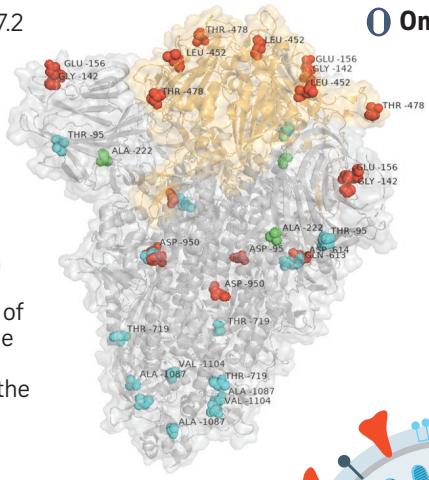
Mutating virus

Omicron has many times more mutations on its spike protein than the Delta variant, raising fears about whether it can evade currently available vaccines more easily.

COMPARISON OF SPIKE PROTEIN OF DELTA AND OMICRON VARIANTS

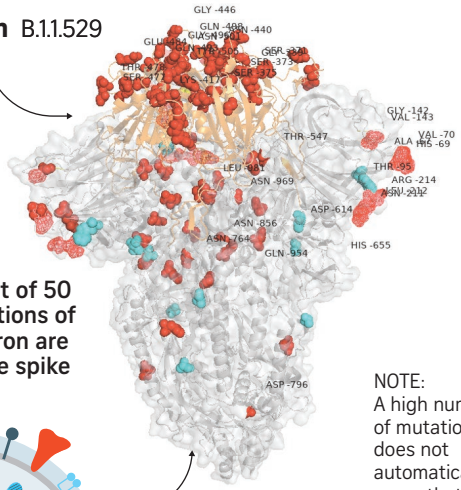
Areas with mutations: More than 70% | 40% to 70% | 15% to 40% | 5% to 15% | 1% to 5%

δ Delta B.1.617.2



An image of the new variant by the Bambino Gesu hospital in Rome shows a greater amount of mutations on the Omicron variant compared with the Delta variant.

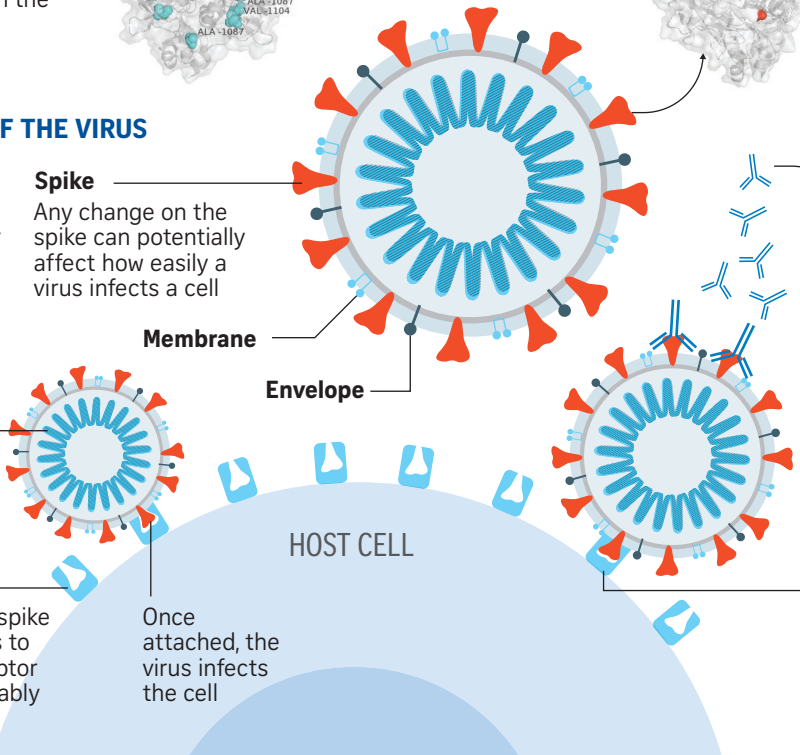
Omicron B.1.1.529



32 out of 50 mutations of Omicron are on the spike

NOTE:
A high number of mutations does not automatically mean that these variants are more dangerous.

STRUCTURE OF THE VIRUS



Nucleocapsid
Holds RNA – the genetic code for replicating the virus

Spike
Any change on the spike can potentially affect how easily a virus infects a cell

Membrane

Envelope

Antibodies
Antibodies, acquired through previous infection or vaccination, recognise the spike protein and prevent it from attaching to the host

ACE2 receptor
The Sars-CoV-2 spike protein attaches to the human receptor ACE2, found notably on lung cells

Once attached, the virus infects the cell

If there are enough changes to the spike, it could become unrecognisable to antibodies, and therefore enable the variant to evade immunity

Source: AGENCE FRANCE-PRESSE STRAITS TIMES GRAPHICS