# COVID-19 subject UPHS-0279

2021-04-17

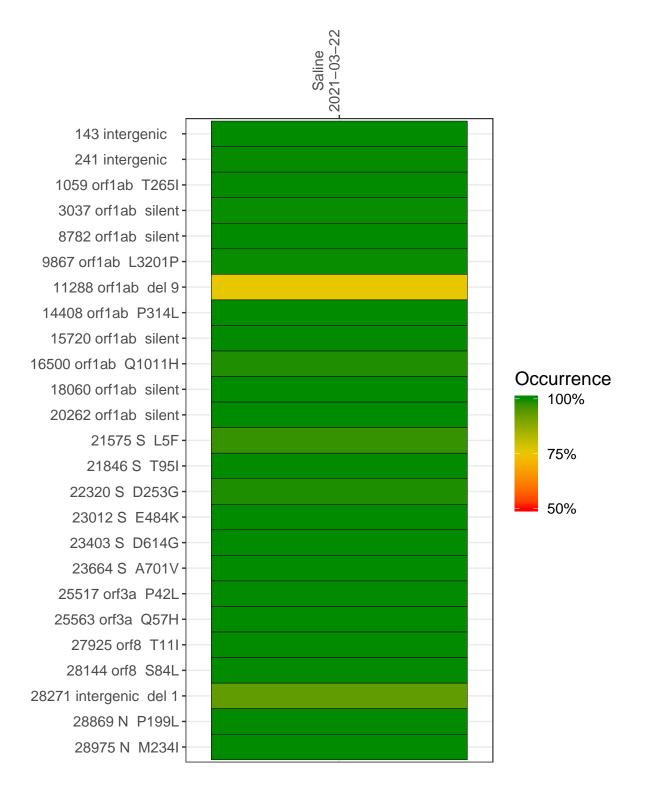
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP1324-1	single experiment	NA	Saline	2021-03-22	29.81	B.1.526	99.8%	99.8%

#### Variants shared across samples

The heat map below shows how variants (reference genome /home/everett/projects/SARS-CoV-2-Philadelphia/USA-WA1-2020) 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 2021-03-22

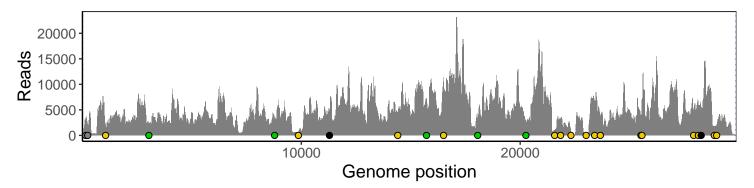
143 intergenic	3233
241 intergenic	2179
1059 orf1ab T265I	1606
3037 orf1ab silent	2197
8782 orf1ab silent	3361
9867 orf1ab L3201P	549
11288 orf1ab del 9	3001
14408 orf1ab P314L	4140
15720 orf1ab silent	7176
16500 orf1ab Q1011H	9679
18060 orf1ab silent	3345
20262 orf1ab silent	2544
21575 S L5F	953
21846 S T95I	2989
22320 S D253G	766
23012 S E484K	86
23403 S D614G	6810
23664 S A701V	3172
	3172
25517 orf3a P42L	3844
25517 orf3a P42L 25563 orf3a Q57H	
	3844
25563 orf3a Q57H	3844 6733
25563 orf3a Q57H 27925 orf8 T11I	3844 6733 4608
25563 orf3a Q57H 27925 orf8 T11I 28144 orf8 S84L	3844 6733 4608 6019
25563 orf3a Q57H 27925 orf8 T11I 28144 orf8 S84L 28271 intergenic del 1	3844 6733 4608 6019 5096



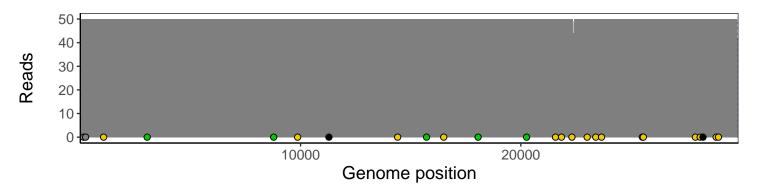
### Analyses of individual experiments and composite results

#### $VSP1324-1 \mid 2021-03-22 \mid Saline \mid UPHS-0279 \mid genomes \mid single \; experiment$

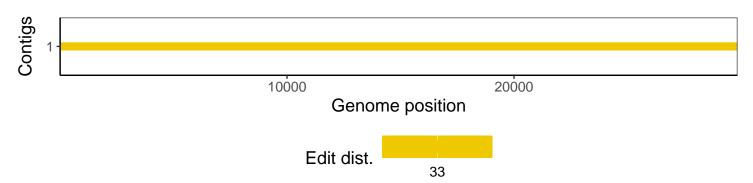
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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