COVID-19 subject UPHS-0065

2021-03-25

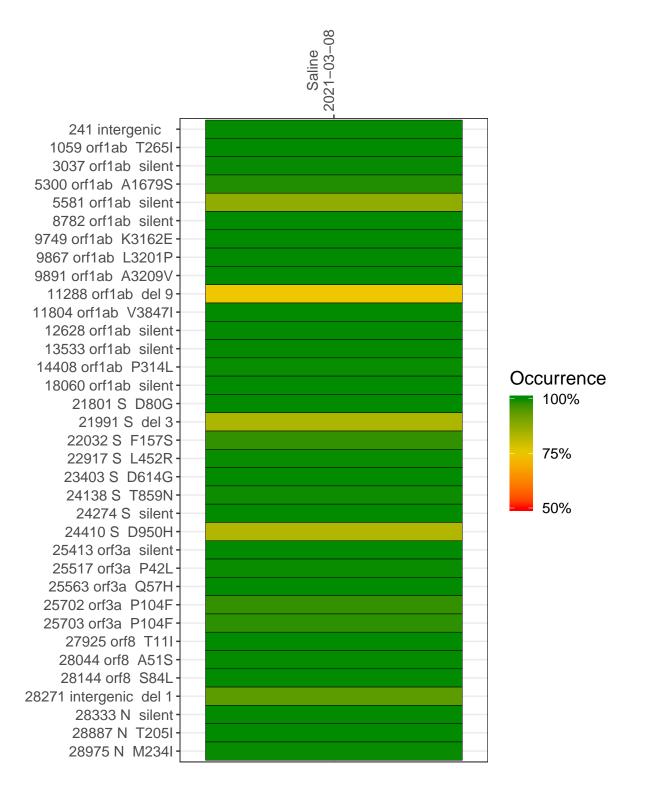
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP0997-1	single experiment	NA	Saline	2021-03-08	29.70	B.1	99.8%	99.8%

Variants shared across samples

The heat map below shows how variants (reference genome 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.



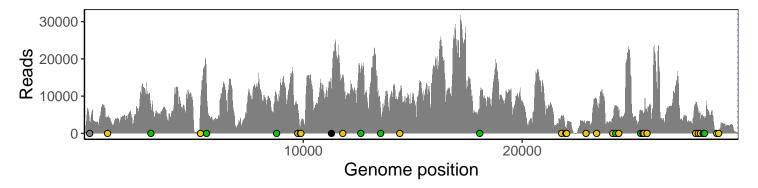
Saline 2021-03-08

	2021-03-08
241 intergenic	3083
1059 orf1ab T265I	4304
3037 orf1ab silent	6381
5300 orf1ab A1679S	6465
5581 orf1ab silent	12633
8782 orf1ab silent	9967
9749 orf1ab K3162E	7463
9867 orf1ab L3201P	1789
9891 orf1ab A3209V	2910
11288 orf1ab del 9	10494
11804 orf1ab V3847I	15711
12628 orf1ab silent	16723
13533 orf1ab silent	6354
14408 orf1ab P314L	11163
18060 orf1ab silent	9056
21801 S D80G	4497
21991 S del 3	1347
22032 S F157S	1266
22917 S L452R	2693
23403 S D614G	9419
24138 S T859N	4021
24274 S silent	7394
24410 S D950H	6144
25413 orf3a silent	6256
25517 orf3a P42L	5339
25563 orf3a Q57H	5629
25702 orf3a P104F	5026
25703 orf3a P104F	4932
27925 orf8 T11I	8274
28044 orf8 A51S	5747
28144 orf8 S84L	4053
28271 intergenic del 1	4371
28333 N silent	4042
28887 N T205I	781
28975 N M234I	627
	1-7

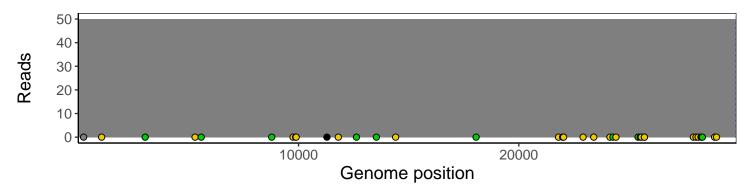
Analyses of individual experiments and composite results

VSP0997-1 | 2021-03-08 | Saline | UPHS-0065 | genomes | single experiment

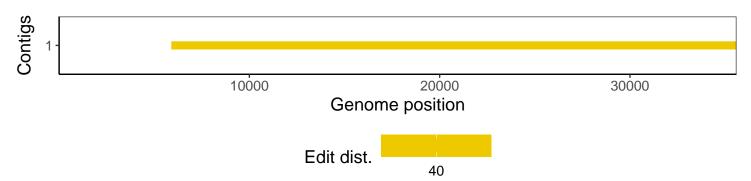
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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	2.3.3
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	3.0.0
tidyverse	1.2.1
ShortRead	1.34.2
$\operatorname{GenomicAlignments}$	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
$\operatorname{GenomeInfoDb}$	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