

# COVID-19 subject UPHS-0300

*2021-04-17*

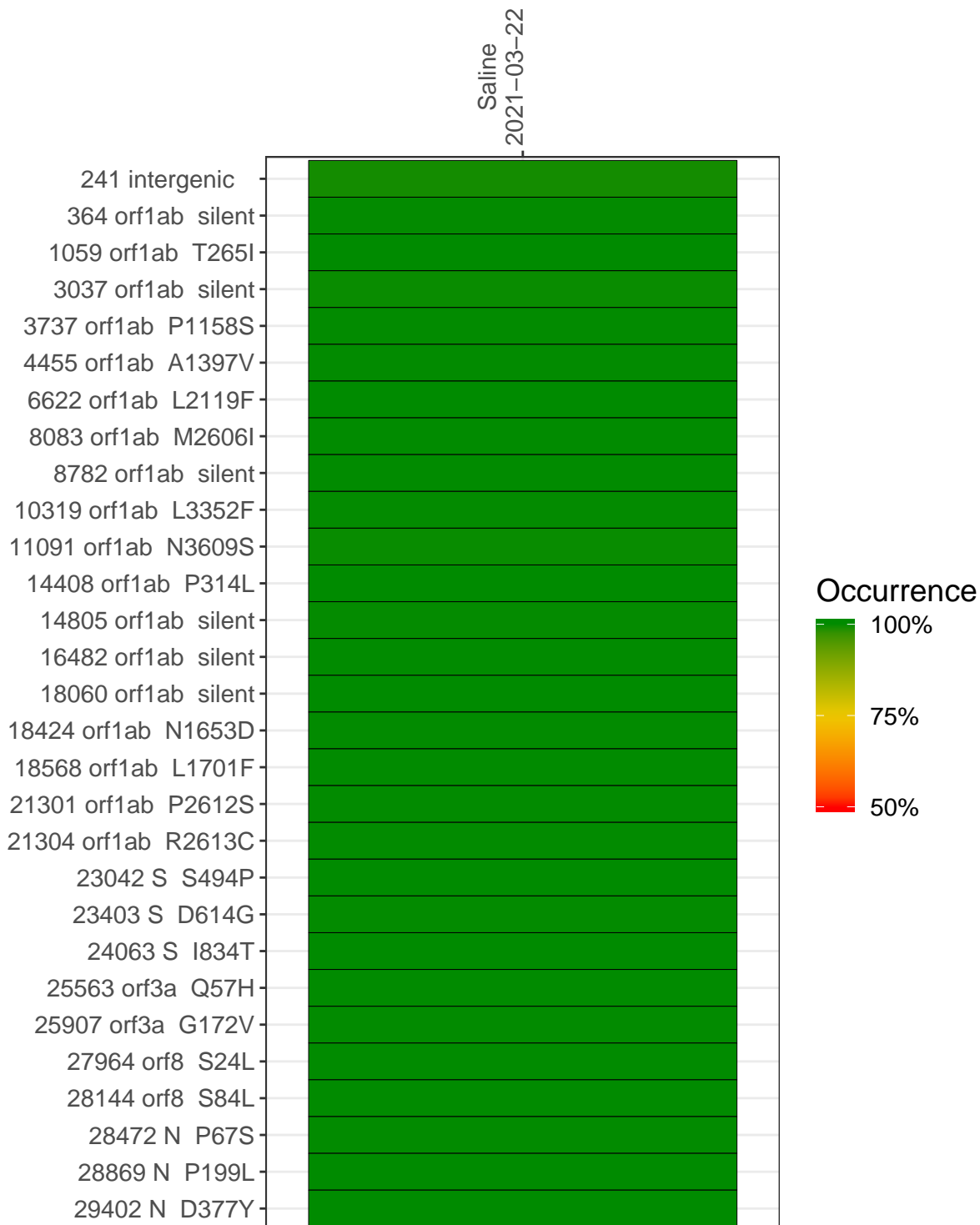
The table below provides a summary of subject samples for which sequencing data is available. The experiments column shows the number of sequencing experiments performed for each specimen. Experiment specific analyses are shown at the end of this report. Lineages are called with the Pangolin software 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 ( $\geq 5$ reads)
VSP1345-1	single experiment	NA	Saline	2021-03-22	29.93	B.1.2	99.8%	99.8%

## Variants shared across samples

The heat map below shows how variants (reference genome /home/everett/projects/SARS-CoV-2-Philadelphia/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.



Saline  
2021-03-22

241 intergenic	2463
364 orf1ab silent	2996
1059 orf1ab T265I	1171
3037 orf1ab silent	1929
3737 orf1ab P1158S	3846
4455 orf1ab A1397V	3387
6622 orf1ab L2119F	2596
8083 orf1ab M2606I	3664
8782 orf1ab silent	3554
10319 orf1ab L3352F	2998
11091 orf1ab N3609S	3928
14408 orf1ab P314L	4023
14805 orf1ab silent	6370
16482 orf1ab silent	10044
18060 orf1ab silent	2875
18424 orf1ab N1653D	8245
18568 orf1ab L1701F	5725
21301 orf1ab P2612S	5385
21304 orf1ab R2613C	5424
23042 S S494P	127
23403 S D614G	8056
24063 S I834T	1947
25563 orf3a Q57H	6023
25907 orf3a G172V	2100
27964 orf8 S24L	3568
28144 orf8 S84L	4695
28472 N P67S	9060
28869 N P199L	777
29402 N D377Y	325

