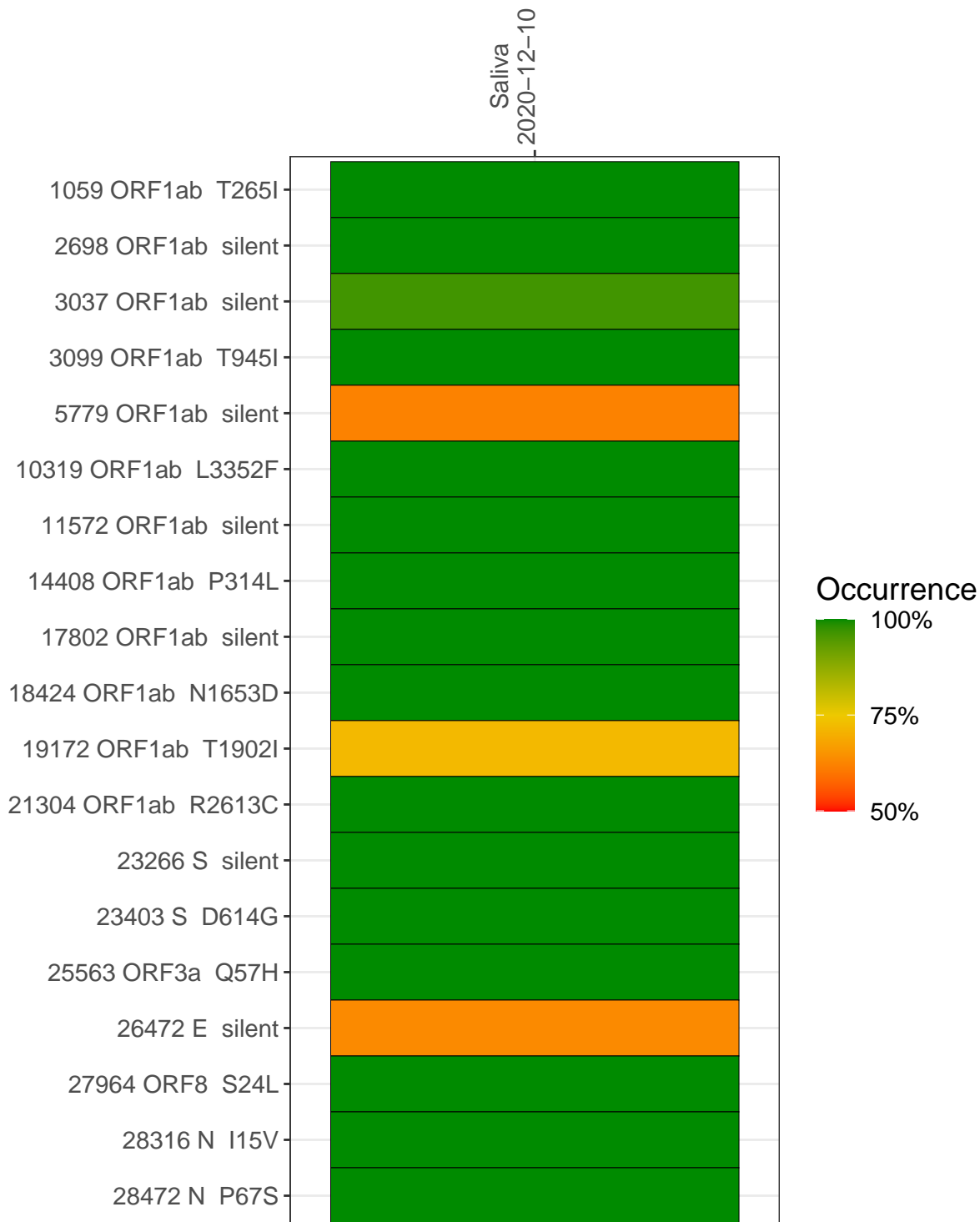# COVID-19 subject 2745

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