

COVID-19 subject 2757

2021-01-31

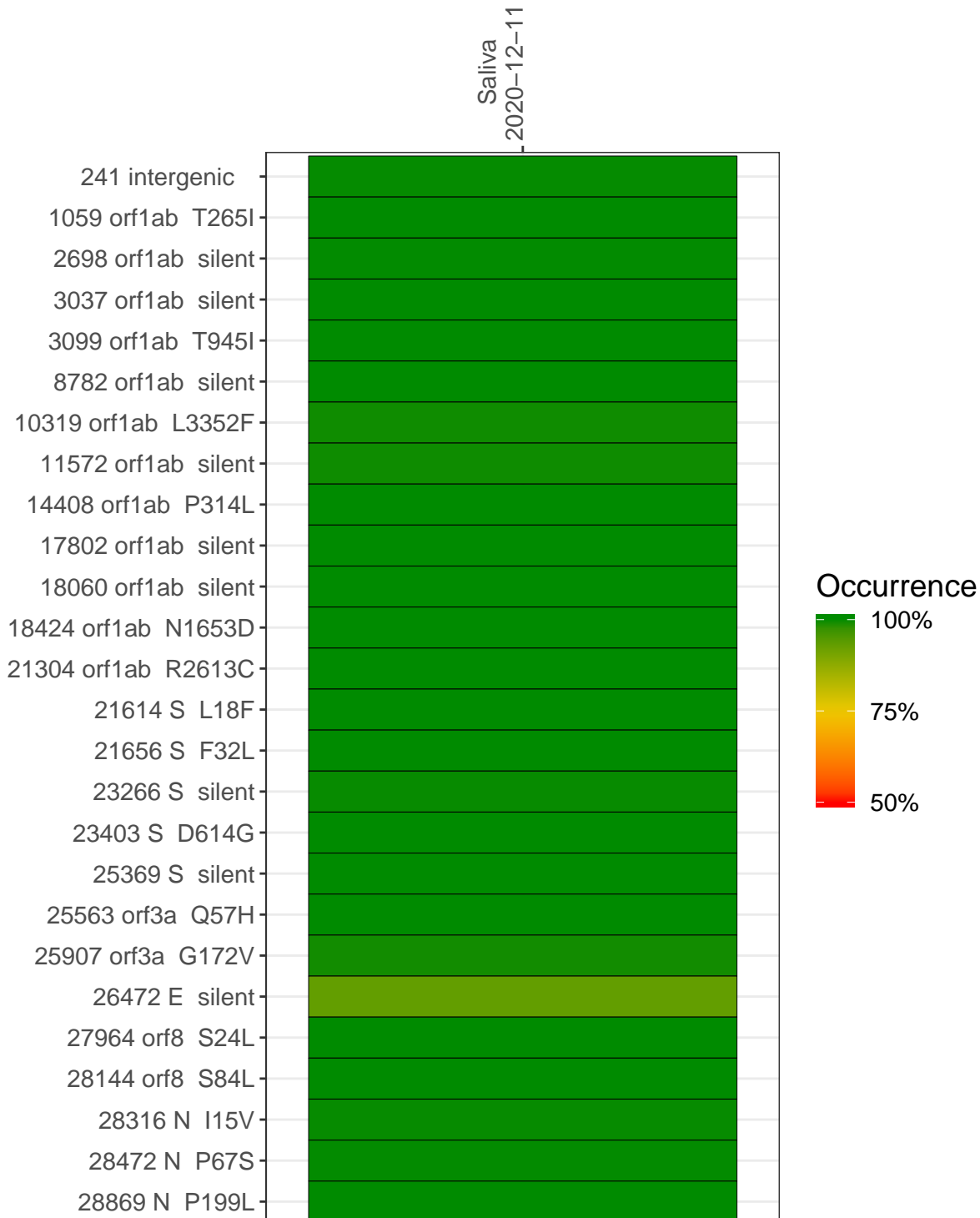
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP0538-1	single experiment	NA	Saliva	2020-12-11	22.40	B.1.2	99.7%	98.8%

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.



Saliva
2020-12-11

241 intergenic	1684
1059 orf1ab T265I	994
2698 orf1ab silent	3571
3037 orf1ab silent	530
3099 orf1ab T945I	419
8782 orf1ab silent	526
10319 orf1ab L3352F	2707
11572 orf1ab silent	576
14408 orf1ab P314L	1397
17802 orf1ab silent	1615
18060 orf1ab silent	418
18424 orf1ab N1653D	2900
21304 orf1ab R2613C	50
21614 S L18F	86
21656 S F32L	74
23266 S silent	3355
23403 S D614G	4035
25369 S silent	1545
25563 orf3a Q57H	2028
25907 orf3a G172V	1055
26472 E silent	1200
27964 orf8 S24L	1177
28144 orf8 S84L	1651
28316 N I15V	2714
28472 N P67S	2560
28869 N P199L	461

