# COVID-19 subject UPHS-0507

2021-06-01

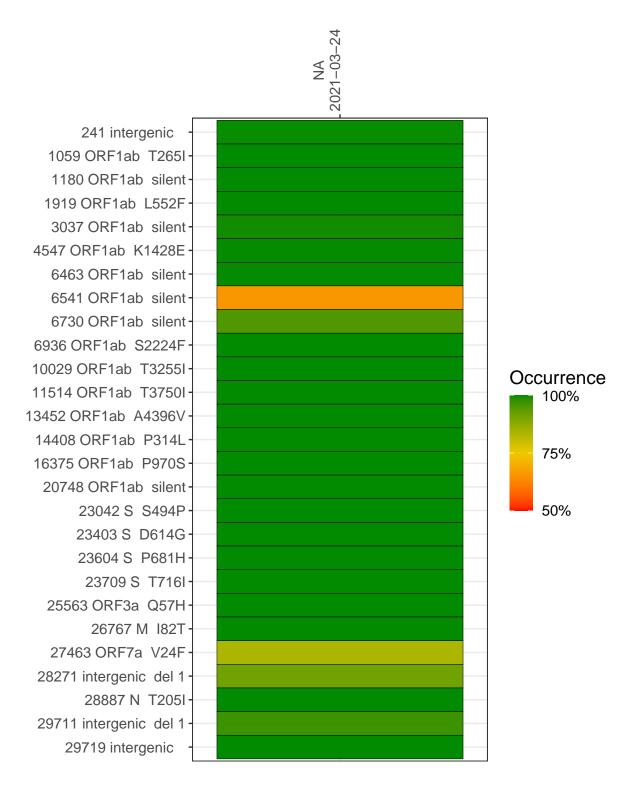
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP1633-1	single experiment	NA	NA	2021 - 03 - 24	29.86	B.1.575	99.8%	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.



#### NA 2021-03-24

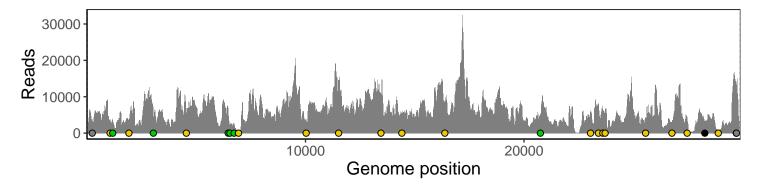
	2021-03-24
241 intergenic	3108
1059 ORF1ab T265I	3462
1180 ORF1ab silent	3751
1919 ORF1ab L552F	3890
3037 ORF1ab silent	4689
4547 ORF1ab K1428E	6140
6463 ORF1ab silent	6649
6541 ORF1ab silent	2022
6730 ORF1ab silent	2531
6936 ORF1ab S2224F	38
10029 ORF1ab T3255I	3552
11514 ORF1ab T3750I	13664
13452 ORF1ab A4396V	10270
14408 ORF1ab P314L	4859
16375 ORF1ab P970S	8194
20748 ORF1ab silent	5050
23042 S S494P	5869
23403 S D614G	7896
23604 S P681H	6144
23709 S T716I	5684
25563 ORF3a Q57H	4146
26767 M 182T	2943
27463 ORF7a V24F	4299
28271 intergenic del 1	3277
28887 N T205I	806
29711 intergenic del 1	13263
29719 intergenic	12194
	VSP1633-1



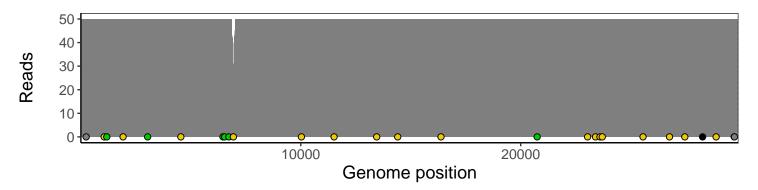
### Analyses of individual experiments and composite results

#### VSP1633-1 | 2021-03-24 | NA | UPHS-0507 | genomes | single experiment

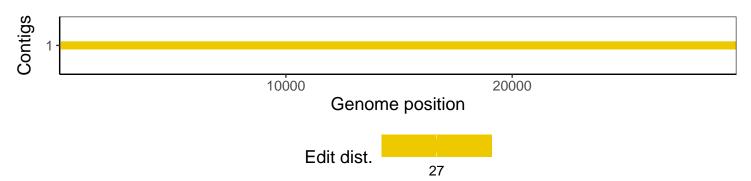
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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	3.3.3
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