.
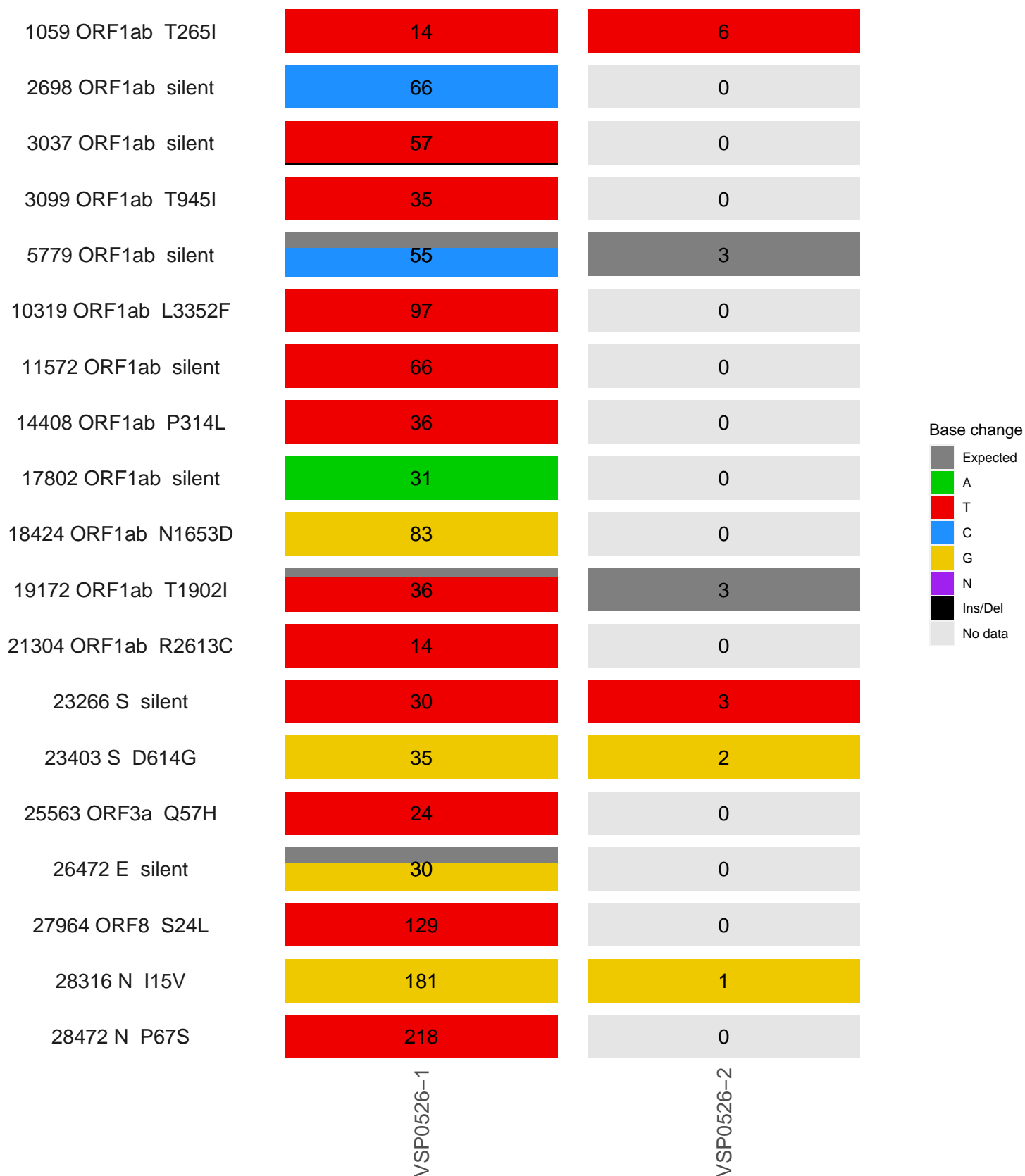
Table 1. Sample summary.

