COVID-19 subject UPHS-1564

2021-06-23

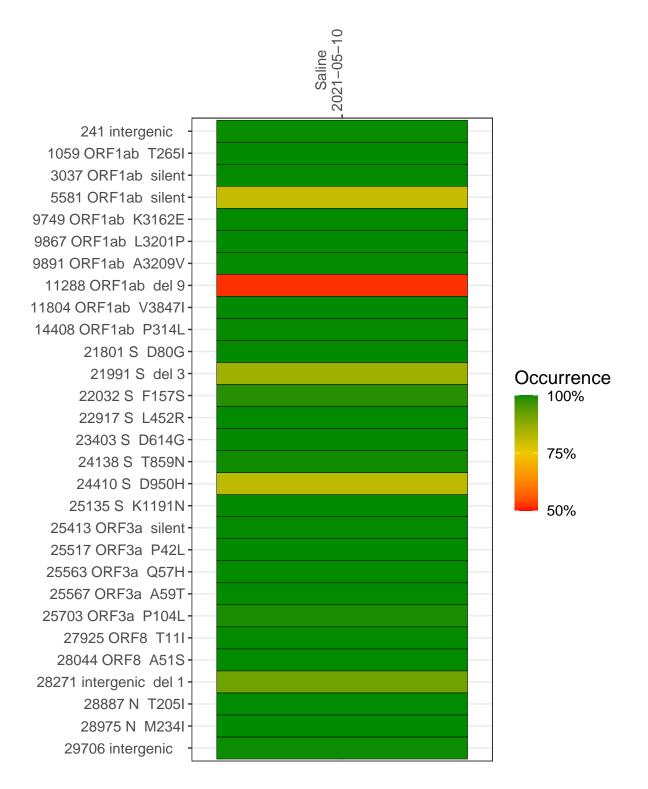
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP2861-1	single experiment	NA	Saline	2021-05-10	29.86	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.



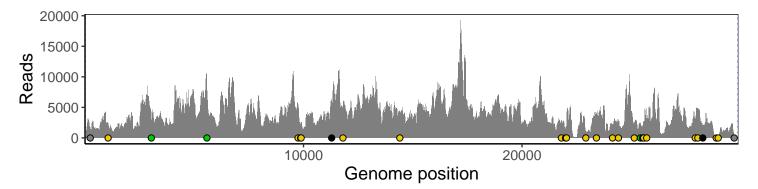
Saline 2021-05-10

	2021-03-10
241 intergenic	1495
1059 ORF1ab T265I	2218
3037 ORF1ab silent	3216
5581 ORF1ab silent	7662
9749 ORF1ab K3162E	5448
9867 ORF1ab L3201P	1774
9891 ORF1ab A3209V	2478
11288 ORF1ab del 9	2990
11804 ORF1ab V3847I	4881
14408 ORF1ab P314L	3838
21801 S D80G	2728
21991 S del 3	1386
22032 S F157S	1788
22917 S L452R	1140
23403 S D614G	3994
24138 S T859N	2166
24410 S D950H	2672
25135 S K1191N	2491
25413 ORF3a silent	2458
25517 ORF3a P42L	1651
25563 ORF3a Q57H	2571
25567 ORF3a A59T	2554
25703 ORF3a P104L	3017
27925 ORF8 T11I	3152
28044 ORF8 A51S	4262
28271 intergenic del 1	2067
28887 N T205I	339
28975 N M234I	418
29706 intergenic	348
	861–1
	88.

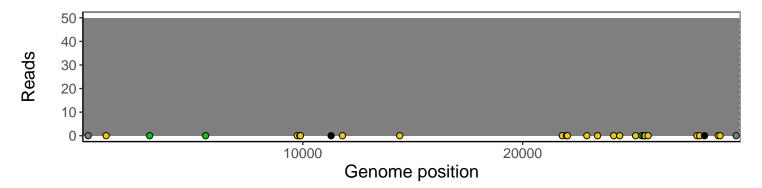
Analyses of individual experiments and composite results

VSP2861-1 | 2021-05-10 | Saline | UPHS-1564 | genomes | single experiment

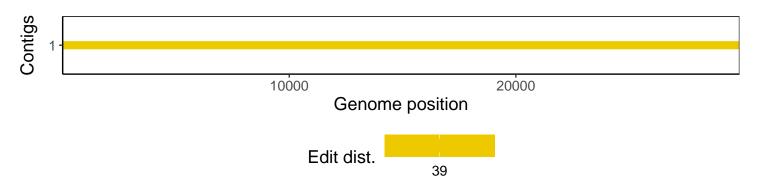
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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				