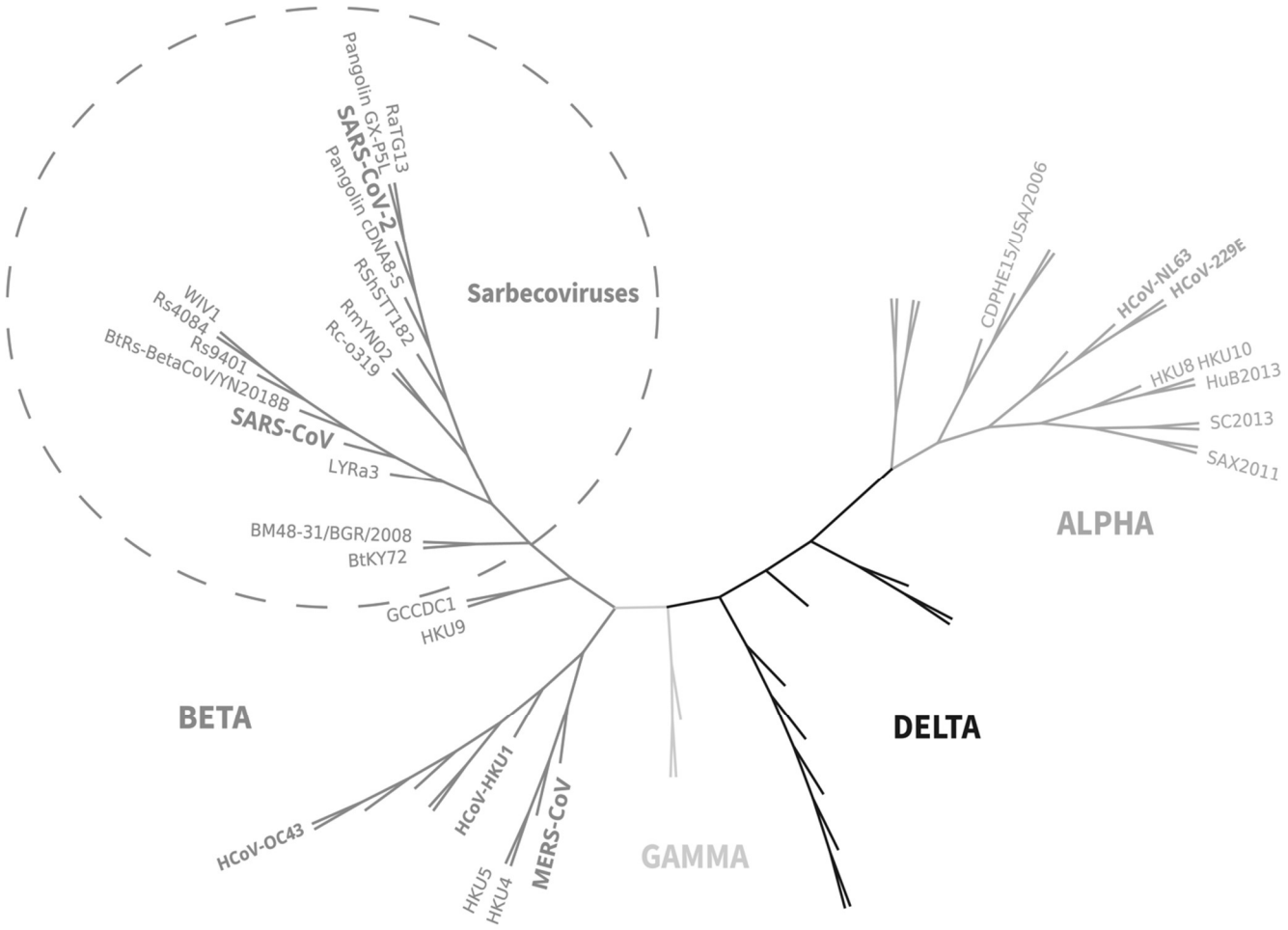
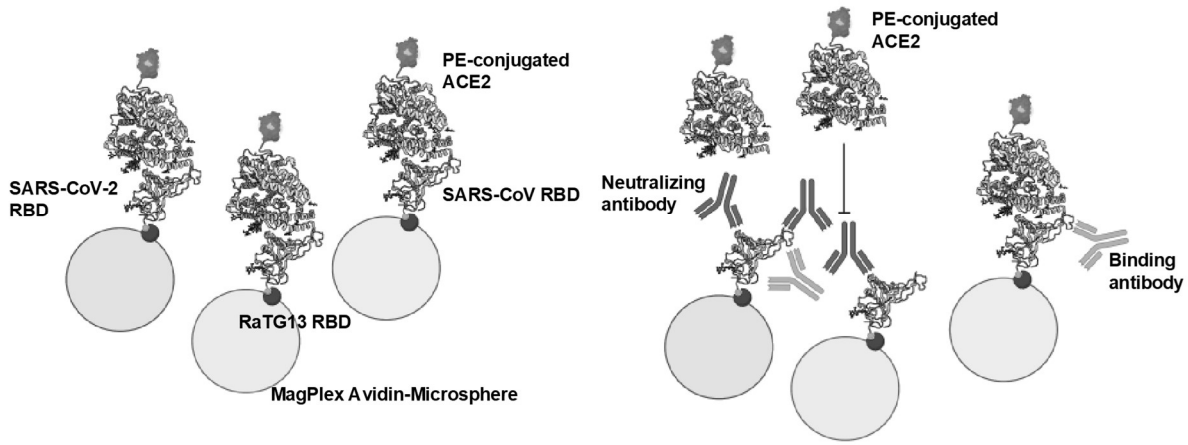
Figure 1


