COVID-19 subject UPHS-0078

2021-05-05

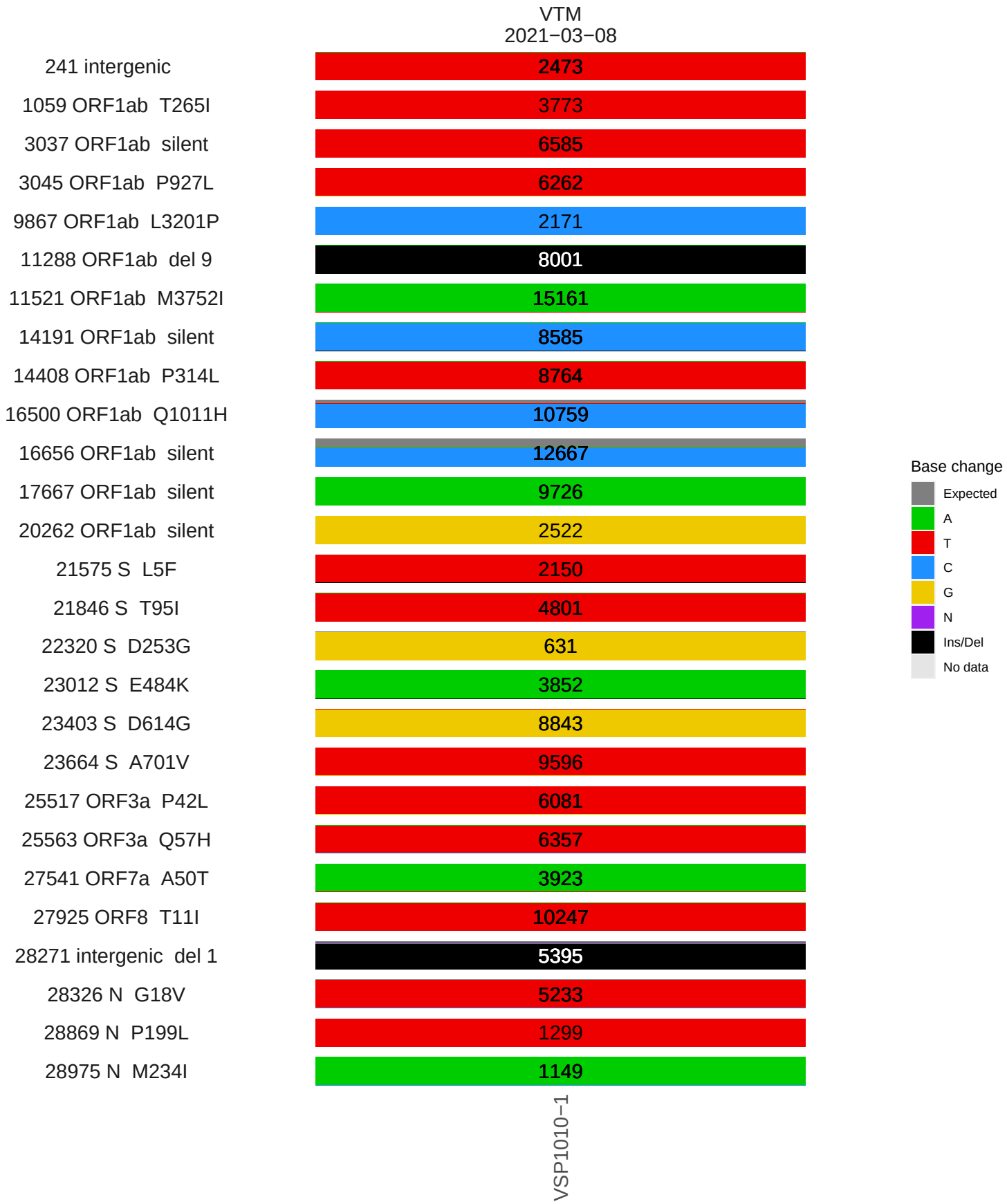
The table below provides a summary of subject samples for which sequencing data is available.
The experiments column shows the number of sequencing experiments performed for each specimen.
Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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)
VSP1010-1	single experiment	NA	VTM	2021-03-08	29.85	B.1.526	99.8%	99.8%

Variants shared across samples

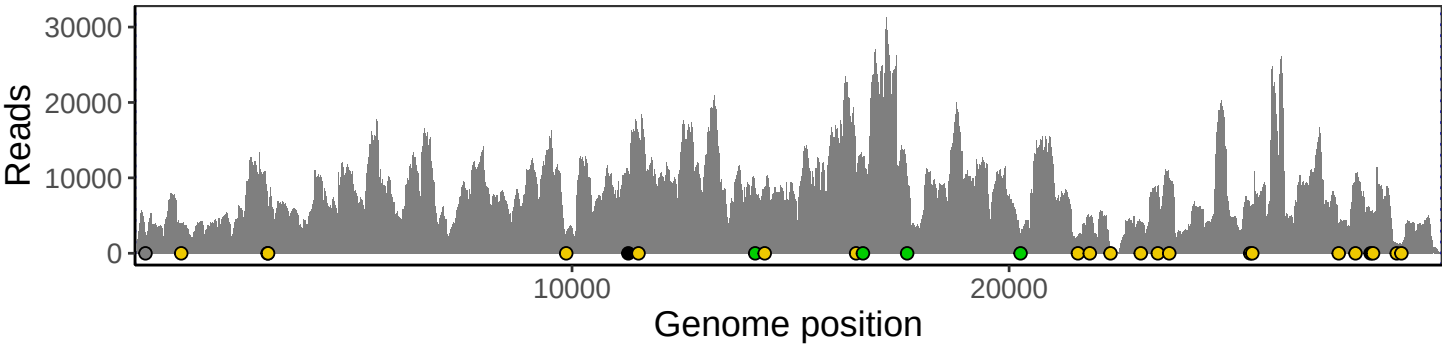
The heat map below shows how variants (reference genome /home/everett/projects/SARS-CoV-2-Philadelphia/Wuhan-Hu-1) are shared across subject samples where the percent variance is colored. Variants are called if a variant position is covered by 5 or more reads, the alternative base is found in > 50% of 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.