Base change

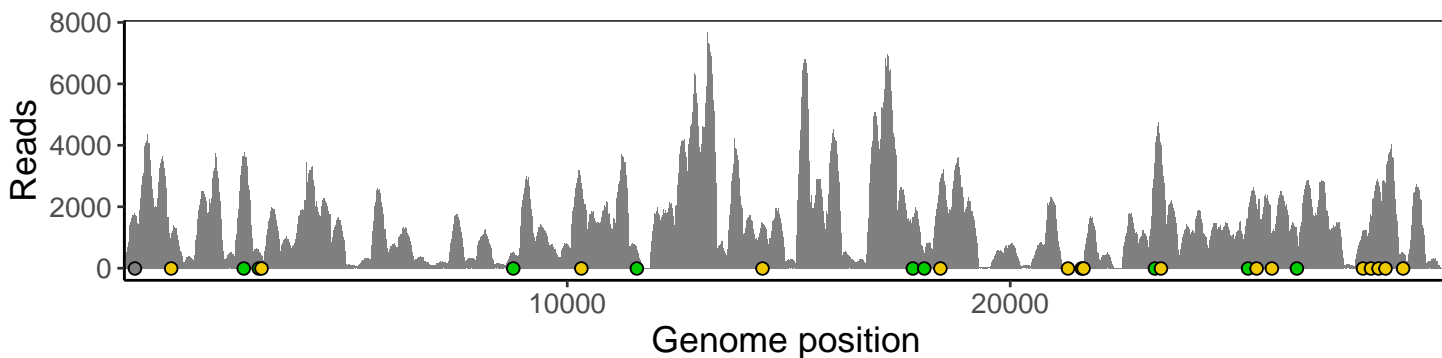


VSP0538-1

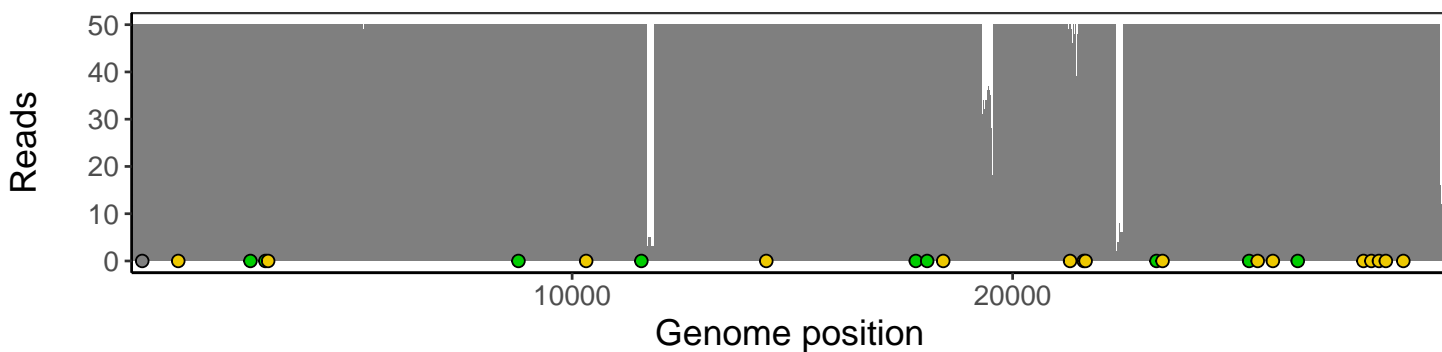
Analyses of individual experiments and composite results

VSP0538-1 | 2020-12-11 | Saliva | 2757 | genomes | single experiment

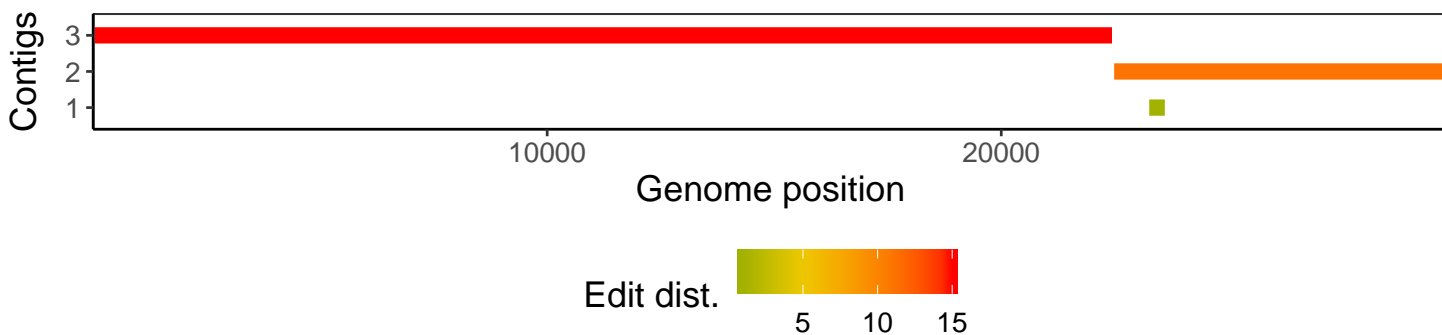
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according to variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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	2.1.7
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