COVID-19 subject UPHS-1370

2021-06-23

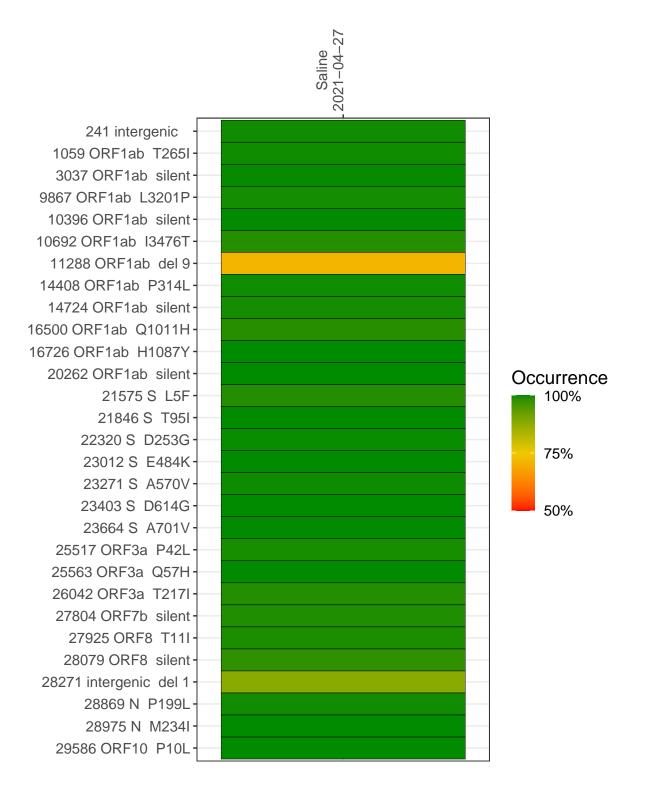
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP2625-1	single experiment	NA	Saline	2021-04-27	29.87	B.1.526	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.



Saline 2021-04-27

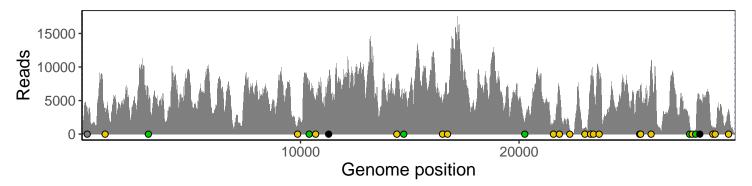
	2021-04-21
241 intergenic	3310
1059 ORF1ab T265I	3432
3037 ORF1ab silent	5225
9867 ORF1ab L3201P	1277
10396 ORF1ab silent	7528
10692 ORF1ab I3476T	5057
11288 ORF1ab del 9	4976
14408 ORF1ab P314L	7793
14724 ORF1ab silent	4742
16500 ORF1ab Q1011H	4713
16726 ORF1ab H1087Y	5836
20262 ORF1ab silent	1650
21575 S L5F	1584
21846 S T95I	6186
22320 S D253G	536
23012 S E484K	780
23271 S A570V	7143
23403 S D614G	8010
23664 S A701V	7902
25517 ORF3a P42L	5205
25563 ORF3a Q57H	6693
26042 ORF3a T217I	9100
27804 ORF7b silent	1550
27925 ORF8 T11I	126
28079 ORF8 silent	97
28271 intergenic del 1	4970
28869 N P199L	970
28975 N M234I	847
29586 ORF10 P10L	3228
	7



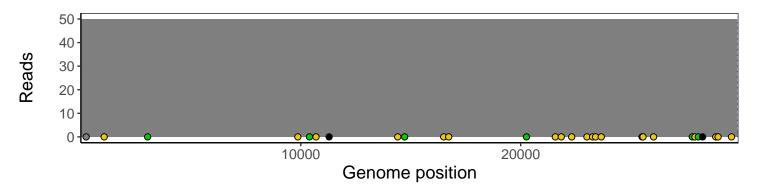
Analyses of individual experiments and composite results

VSP2625-1 | 2021-04-27 | Saline | UPHS-1370 | genomes | single experiment

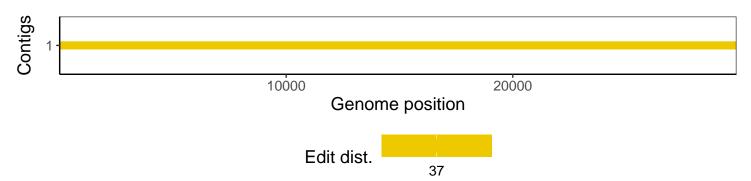
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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