Base change

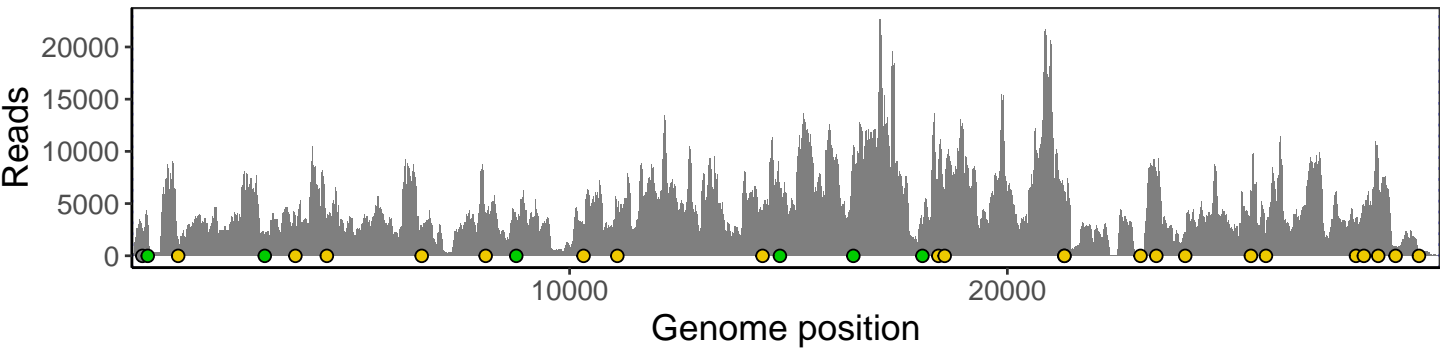


VSP1345-1

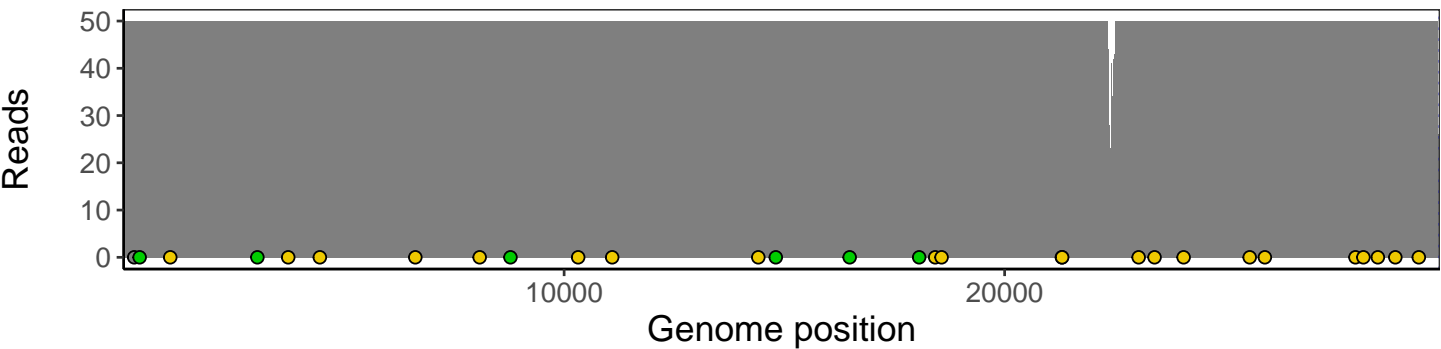
# Analyses of individual experiments and composite results

VSP1345-1 | 2021-03-22 | Saline | UPHS-0300 | genomes | single experiment

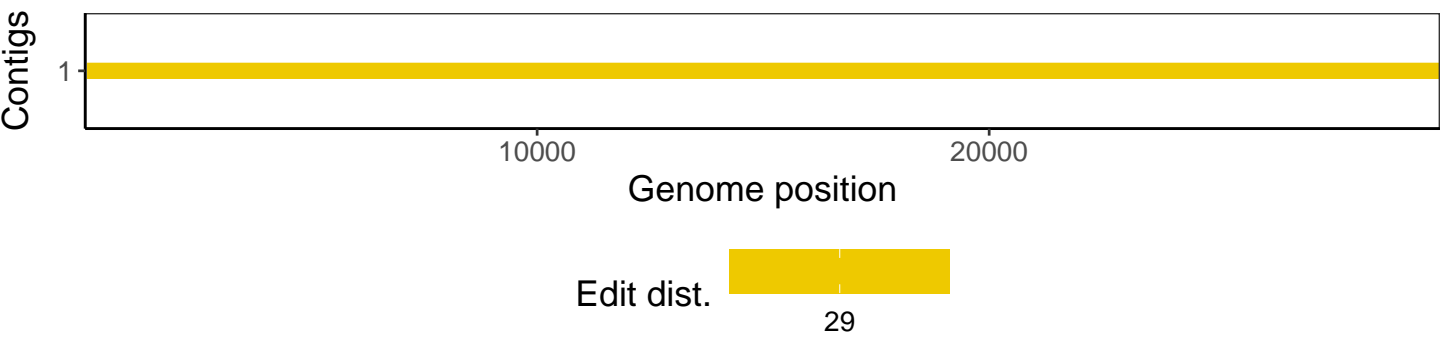
The plot below shows the number of reads covering each nucleotide position in the reference genome. Variants are shown as colored dots along the bottom of the plot and are color coded according by variant types: gray - transgenic, green - silent, gold - missense, red - nonsense, black - indel.



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 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