COVID-19 subject 484

2021-05-21

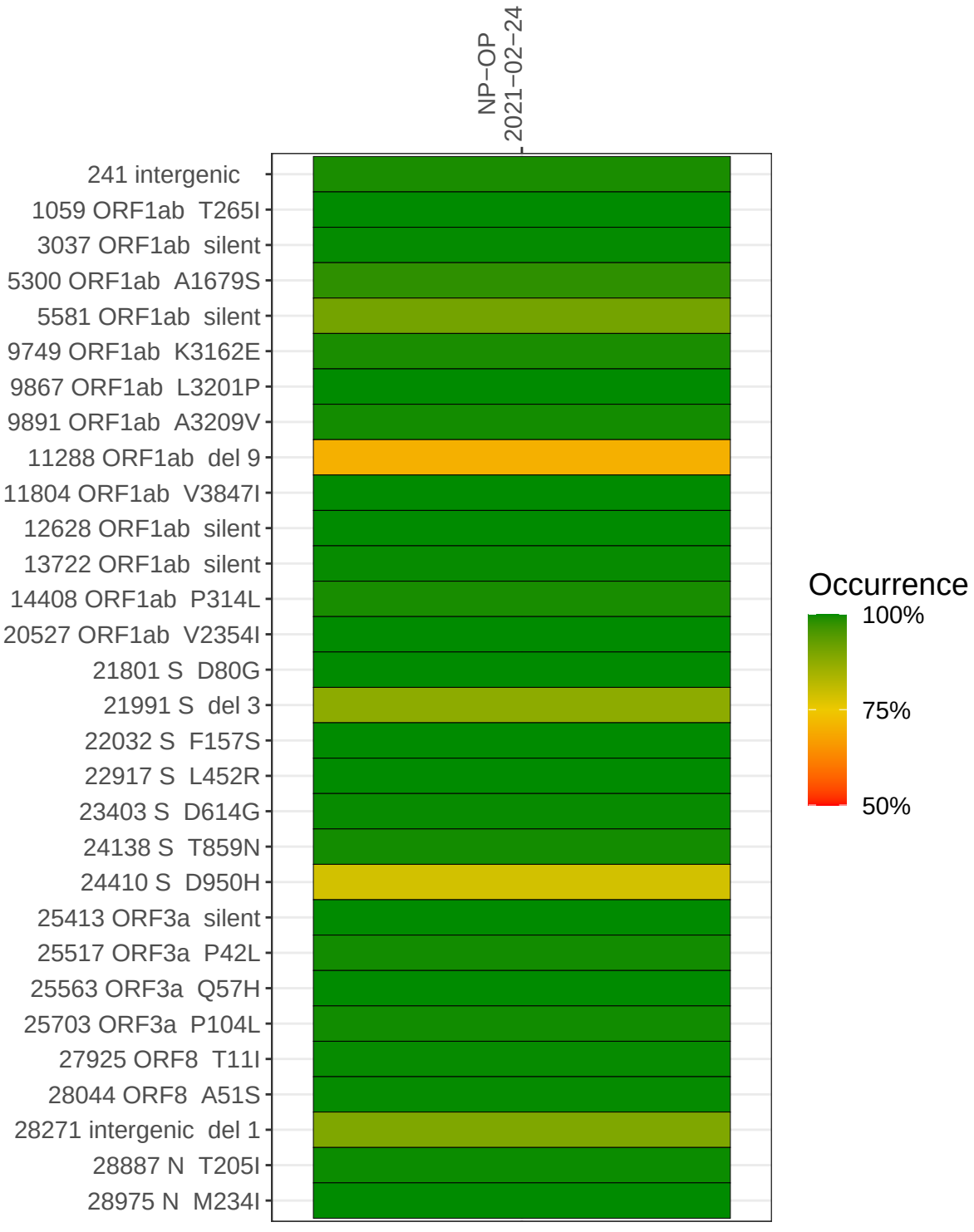
The table below provides a summary of subject samples for which sequencing data is available.
The experiments column shows the number of sequencing experiments performed for each specimen.
Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software tool (Rambaut et al 2020) for genomes with > 90% sequence coverage.

