

An excellent shot: odds are in favour of Covid vaccines, says boffin - Top HIV vaccine scientist is confident we'll nail it since coronavirus is an acute infection, and relatively stable

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Efforts to find an effective vaccine against coronavirus are likely to succeed, says Prof Lynn Morris, interim director of the National Institute for Communicable Diseases and an HIV vaccine specialist.

"Covid19 is an acute infection and the body is able to clear the virus, unlike HIV, which is chronic and not curable," she said on Monday.

"This bodes well for making a vaccine against Covid19 as it indicates that our immune system can control SarsCoV2 replication and eliminate infected cells.

"Furthermore, SarsCoV2 is relatively stable, making it an easier target than HIV which mutates easily," said Morris, who is instrumental in international HIV vaccine trials.

She noted that scientists "don't know yet how long antibodies to SarsCoV2 last but they start to decline within months of infection".

"Whether this will be true for antibodies induced by Covid19 vaccines remains to be determined."

The UCT Lung Institute is running the Cape Town site for the ChAdOx1 nCoV19 clinical trial, which has tested its vaccine on more than 18,000 volunteers so far in the UK, US, Brazil and SA.

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Prof Lynn Morris, National Institute for Communicable Diseases

The ChAdOx1 vaccine, developed by Oxford University and AstraZeneca, is

being tested at seven clinical trial sites in SA.

UCT pulmonologist Dr Edson Makambwa said on Monday that to date only a small percentage of vaccine volunteers had had adverse reactions, such as rigors, to the experimental vaccine.

"Some people have symptoms, others do not," he said, comparing it to the flu shot, which stimulates varying symptoms.

Once people get infected with coronavirus the body mounts an immune response with Tcells and with antibodies, which seem to wear off in two to four months, he said.

"The Tcells stay longer, waiting for the infection to attack (and fight it) and are important to almost every vaccine."

Oxford University vaccinologist Prof Sarah Gilbert, who has been at the forefront of the ChAdOx1 vaccine research, told the BBC the vaccine aimed to "induce neutralising antibodies which will bind to the virus and stop it infecting human cells".

The ChAdOx1 vaccine is what's known as a "viral vector vaccine" – a live virus transporting a piece of any pathogen into the body to stimulate an immune response.

The interviewer compared a viral vector to a vehicle that is customised to take on cargo.

The vehicle (or viral vector) for this trial is a common cold virus affecting chimps, which has been modified to make sure it does not replicate in people.

The cargo (or pathogen) is a "single gene from the coronavirus that causes Covid19", said Gilbert.

"We used the gene for spike protein (a protein on the surface of the virus) ... this was the obvious choice to try to trigger an antibody and Tcell response."

Before this pandemic, Gilbert said she had already worked on the development of a vaccine for another coronavirus, MERSCoV2.

"They are pretty similar in terms of the disease they cause but the big difference is the novel coronavirus seems to spread very rapidly between people," she said.

"We used exactly the same approach [for this vaccine] so we didn't have to do anything different, but we did want to do it more quickly," Gilbert said, after they started work in January. To develop this vaccine the main task was to change the piece of pathogen.

No safety shortcuts have been taken with the clinical trials despite the unprecedented speed of the vaccine's development and progress into testing.

Vaccine trial diary: Day 42

My absence of any symptoms after getting injections of the Oxford/AstraZeneca vaccine on August 26 and September 27 has made me wonder if I am in the placebo arm of the trial.

Vaccine diary: Visit 4, Day 42

To avoid queues I went to the UCT Lung Institute trial site an hour before it opened and the medical staff arrive to screen and follow up with volunteers.

For the first time I was done in under an hour.

8.25: Sister Hazel Monama took my blood pressure and pulse (117/80 & 58, fine).

8.35: Research nurse Solomzi Foloti took more blood.

8.40: Sister Naboweja Bester did a Covid19 test, thoroughly and efficiently.

8:42: Dr Edson Makambwa checked my throat, which was mildly sore.

All clear.

Next visit: October 26. Claire Keeton

Caption:

Go with the flow Research nurse Solomzi Foloti takes blood samples which could show antibodies to coronavirus.

One for the team Sister Naboweja Bester does a Covid-19 test on the writer, who is among 15 million people in Africa who had tests by October 7.