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Australia invents app for analysing coronavirus genome

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A new mobile app has made it possible to analyse the genome of the SARS-CoV-2 virus on a smartphone in less than half an hour.

The app *Genopo*, developed by the Australia based Garvan Institute of Medical Research, in collaboration with the University of Peradeniya in Sri Lanka, makes genomics more accessible to remote or under-resourced regions, as well as the hospital bedside.

“Not everyone has access to the high-power computing resources that are required for DNA and RNA analysis, but most people have access to a smartphone,” says co-senior author Dr Ira Deveson, who heads the Genomic Technologies Group at Garvan’s Kinghorn Centre for Clinical Genomics.

The researchers tested *Genopo* on the raw sequencing data of virus samples isolated from nine Sydney patients infected with SARS-CoV-2, which involved extracting and amplifying the virus RNA from a swab sample, sequencing the amplified DNA with a MinION device and analysing the data on a smartphone. The researchers tested their app on different Android devices, including models from Nokia, Huawei, LG and Sony.

The *Genopo* app took an average 27 minutes to determine the complete SARS-CoV-2 genome sequence from the raw data, which the researchers say opens the possibility to do genomic analysis at the point of care, in real time.

The researchers also showed that *Genopo* can be used to profile DNA methylation – a modification which changes gene activity – in a sample of the human genome.