Sarbecoviruses
RaTG13
Pangolin GX-P5L
SARS-CoV-2
Pangolin cDNA8-S
RShSTT182
RmYN02
Rc-o319
WIV1
Rs4084
Rs9401
BtRs-BetaCoV/YN2018B
SARS-CoV
LYRa3
BM48-31/BGR/2008
BtKY72
GCCDC1
HKU9
BETA
HCoV-OC43
HCoV-HKU1
HKU5
HKU4
MERS-CoV
GAMMA
DELTA
CDPHE15/USA/2006
HCoV-NL63
HCoV-229E
HKU8 HKU10
HuB2013
SC2013
SAX2011
ALPHA

1/9

Figure 2

A


SARS-CoV-2
RBD
RaTG13 RBD
PE-conjugated
ACE2
SARS-CoV RBD
MagPlex Avidin-Microsphere
PE-conjugated
ACE2
Neutralizing
antibody
Binding
antibody

B

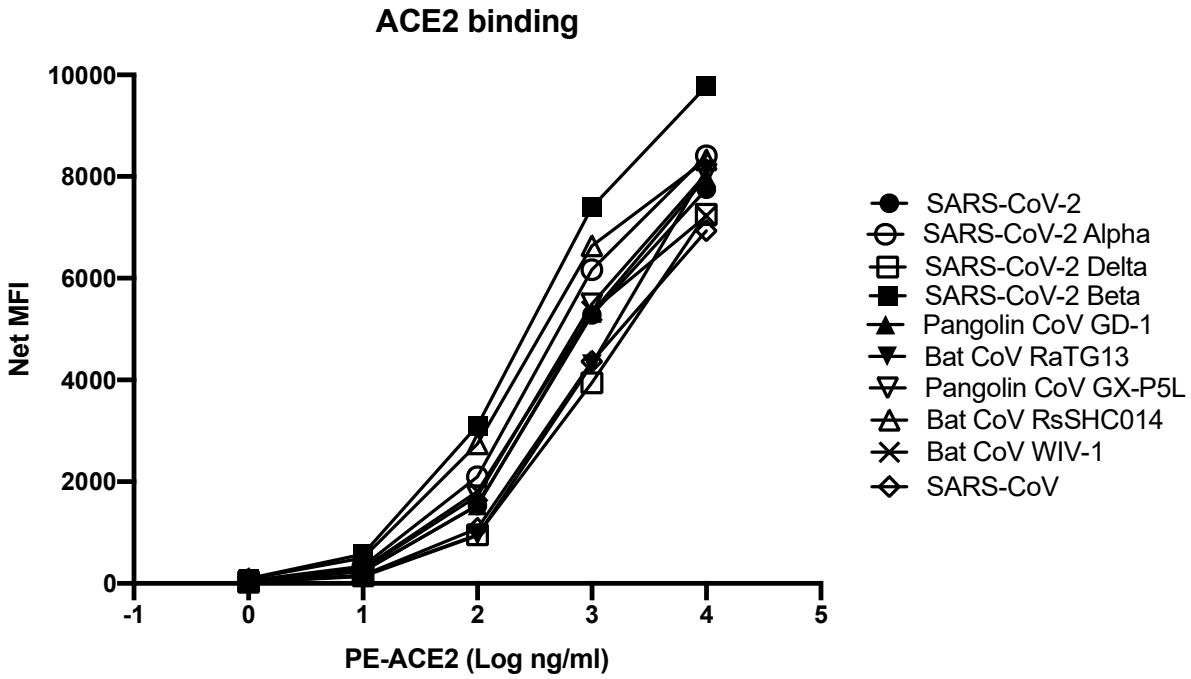

ACE2 binding
Net MFI
10000
8000
6000
4000
2000
0
-1
0
1
2
3
4
5
PE-ACE2 (Log ng/ml)
SARS-CoV-2
SARS-CoV-2 Alpha
SARS-CoV-2 Delta
SARS-CoV-2 Beta
Pangolin CoV GD-1
Bat CoV RaTG13
Pangolin CoV GX-P5L
Bat CoV RsSHC014
Bat CoV WIV-1
SARS-CoV

