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Supplemental information

Relative infectivity of the SARS-CoV-2 Omicron variant in human alveolar cells

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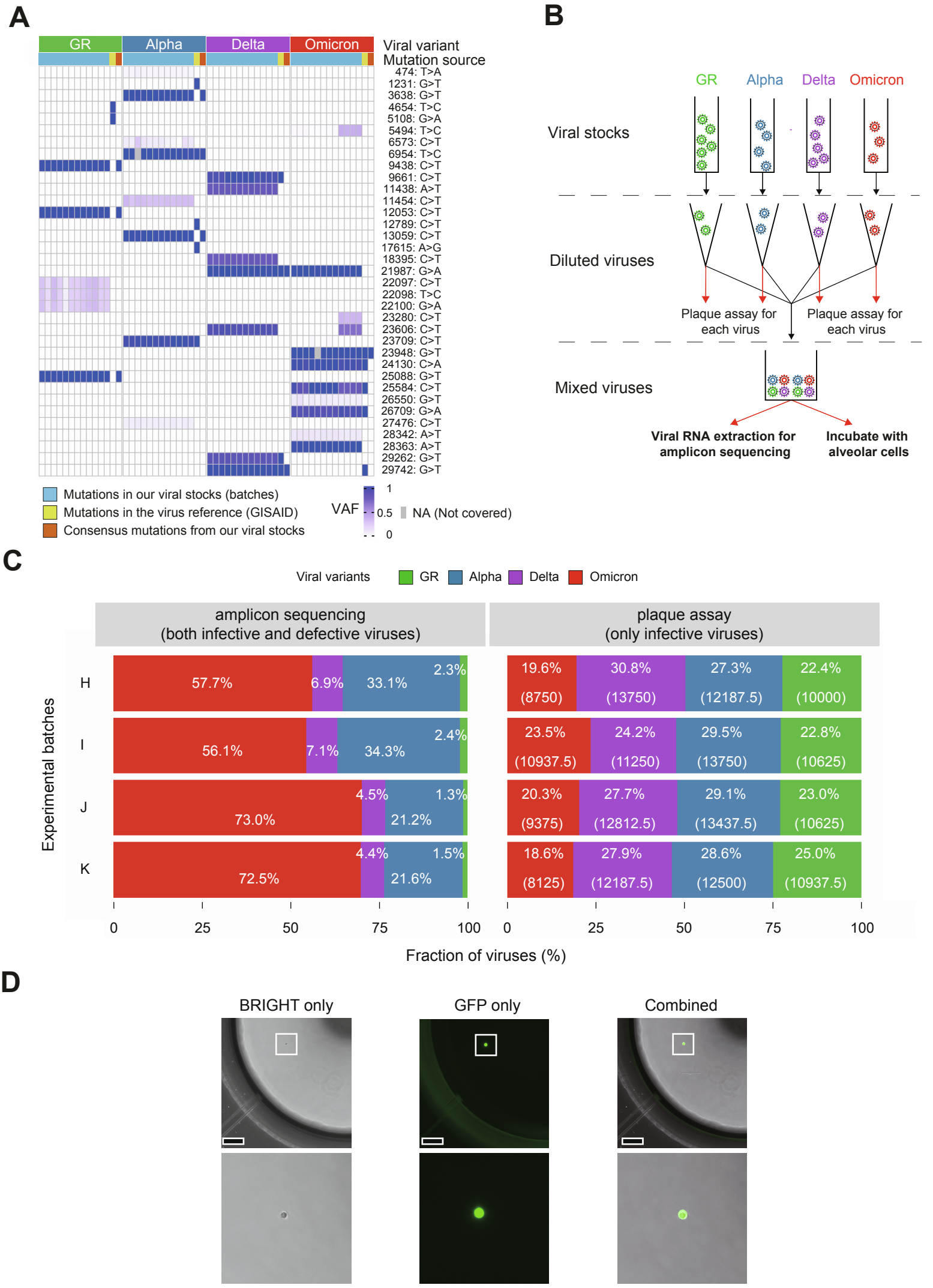
A
GR
Alpha
Delta
Omicron
Viral variant
Mutation source
474: T>A
1231: G>T
3638: G>T
4654: T>C
5108: G>A
5494: T>C
6573: C>T
6954: T>C
9438: C>T
9661: C>T
11438: A>T
11454: C>T
12053: C>T
12789: C>T
13059: C>T
17615: A>G
18395: C>T
21987: G>A
22097: C>T
22098: T>C
22100: G>A
23280: C>T
23606: C>T
23709: C>T
23948: G>T
24130: C>A
25088: G>T
25584: C>T
26550: G>T
26709: G>A
27476: C>T
28342: A>T
28363: A>T
29262: G>T
29742: G>T
Mutations in our viral stocks (batches)
Mutations in the virus reference (GISAID)
Consensus mutations from our viral stocks
VAF
1
0.5
0
NA (Not covered)
B
GR
Alpha
Delta
Omicron
Viral stocks
Diluted viruses
Plaque assay for each virus
Plaque assay for each virus
Mixed viruses
Viral RNA extraction for amplicon sequencing
Incubate with alveolar cells
C
Viral variants
GR
Alpha
Delta
Omicron
amplicon sequencing (both infective and defective viruses)
plaque assay (only infective viruses)
Experimental batches
H
I
J
K
57.7%
6.9%
33.1%
2.3%
56.1%
7.1%
34.3%
2.4%
73.0%
4.5%
21.2%
1.3%
72.5%
4.4%
21.6%
1.5%
19.6% (8750)
30.8% (13750)
27.3% (12187.5)
22.4% (10000)
23.5% (10937.5)
24.2% (11250)
29.5% (13750)
22.8% (10625)
20.3% (9375)
27.7% (12812.5)
29.1% (13437.5)
23.0% (10625)
18.6% (8125)
27.9% (12187.5)
28.6% (12500)
25.0% (10937.5)
0
25
50
75
100
Fraction of viruses (%)
D
BRIGHT only
GFP only
Combined

Figure S1. Detailed information of competition assay. Related to Figure 1.
(A) Mutations of each viral variant from different sources. Variant allele fraction (VAF) is filled in each block and the mutation position of the SARS-CoV-2 genome is written in a row. The order of viral stocks is the same as in Figure 2B.
(B) Schematic diagram of calculating the fraction of viral variants in the competition assay. Infective (viable) viruses were counted by plaque assay of each viral variant and both infectious and defective were by RNA sequencing of the viral mixture. The fraction is written in white with the number of PFU in parentheses.
(C) Fraction of viral variants by two different methods, including amplicon sequencing and plaque assay.
(D) Manual picking of single cells in the biosafety level 3 laboratory.