Experiment	Type	Genomes	Sample type	Sample date	Largest contig (KD)	Lineage	Reference read coverage	Reference read coverage (>= 5 reads)
VSP0526	composite	NA	Saliva	2020-12-10	5.18	NA	91.1%	82.0%
VSP0526-1	single experiment	NA	Saliva	2020-12-10	4.98	NA	86.5%	79.8%
VSP0526-2	single experiment	NA	Saliva	2020-12-10	0.39	NA	34.1%	4.8%

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.
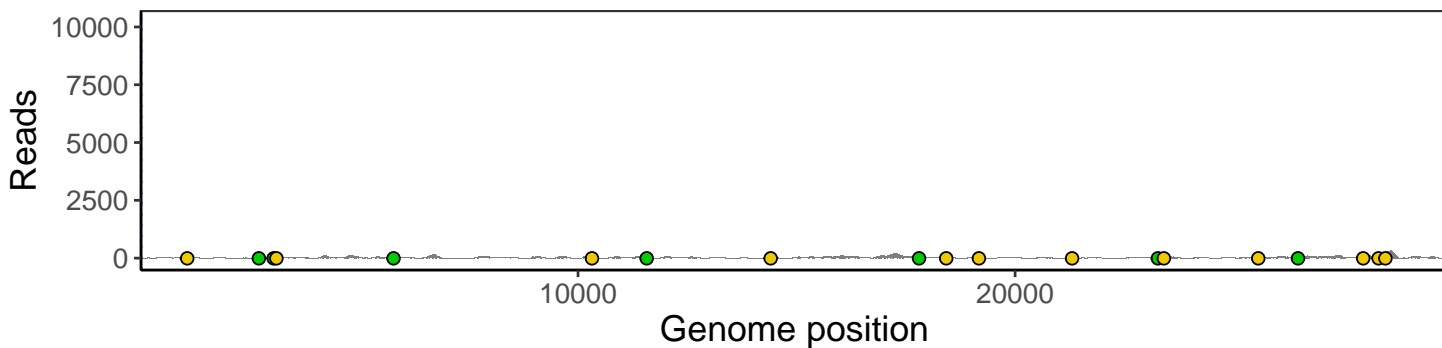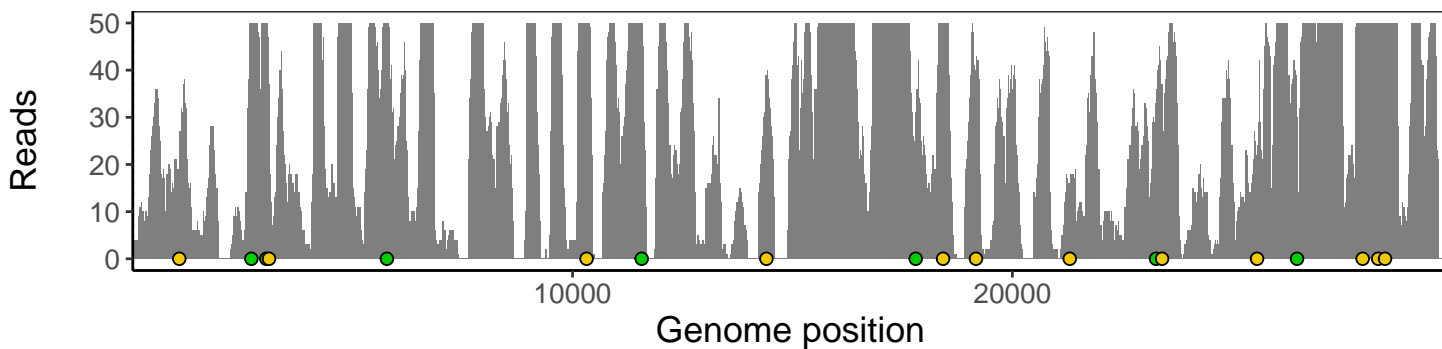
Saliva
2020−12−10

	VSP0526−1	VSP0526−2
1059 ORF1ab T265I	14	6
2698 ORF1ab silent	66	0
3037 ORF1ab silent	57	0
3099 ORF1ab T945I	35	0
5779 ORF1ab silent	55	3
10319 ORF1ab L3352F	97	0
11572 ORF1ab silent	66	0
14408 ORF1ab P314L	36	0
17802 ORF1ab silent	31	0
18424 ORF1ab N1653D	83	0
19172 ORF1ab T1902I	36	3
21304 ORF1ab R2613C	14	0
23266 S silent	30	3
23403 S D614G	35	2
25563 ORF3a Q57H	24	0
26472 E silent	30	0
27964 ORF8 S24L	129	0
28316 N I15V	181	1
28472 N P67S	218	0