Figure 3

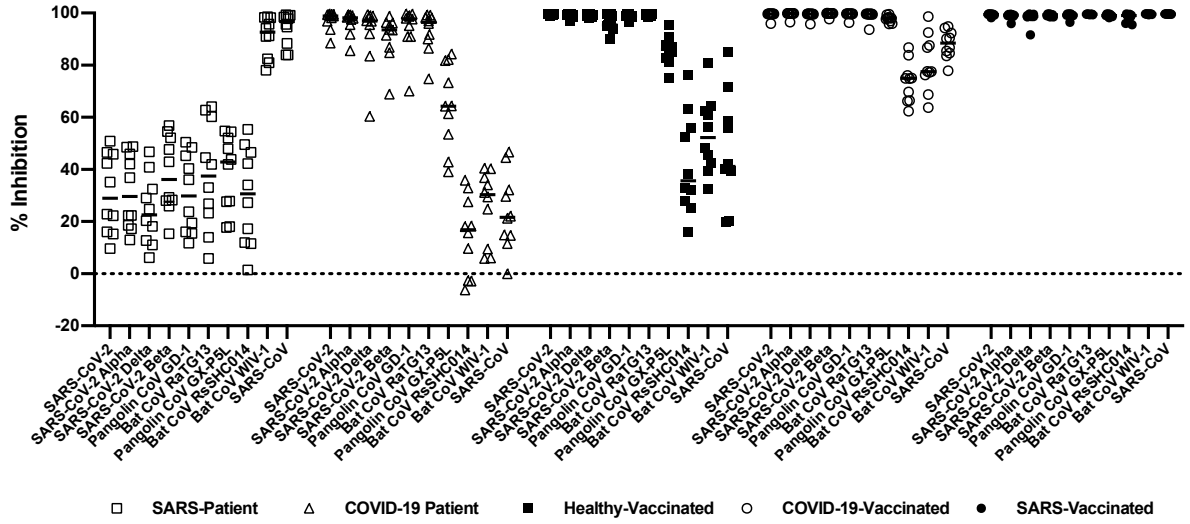

% Inhibition
100
80
60
40
20
0
-20
SARS-CoV-2
SARS-CoV-2 Alpha
SARS-CoV-2 Delta
SARS-CoV-2 Beta
Pangolin CoV GD-1
Bat CoV RaTG13
Pangolin CoV GX-P5L
Bat CoV RsSHC014
Bat CoV WIV-1
SARS-CoV
SARS-Patient
COVID-19 Patient
Healthy-Vaccinated
COVID-19-Vaccinated
SARS-Vaccinated