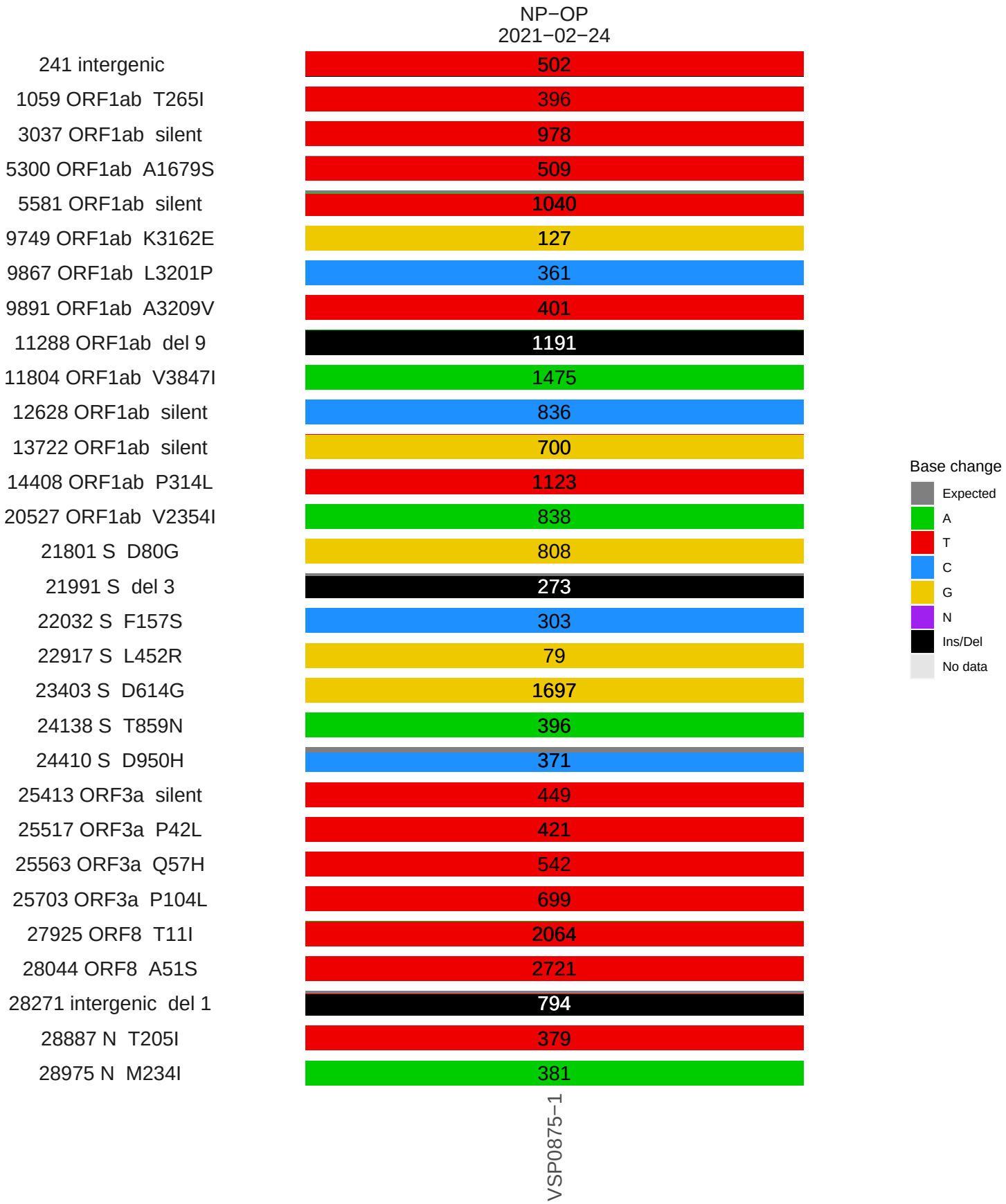
Table 1. Sample summary.

Experiment	Type	Genomes	Sample type	Sample date	Largest contig (KD)	Lineage	Reference read coverage	Reference read coverage (>= 5 reads)
VSP0875-1	single experiment	NA	NP-OP	2021-02-24	29.83	B.1.526.1	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.

