COVID-19 subject S-210203-01682

2021-06-23

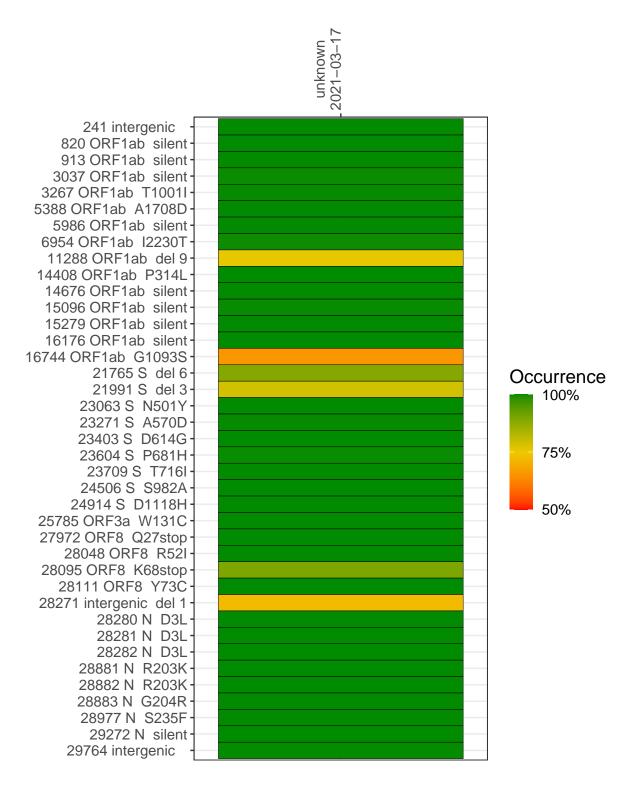
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP1058-1	single experiment	NA	unknown	2021-03-17	29.80	B.1.1.7	99.8%	99.8%

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.



unknown 2021-03-17

	2021-03-17
241 intergenic	2206
820 ORF1ab silent	7242
913 ORF1ab silent	6115
3037 ORF1ab silent	2659
3267 ORF1ab T1001I	6162
5388 ORF1ab A1708D	4992
5986 ORF1ab silent	2082
6954 ORF1ab I2230T	1742
11288 ORF1ab del 9	3359
14408 ORF1ab P314L	3377
14676 ORF1ab silent	4979
15096 ORF1ab silent	6238
15279 ORF1ab silent	8453
16176 ORF1ab silent	7928
16744 ORF1ab G1093S	8028
21765 S del 6	2216
21991 S del 3	1064
23063 S N501Y	197
23271 S A570D	8788
23403 S D614G	9645
23604 S P681H	6532
23709 S T716I	5629
24506 S S982A	3393
24914 S D1118H	4506
25785 ORF3a W131C	3438
27972 ORF8 Q27stop	13782
28048 ORF8 R52I	9677
28095 ORF8 K68stop	11203
28111 ORF8 Y73C	10565
28271 intergenic del 1	4616
28280 N D3L	3221
28281 N D3L	3221
28282 N D3L	3449
28881 N R203K	2222
28882 N R203K	2212
28883 N G204R	2225
28977 N S235F	4327
29272 N silent	12392
29764 intergenic	949
	\
	058-1

Base change

Expected

A

T

C

G

N

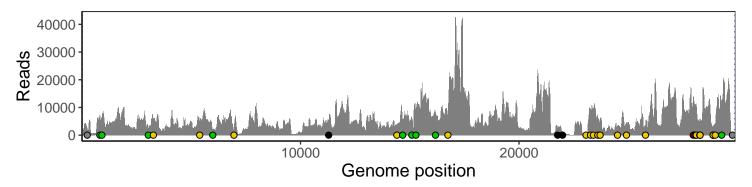
Ins/Del

No data

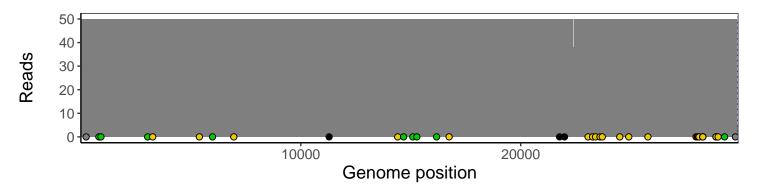
Analyses of individual experiments and composite results

$VSP1058-1 \ | \ 2021-03-17 \ | \ unknown \ | \ S-210203-01682 \ | \ genomes \ | \ single \ experiment$

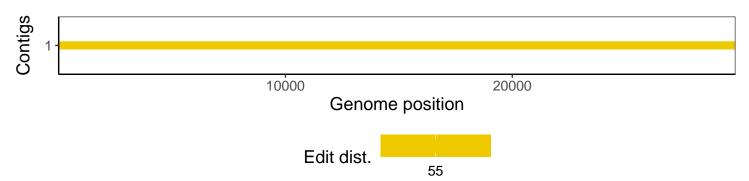
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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