Figure 4

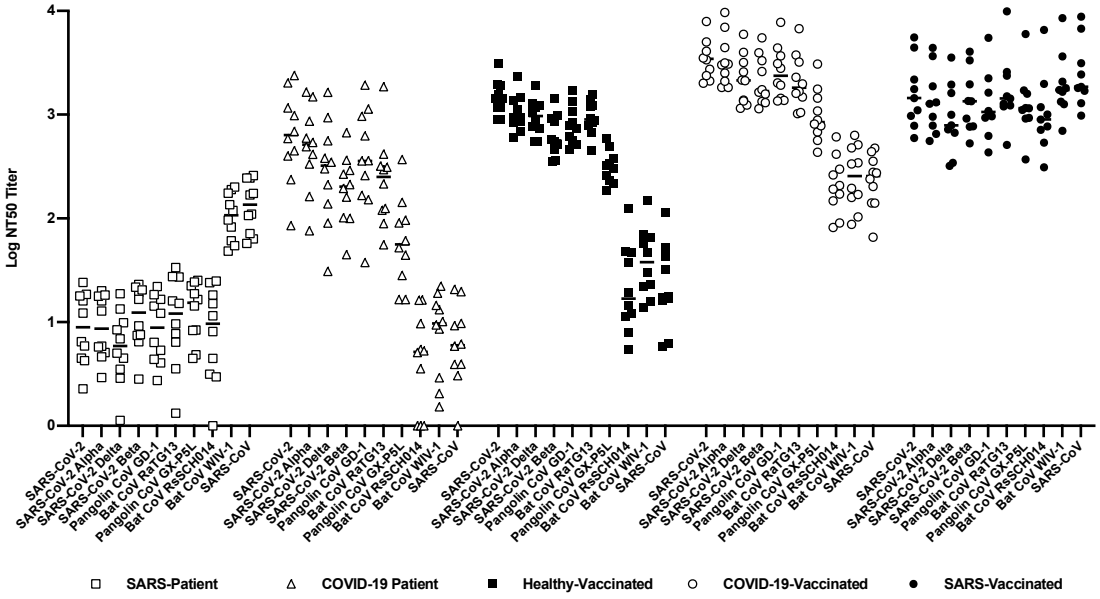

Log NT50 Titer
4
3
2
1
0
SARS-CoV-2
SARS-CoV-2 Alpha
SARS-CoV-2 Delta
SARS-CoV-2 Beta
Pangolin CoV GD-1
Bat CoV RaTG13
Pangolin CoV GX-P5L
Bat CoV RsSCH014
Bat CoV WIV-1
SARS-CoV
SARS-Patient
COVID-19 Patient
Healthy-Vaccinated
COVID-19-Vaccinated
SARS-Vaccinated

Figure 5

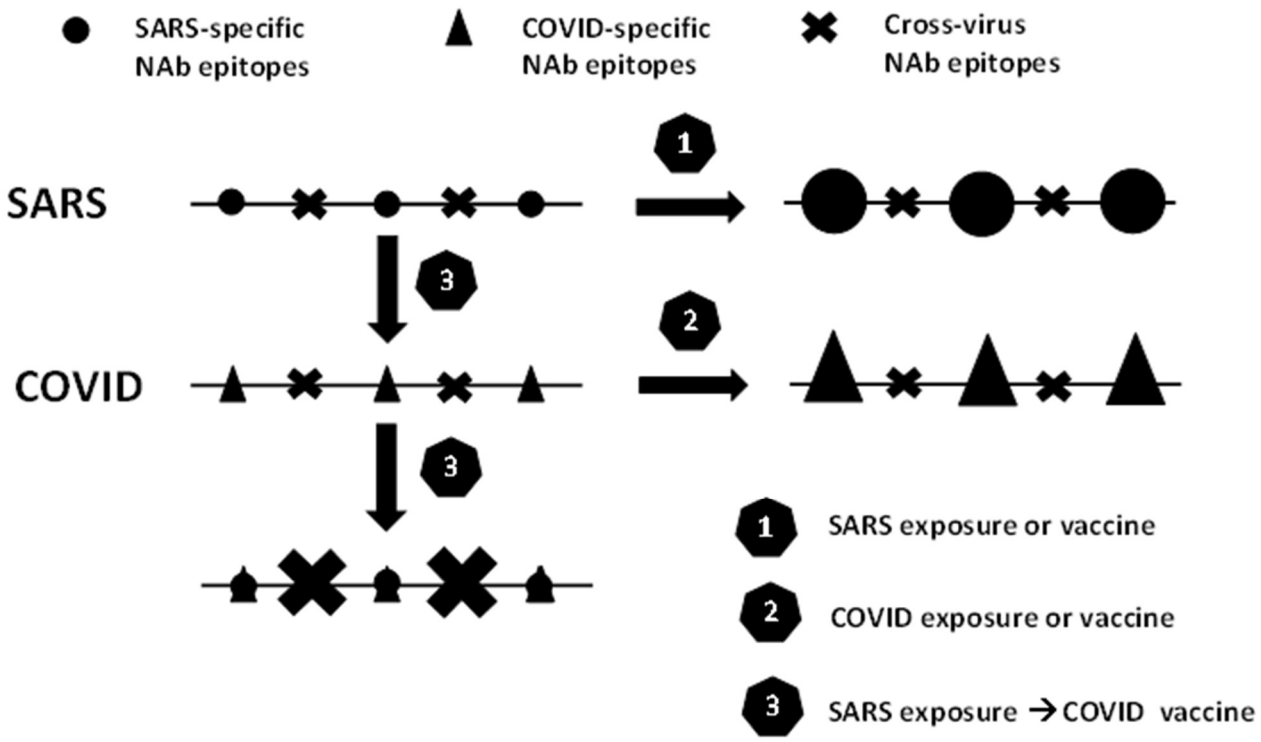

SARS-specific NAb epitopes
COVID-specific NAb epitopes
Cross-virus NAb epitopes
SARS
COVID
1
2
3
3
1 SARS exposure or vaccine
2 COVID exposure or vaccine
3 SARS exposure → COVID vaccine