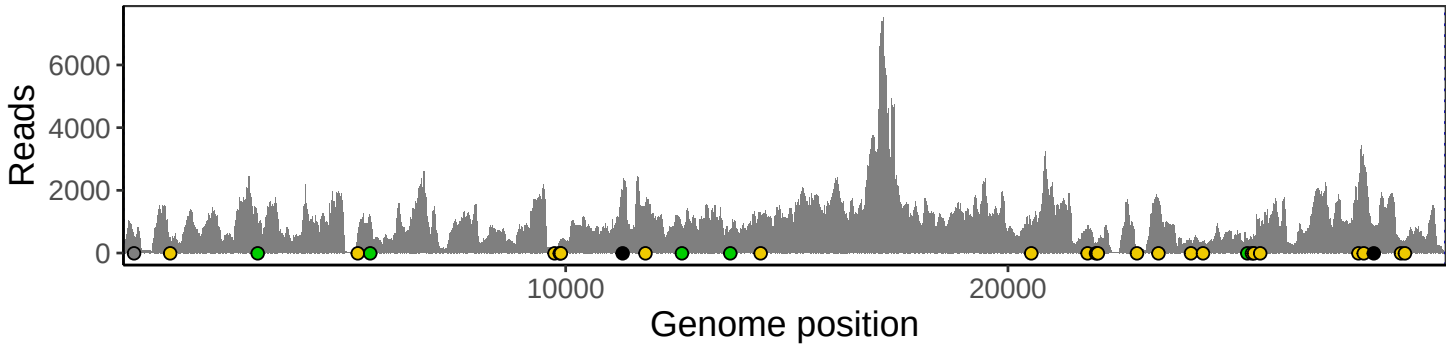



NP−OP
2021−02−24
241 intergenic
502
1059 ORF1ab T265I
396
3037 ORF1ab silent
978
5300 ORF1ab A1679S
509
5581 ORF1ab silent
1040
9749 ORF1ab K3162E
127
9867 ORF1ab L3201P
361
9891 ORF1ab A3209V
401
11288 ORF1ab del 9
1191
11804 ORF1ab V3847I
1475
12628 ORF1ab silent
836
13722 ORF1ab silent
700
14408 ORF1ab P314L
1123
20527 ORF1ab V2354I
838
21801 S D80G
808
21991 S del 3
273
22032 S F157S
303
22917 S L452R
79
23403 S D614G
1697
24138 S T859N
396
24410 S D950H
371
25413 ORF3a silent
449
25517 ORF3a P42L
421
25563 ORF3a Q57H
542
25703 ORF3a P104L
699
27925 ORF8 T11I
2064
28044 ORF8 A51S
2721
28271 intergenic del 1
794
28887 N T205I
379
28975 N M234I
381
VSP0875−1
Base change
Expected
A
T
C
G
N
Ins/Del
No data

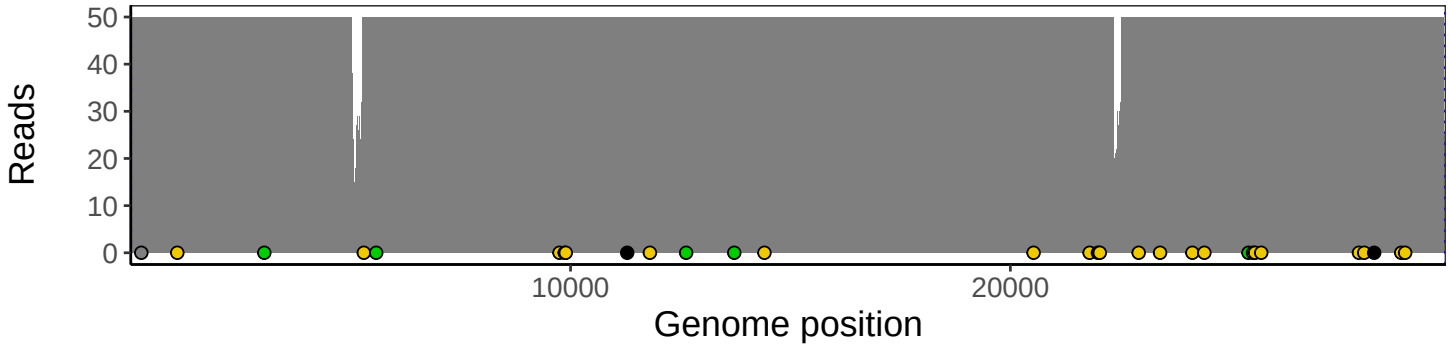
Analyses of individual experiments and composite results

VSP0875-1 | 2021-02-24 | NP-OP | 484no | genomes | single experiment

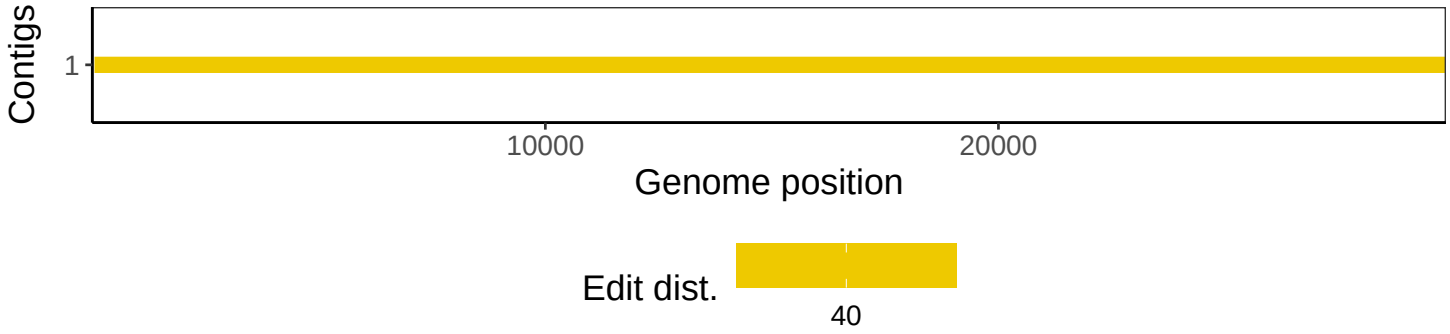
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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	3.3.3
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