VTM
2021−03−08
241 intergenic
2473
1059 ORF1ab T265I
3773
3037 ORF1ab silent
6585
3045 ORF1ab P927L
6262
9867 ORF1ab L3201P
2171
11288 ORF1ab del 9
8001
11521 ORF1ab M3752I
15161
14191 ORF1ab silent
8585
14408 ORF1ab P314L
8764
16500 ORF1ab Q1011H
10759
16656 ORF1ab silent
12667
17667 ORF1ab silent
9726
20262 ORF1ab silent
2522
21575 S L5F
2150
21846 S T95I
4801
22320 S D253G
631
23012 S E484K
3852
23403 S D614G
8843
23664 S A701V
9596
25517 ORF3a P42L
6081
25563 ORF3a Q57H
6357
27541 ORF7a A50T
3923
27925 ORF8 T11I
10247
28271 intergenic del 1
5395
28326 N G18V
5233
28869 N P199L
1299
28975 N M234I
1149
VSP1010−1
Base change
Expected
A
T
C
G
N
Ins/Del
No data

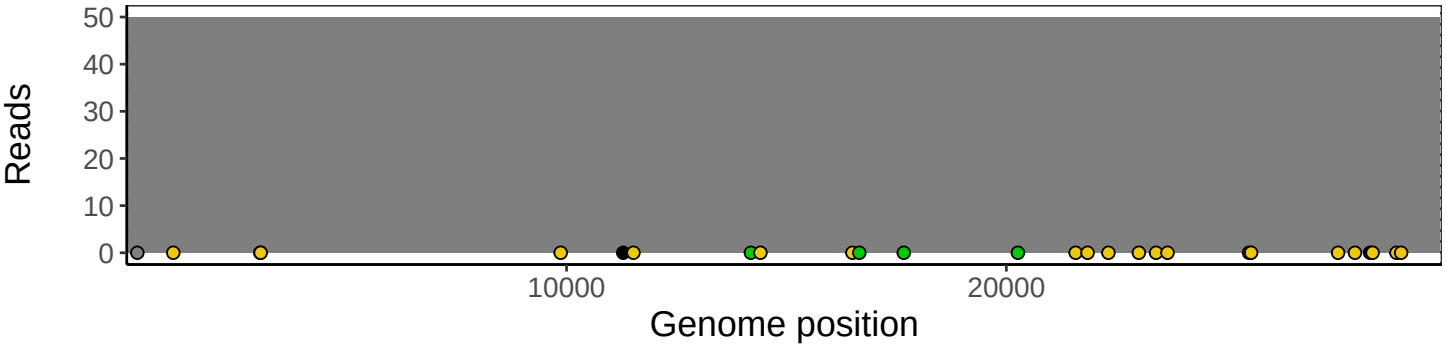
Analyses of individual experiments and composite results

VSP1010-1 | 2021-03-08 | VTM | UPHS-0078 | genomes | single experiment

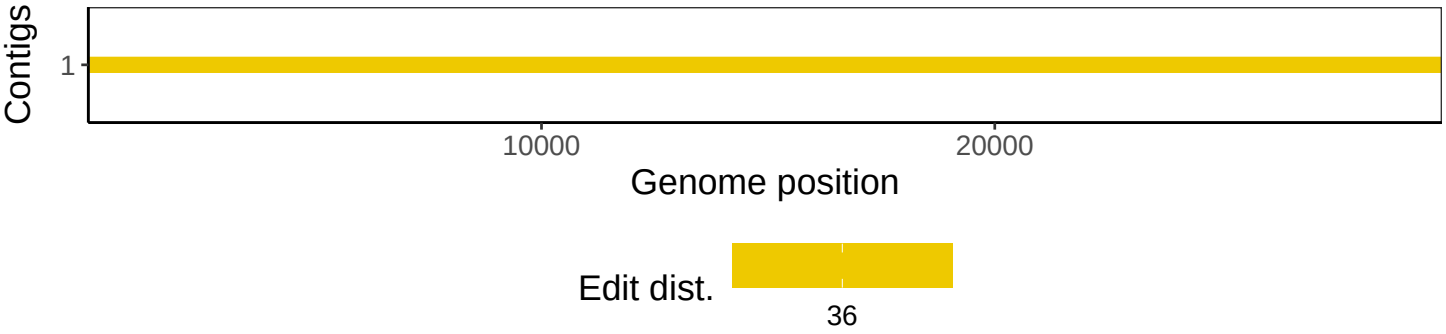
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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