Figure 6

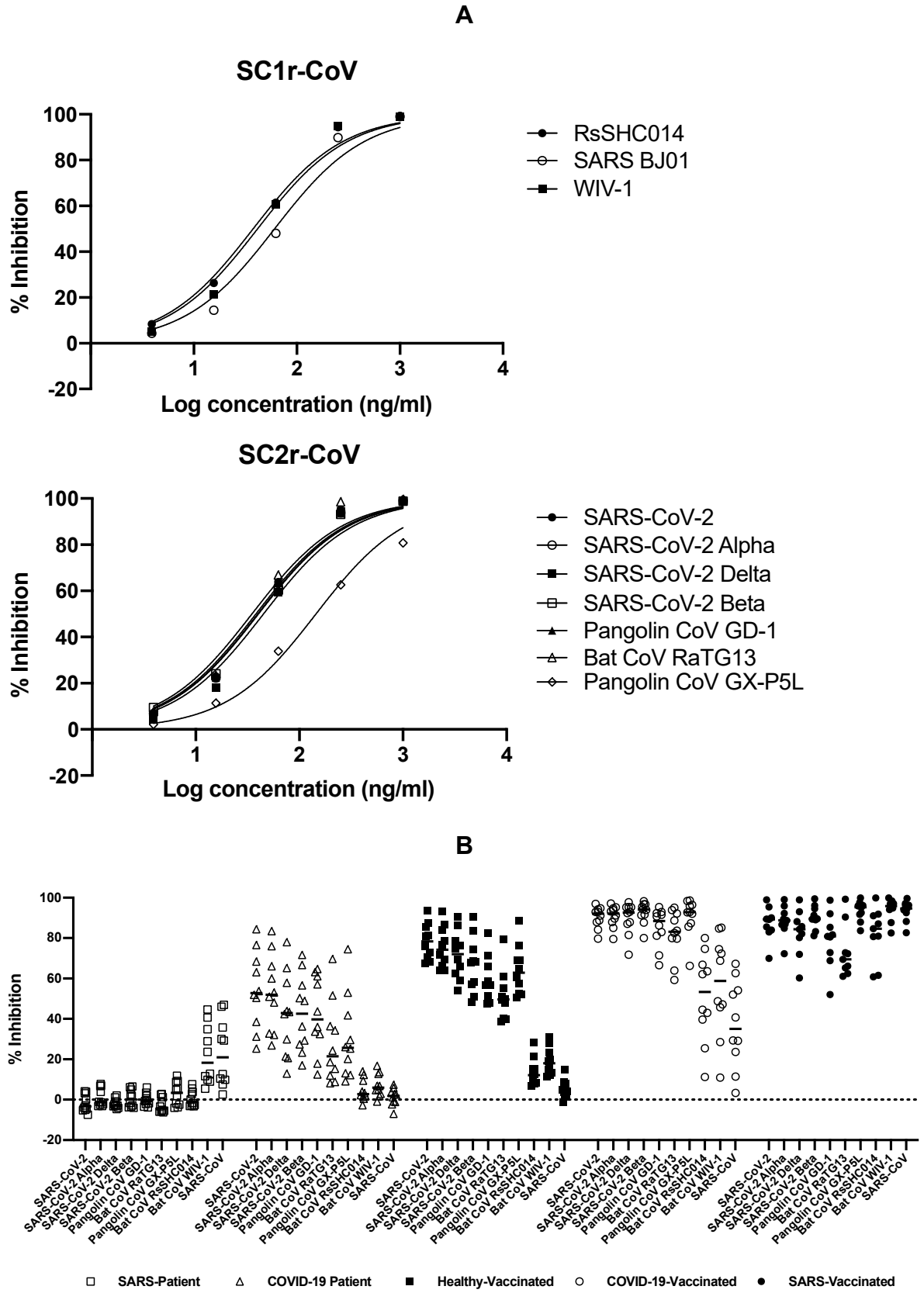
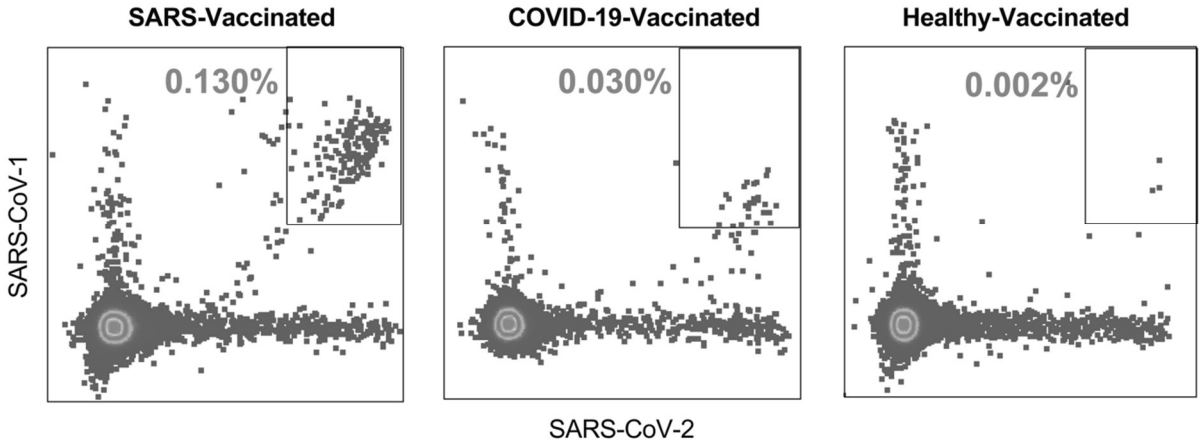

