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Israel discovers antibody combo to fight COVID-19

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Researchers at the Laboratory of Human Antibody Research at Tel Aviv University's Sackler Faculty of Medicine have identified a combination of COVID-19 antibodies that can serve as both medication for patients and preventive treatment for high-risk populations. The antibody cocktail will be tested in clinical trials over the next few months.

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The study also found that asymptomatic COVID-19 sufferers or those who had mild symptoms developed a weaker antibody reaction, and therefore may contract the disease again. By contrast, all severely ill patients analysed in the study developed neutralising antibodies that are likely to protect them from reinfection.

For the study, Dr Freund and her team sequenced thousands of antibodies produced in the bodies of Israeli COVID-19 patients. The researchers were able to isolate and characterise six antibodies derived from the blood of two severely ill patients. They then proved that combinations of three antibodies at a time are effective against COVID-19, providing natural immunity. The researchers found that the blood's capacity for neutralising the virus comes from several types of antibodies that simultaneously attack the virus, and the mix neutralises the COVID-19 virus.

"Since the antibodies are natural and remain stable in the blood, one injection can protect against COVID-19 for several weeks, or even several months," says Freund.

In the second stage of the project, the researchers tried to isolate specific antibodies that stop the virus from binding to the human cell and replicating itself inside the cell. They identified six different antibodies, obtained from two severely ill participants, and proved that these antibodies are effective in both treating and preventing infection in cell cultures.

The research began in April 2020, soon after the pandemic reached Israel. Dr Freund and her team studied 18 of Israel's earliest COVID-19 patients.

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