

COVID-19 subject 3157

2021-05-05

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	Type	Genomes	Sample type	Sample date	Largest contig (KD)	Lineage	Reference read coverage	Reference read coverage (≥ 5 reads)
VSP0540-1	single experiment	NA	Saliva	2020-12-11	17.99	B.1.2	99.7%	99.4%

Variants shared across samples

The heat map below shows how variants (reference genome /home/everett/projects/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.



Saliva
2020-12-11

241 intergenic	927
1059 ORF1ab T265I	492
2698 ORF1ab silent	1860
3037 ORF1ab silent	557
3099 ORF1ab T945I	406
10319 ORF1ab L3352F	1231
11572 ORF1ab silent	1305
14408 ORF1ab P314L	1223
17802 ORF1ab silent	892
18424 ORF1ab N1653D	1434
20178 ORF1ab silent	357
21304 ORF1ab R2613C	245
21614 S L18F	111
21656 S F32L	78
23266 S silent	1404
23403 S D614G	1703
25369 S silent	522
25563 ORF3a Q57H	816
25907 ORF3a G172V	481
26472 E silent	620
27964 ORF8 S24L	1023
28316 N I15V	832
28472 N P67S	1173
28869 N P199L	46

Base change

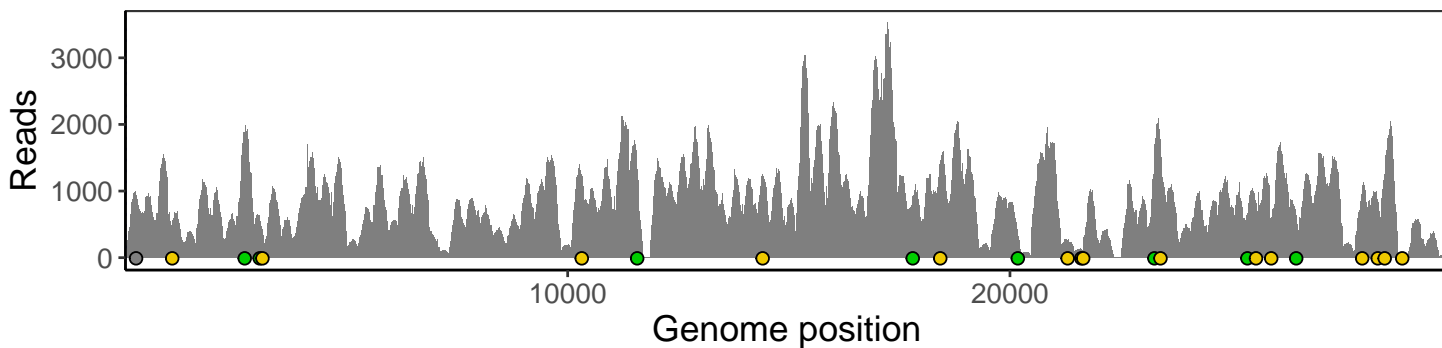
Expected	
A	
T	
C	
G	
N	
Ins/Del	
No data	

VSP0540-1

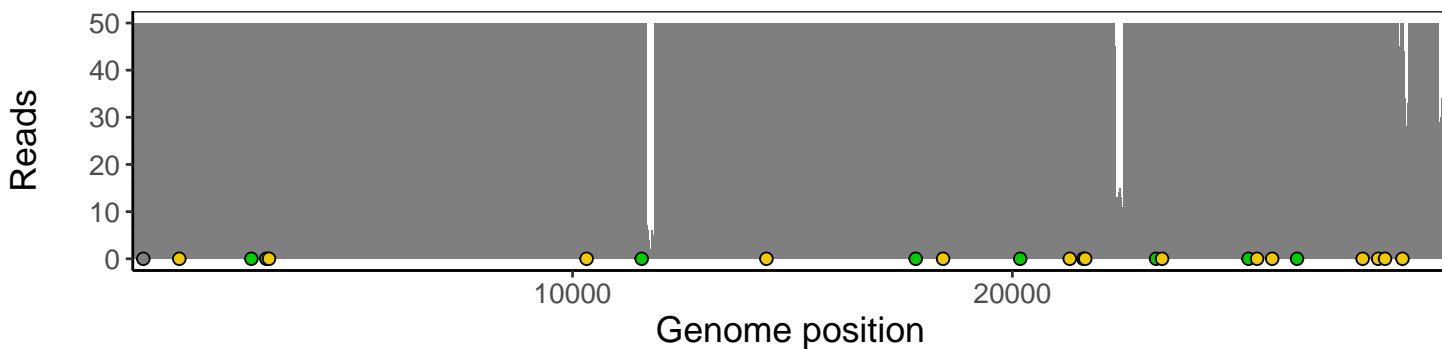
Analyses of individual experiments and composite results

VSP0540-1 | 2020-12-11 | Saliva | 3157 | genomes | single experiment

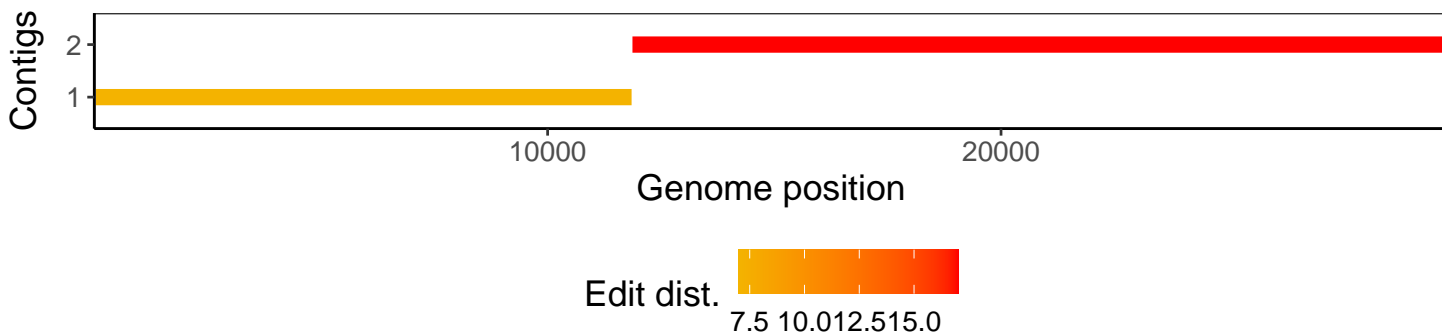
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according to variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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 htlib 1.10
bcftools	1.10.2-34-g1a12af0-dirty Using htlib 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	3.0.0
tidyverse	1.2.1
ShortRead	1.34.2
GenomicAlignments	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
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