A
SC1r-CoV
% Inhibition
Log concentration (ng/ml)
RsSHC014
SARS BJ01
WIV-1
SC2r-CoV
% Inhibition
Log concentration (ng/ml)
SARS-CoV-2
SARS-CoV-2 Alpha
SARS-CoV-2 Delta
SARS-CoV-2 Beta
Pangolin CoV GD-1
Bat CoV RaTG13
Pangolin CoV GX-P5L
B
% Inhibition
SARS-Patient
COVID-19 Patient
Healthy-Vaccinated
COVID-19-Vaccinated
SARS-Vaccinated

Figure 7

A


SARS-Vaccinated
COVID-19-Vaccinated
Healthy-Vaccinated
0.130%
0.030%
0.002%
SARS-CoV-1
SARS-CoV-2

B

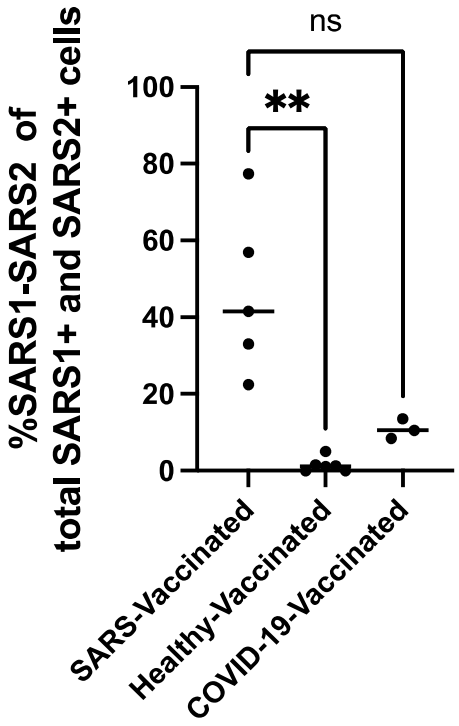

%SARS1-SARS2 of total SARS1+ and SARS2+ cells
ns
**
100
80
60
40
20
0
SARS-Vaccinated
Healthy-Vaccinated
COVID-19-Vaccinated