Base change
- Expected
- A
- T
- C
- G
- N
- Ins/Del
- No data

Analyses of individual experiments and composite results

VSP0526 | 2020-12-10 | Saliva | 2745 | composite result
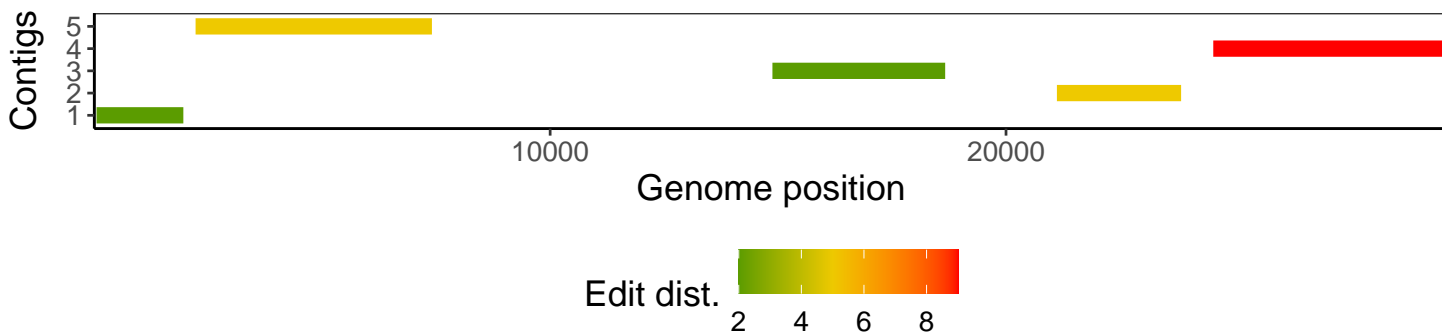
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.
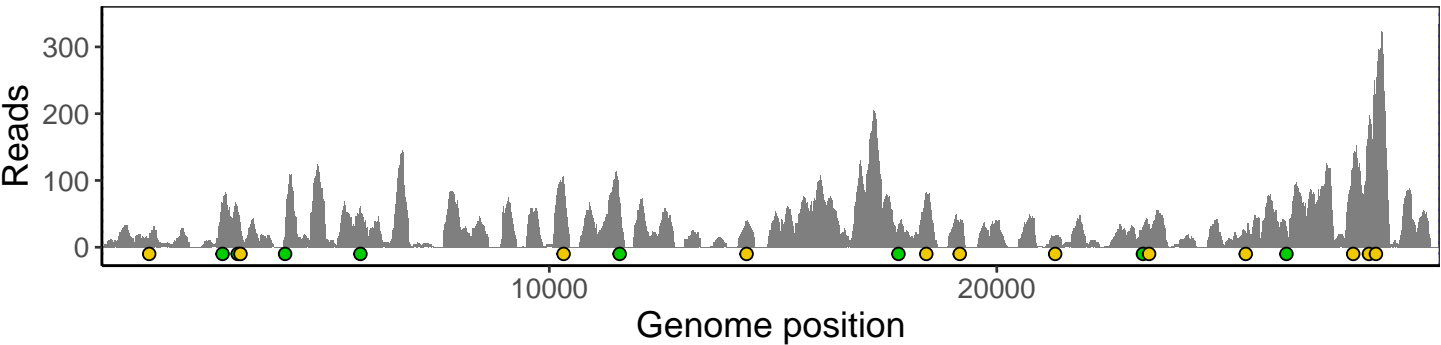

