

REIKUROHI

Covid-19 vaccines like the Pfizer-BioNTech one being used in Singapore are likely to remain effective against new variants of the coronavirus, including recent strains detected in Britain and South Africa.

Infectious diseases expert Ooi Eng Eong of the Duke-NUS Medical School said this is because the vaccines enable the body to produce antibodies against the whole of the spike protein that the virus uses to infect human cells, while the mutations are mostly occurring only on the tip of the protein.

EVOLVE

“Over time, more of the virus will evolve, but there are some parts that have to be conserved. Not everything can change,” he told *The Straits Times*.

Two recent variants causing concern among health authorities around the world include the B.1.1.7 strain first detected in Britain, and the 501.V2 strain first seen in South Africa.

These variants share a mutation affecting the tip of the spike protein, which helps the virus bind to human cells more effectively and could make the virus more contagious.

“Think of it as a key getting into a lock. The mutations happening change the shape of the key and that affects how it slots into the lock.

“It’s getting better at getting into the lock,” said Prof Ooi.

Expert: Covid vaccines likely effective against variants

Professor says the vaccines enable body to produce antibodies against whole spike protein which virus uses



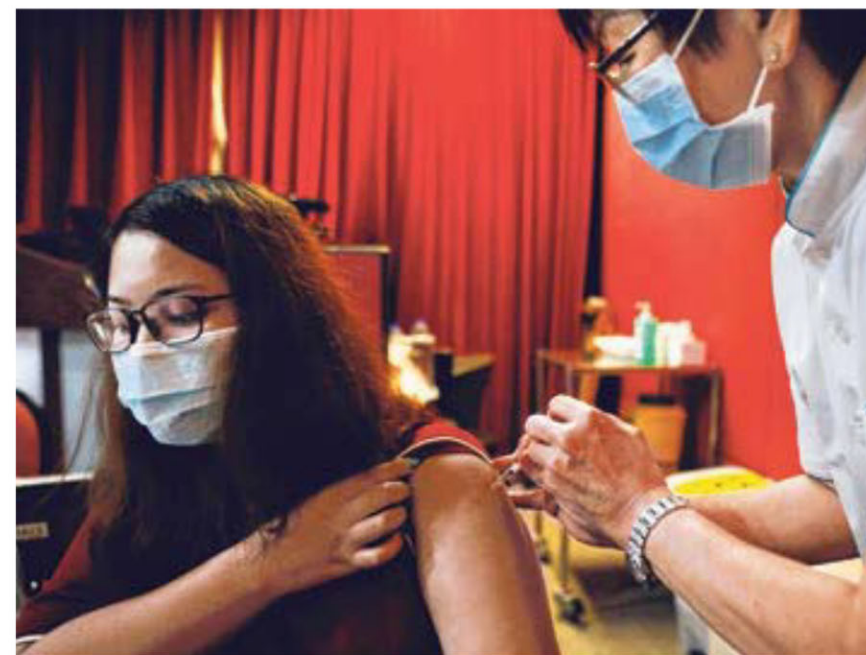
Professor Ooi Eng Eong says although the virus will evolve, not everything in its structure can change.

PHOTO: REUTERS, TNP FILE

But binding to the human cell is only the first step in infecting it, he noted.

“The protein actually literally needs to turn – the scientific term is confirmation – for the inside of the virus to be released into the cell.

“Otherwise, the shell is still in place and the heart of the virus cannot get into the cell.”



Prof Ooi said the parts of the spike protein that enable it to turn the “key” in the “lock” and release the core of the virus into the cell have not changed and cannot change too much.

“The reason is that they are in contact with many other parts. If it mutates, the entire structure will collapse,” he noted.

“The vaccine can generate

antibodies against those parts of the virus that are really critical for the infection process, making it very hard for the virus to escape from the immunity developed.”

Dr Michel Nussenzweig, an immunologist at Rockefeller University in New York, said existing vaccines will still prevent serious illness and people

should continue to be vaccinated, *The New York Times* reported last Wednesday.

PUBLISHED

The Pfizer-BioNTech Covid-19 vaccine has already been shown to be effective against the B.1.1.7 variant, according to lab results published by the two companies.

The results, which have yet to be peer reviewed, were published on the medical preprint website bioRxiv last Tuesday.

“Further data are needed to monitor the Pfizer-BioNTech Covid-19 vaccine’s effectiveness in preventing Covid-19 caused by new virus variants,” the companies said in a joint statement last Wednesday.

Prof Ooi added that Singaporeans need not worry about the mutations being reported or possibility of having to alter the vaccine in the near term.

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