Figure 8

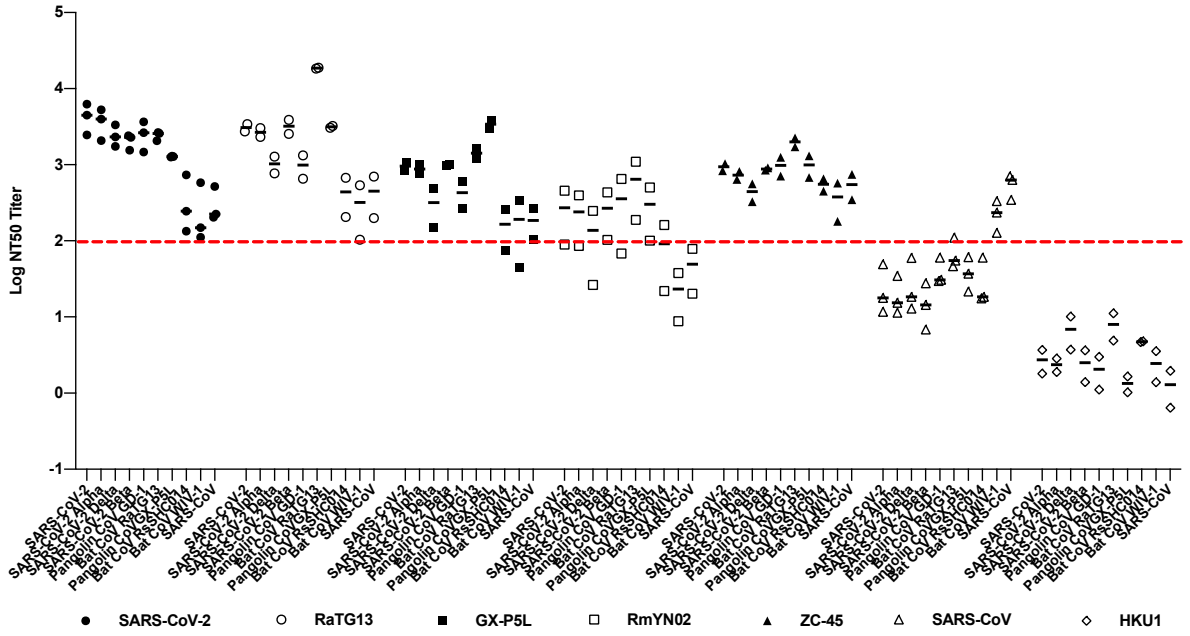


Figure 9

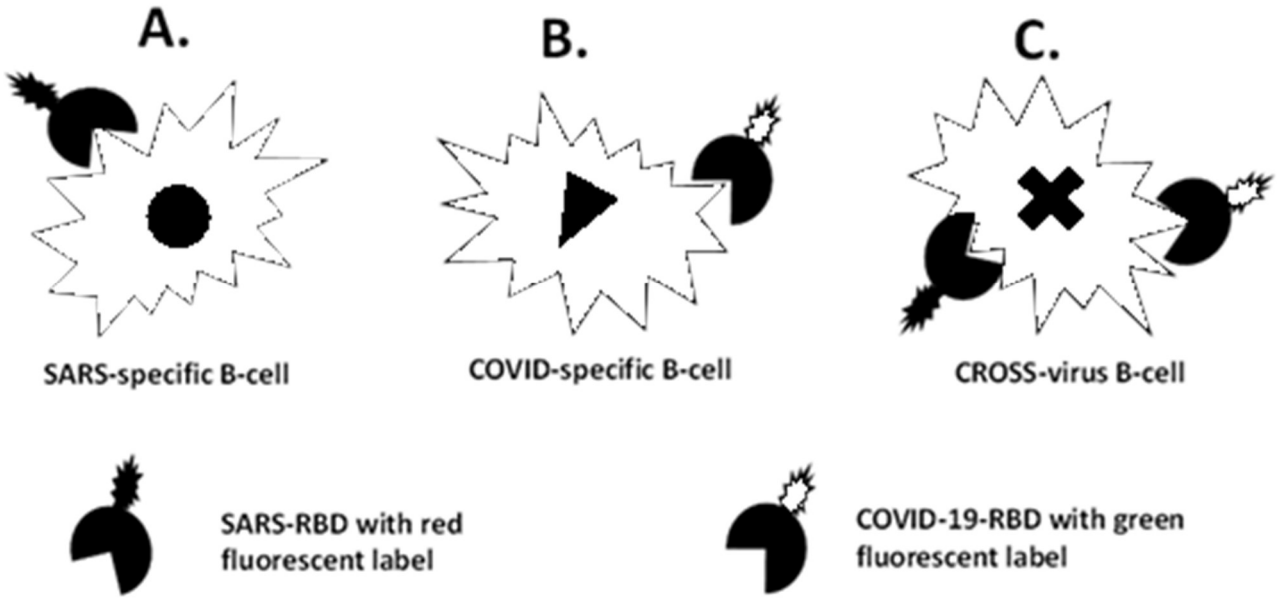
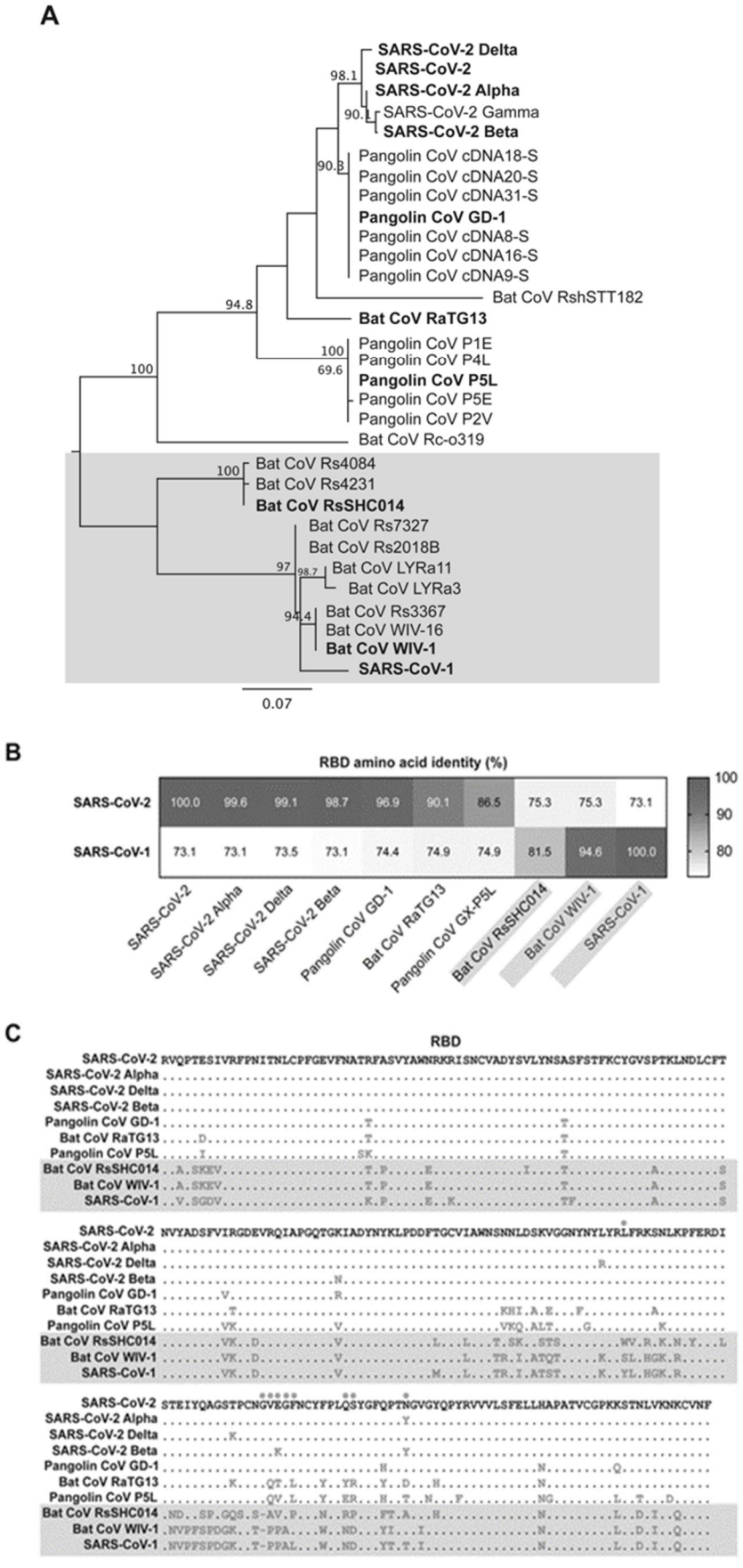


