# COVID-19 subject UPHS-0113

2021-04-17

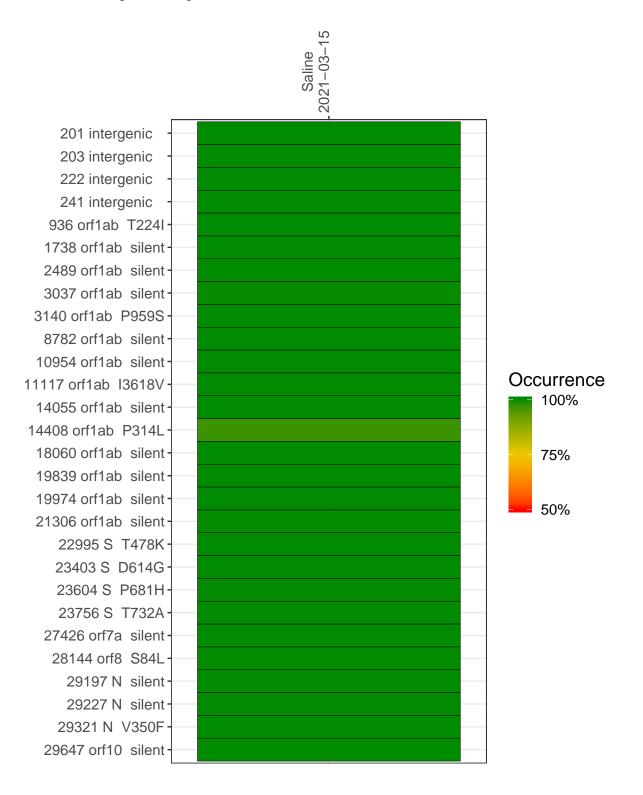
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP1098-1	single experiment	NA	Saline	2021-03-15	7.54	NA	98.5%	94.9%

#### 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 2021-03-15

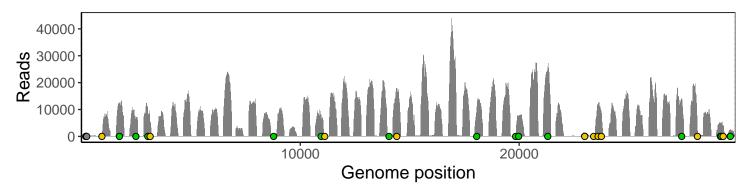
	2021 00 10
201 intergenic	59
203 intergenic	56
222 intergenic	77
241 intergenic	66
936 orf1ab T224I	153
1738 orf1ab silent	11877
2489 orf1ab silent	6521
3037 orf1ab silent	8212
3140 orf1ab P959S	5411
8782 orf1ab silent	38
10954 orf1ab silent	<b>724</b> 9
11117 orf1ab I3618V	18
14055 orf1ab silent	168
14408 orf1ab P314L	16210
18060 orf1ab silent	10676
19839 orf1ab silent	22
19974 orf1ab silent	7128
21306 orf1ab silent	22751
22995 S T478K	1356
23403 S D614G	35
23604 S P681H	11254
23756 S T732A	9419
27426 orf7a silent	13831
28144 orf8 S84L	2585
29197 N silent	4900
29227 N silent	5031
29321 N V350F	4068
29647 orf10 silent	2463
	098–1
	<u>ග</u>



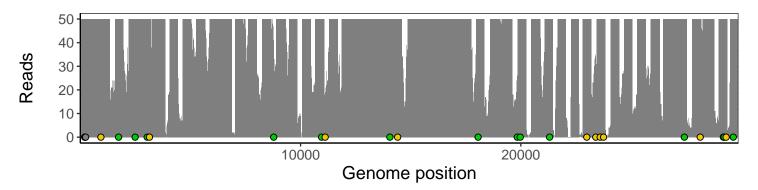
### Analyses of individual experiments and composite results

#### $VSP1098-1 \mid 2021-03-15 \mid Saline \mid UPHS-0113 \mid genomes \mid single \; experiment$

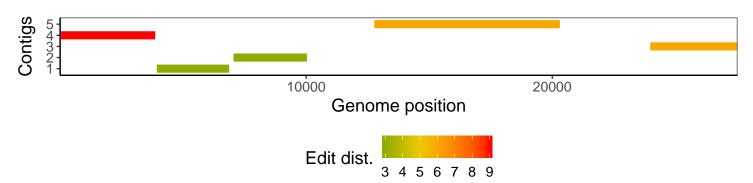
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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