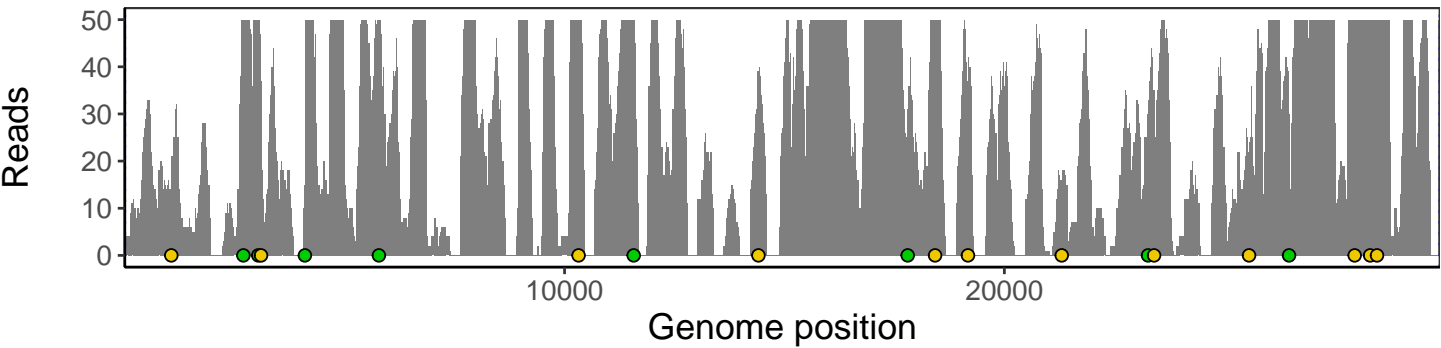Excerpt from plot above focusing on reads coverage from 0 to 50 NT.

The longest five assembled contigs are shown below colored by their edit distance to the reference genome.

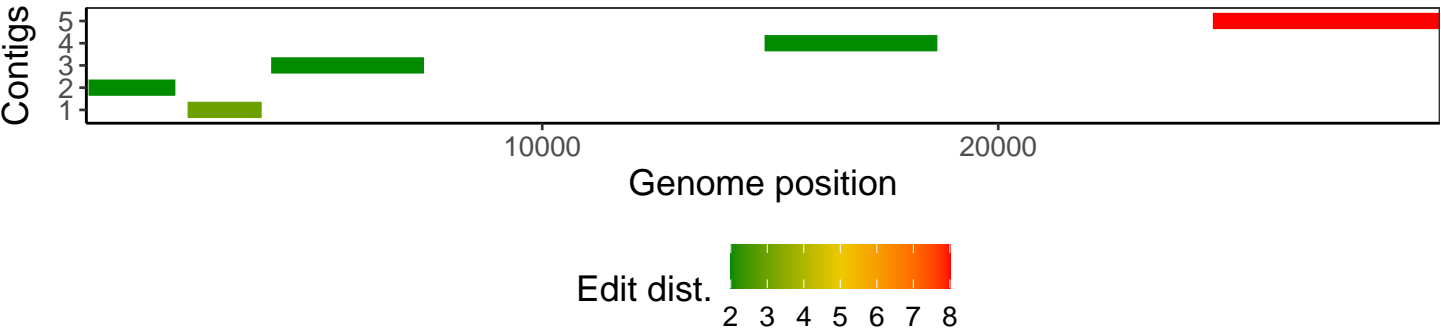**VSP0526-1 | 2020-12-10 | Saliva | 2745 | genomes | single experiment**

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.
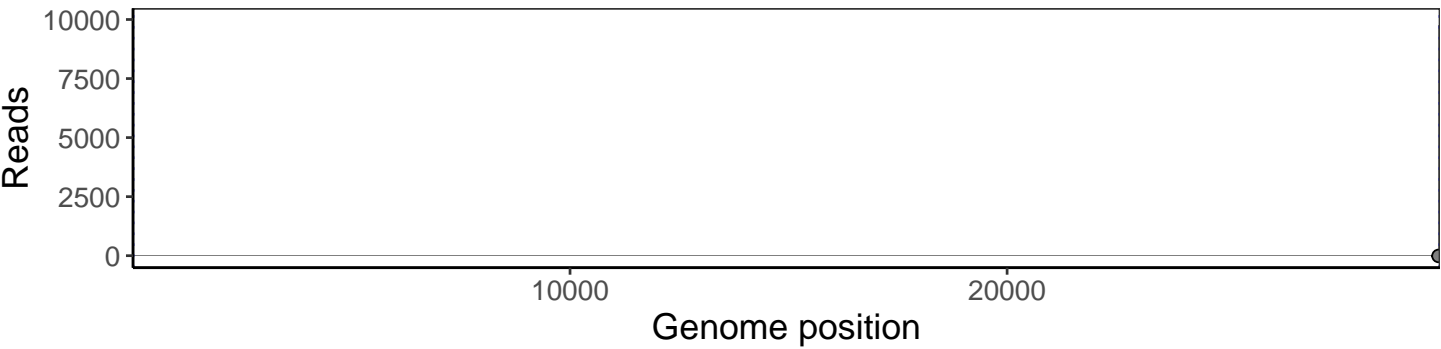

Excerpt from plot above focusing on reads coverage from 0 to 50 NT.