Figure 10


A
SARS-CoV-2 Delta
SARS-CoV-2
SARS-CoV-2 Alpha
SARS-CoV-2 Gamma
SARS-CoV-2 Beta
Pangolin CoV cDNA18-S
Pangolin CoV cDNA20-S
Pangolin CoV cDNA31-S
Pangolin CoV GD-1
Pangolin CoV cDNA8-S
Pangolin CoV cDNA16-S
Pangolin CoV cDNA9-S
Bat CoV RshSTT182
Bat CoV RaTG13
Pangolin CoV P1E
Pangolin CoV P4L
Pangolin CoV P5L
Pangolin CoV P5E
Pangolin CoV P2V
Bat CoV Rc-o319
Bat CoV Rs4084
Bat CoV Rs4231
Bat CoV RsSHC014
Bat CoV Rs7327
Bat CoV Rs2018B
Bat CoV LYRa11
Bat CoV LYRa3
Bat CoV Rs3367
Bat CoV WIV-16
Bat CoV WIV-1
SARS-CoV-1
0.07
B
RBD amino acid identity (%)
SARS-CoV-2
SARS-CoV-1
SARS-CoV-2 Alpha
SARS-CoV-2 Delta
SARS-CoV-2 Beta
Pangolin CoV GD-1
Bat CoV RaTG13
Pangolin CoV GX-P5L
Bat CoV RsSHC014
Bat CoV WIV-1
SARS-CoV-1
C
RBD
SARS-CoV-2
SARS-CoV-2 Alpha
SARS-CoV-2 Delta
SARS-CoV-2 Beta
Pangolin CoV GD-1
Bat CoV RaTG13
Pangolin CoV P5L
Bat CoV RsSHC014
Bat CoV WIV-1
SARS-CoV-1