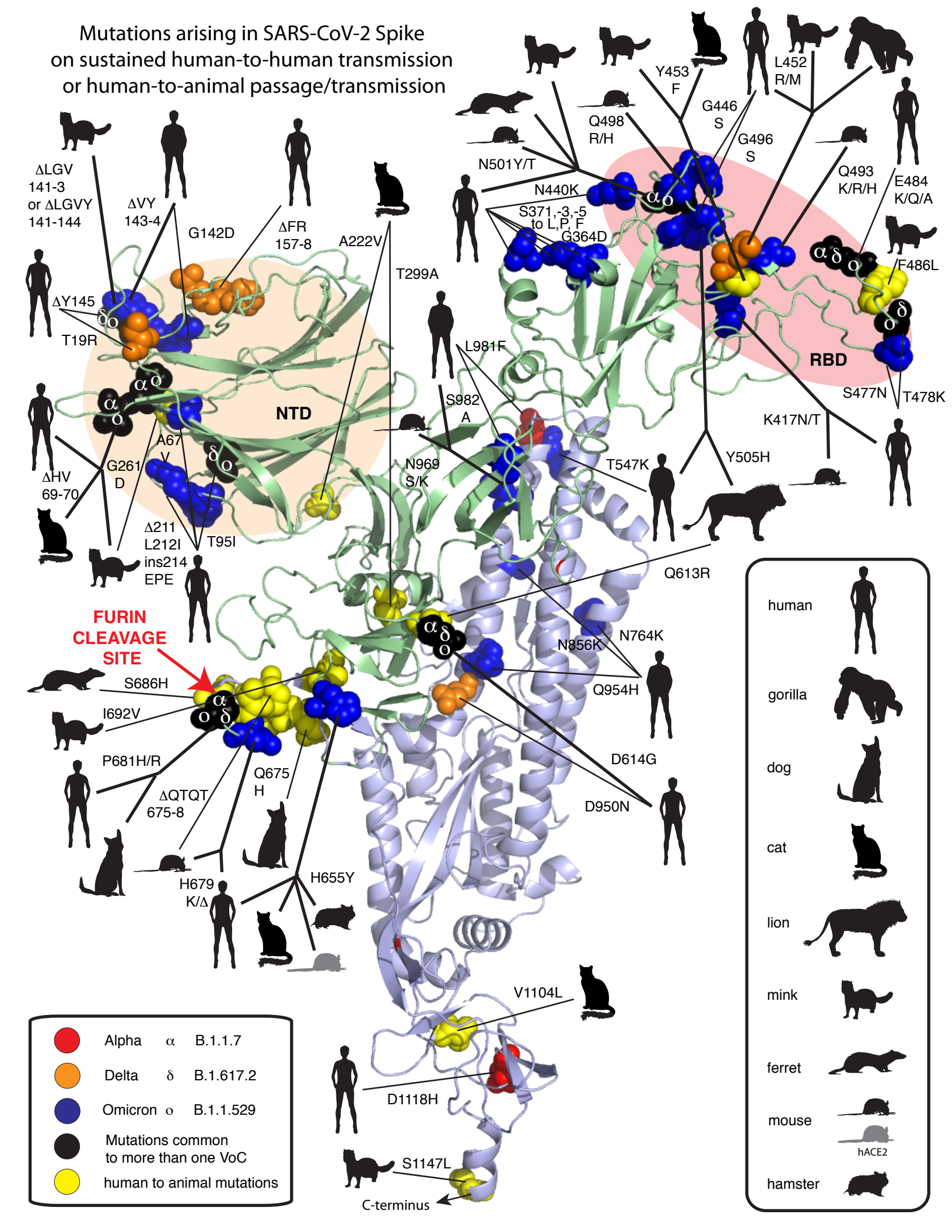
Mutations arising in SARS-CoV-2 Spike
on sustained human-to-human transmission
or human-to-animal passage/transmission
ΔLGV
141-3
or ΔLGVY
141-144
ΔVY
143-4
G142D
ΔFR
157-8
A222V
T299A
ΔY145
T19R
NTD
A67
V
G261
D
ΔHV
69-70
Δ211
L212I
ins214
EPE
T95I
L981F
S982
A
N969
S/K
N501Y/T
N440K
S371,-3,-5
to L,P, F
G364D
Q498
R/H
Y453
F
G446
S
G496
S
L452
R/M
Q493
K/R/H
E484
K/Q/A
F486L
RBD
S477N
T478K
K417N/T
Y505H
T547K
Q613R
N764K
N856K
Q954H
D614G
D950N
FURIN
CLEAVAGE
SITE
S686H
I692V
P681H/R
ΔQTQT
675-8
Q675
H
H679
K/Δ
H655Y
V1104L
D1118H
S1147L
C-terminus
Alpha α B.1.1.7
Delta δ B.1.617.2
Omicron ο B.1.1.529
Mutations common
to more than one VoC
human to animal mutations
human
gorilla
dog
cat
lion
mink
ferret
mouse
hACE2
hamster