The longest five assembled contigs are shown below colored by their edit distance to the reference genome.

VSP0526-2 | 2020-12-10 | Saliva | 2745 | 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.

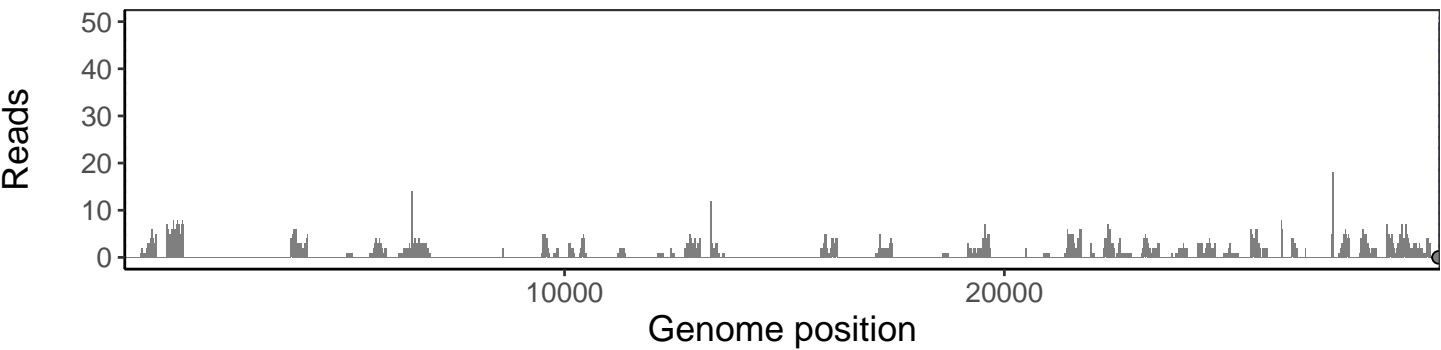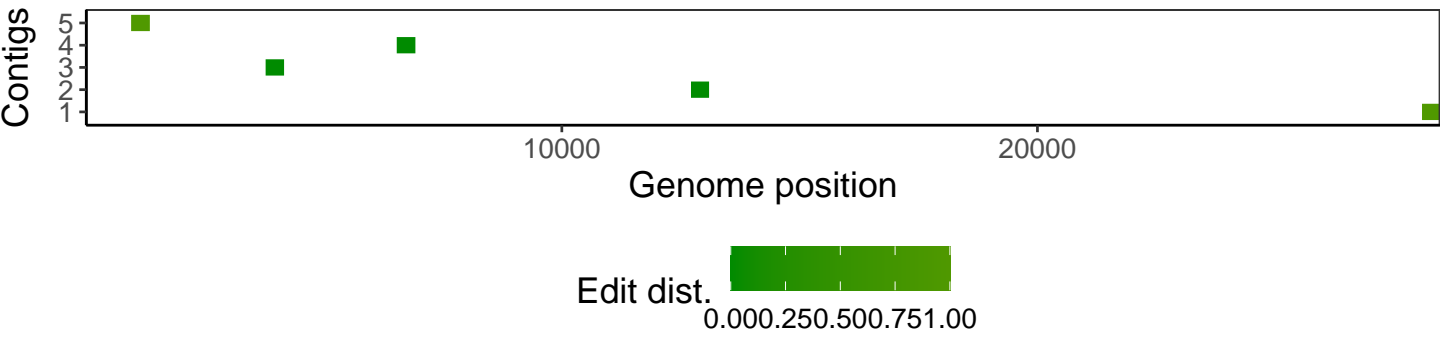Excerpt from plot above focusing on reads coverage from 0 to 50 NT.

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	2.3.8
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