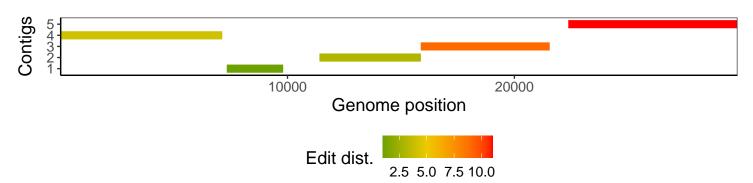
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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	2.3.8
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	3.0.0
tidyverse	1.2.1
ShortRead	1.34.2
${\it Genomic Alignments}$	1.12.2
SummarizedExperiment	1.6.5
DelayedArray	0.2.7
matrixStats	0.54.0
Biobase	2.36.2
Rsamtools	1.28.0
GenomicRanges	1.28.6
$\operatorname{GenomeInfoDb}$	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