

RNA extraction kit Agappe Chitra Magna launched commercially for detection of COVID 19

The commercial launch of Agappe Chitra Magna, a magnetic nanoparticle-based RNA extraction kit for use during testing for detection of COVID-19 was announced by Dr VK Saraswat, NITI Aayog member and President of Institute body of Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) at a programme attended by Prof. Ashutosh Sharma, Secretary, DST, Govt of India, Dr Asha Kishore, Director SCTIMST, Dr HK Varma, Head Biomedical technology and scientists of the institute, through video conference.

The RNA extraction kit was developed by Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum, an Institute of National Importance of the Department of Science and Technology (DST) along with Agappe Diagnostics Ltd, an *in vitro* diagnostics manufacturing company based in Cochin.

“The commercial launch of the kit is a major step to make India self-reliant in detecting COVID 19 and can help increase the rate of testing and bring down its costs, a crucial step for combating the pandemic. It can also be an example of rapid commercialization and implementation of a state of the art technology for the world to emulate,” said Dr. Saraswat while announcing the launch.

“This is an example where scientists and industry worked in tandem with a purpose to serve an urgent need. The innovative process of conjugating the RNA with magnetic nanoparticles and increasing their concentration in one place by applying a magnetic field is a breakthrough that allowed the high sensitivity of RT-LAMP test from SCTIMST. Multidisciplinary lateral thinking and industry involvement right from the beginning allowed the technology to be developed into a product that was suited to meet the need of the hour,” said Professor Sharma.



“Promotion of indigenous medical technologies is the primary mandate of the Institute, and in vitro diagnostics and development of point of care, devices is a segment that we recently forayed into. The molecular medicine division headed by Dr Anoop Kumar, Senior Scientist, has been working on such diagnostic platforms and we are excited at the prospect of having

developed the magnetic nanotechnology-based RNA extraction technology that will reduce our import dependence and facilitate cost-effective confirmatory testing of COVID -19” said Dr Asha Kishore, Director, SCTIMST.

The launch programme was organized by SCTIMST in collaboration with Agappe Diagnostics Ltd at the Biomedical Technology Wing of SCTIMST, and it was followed by the first sale of the product by Mr. Thomas John, Managing Director, Agappe Diagnostics, to officials from Amrita Institute of Medical Sciences, Kochi.

Inexpensive, fast, and accurate testing for COVID-19 virus is the cornerstone of containing its spread and providing appropriate help to the infected. The Chitra Magna, an innovative RNA extraction kit developed by SCTIMST under the leadership of senior scientist, Dr. Anoop kumar Thekkuveetil, was transferred to Agappe Diagnostics in April 2020, and will now be available in the market as Agappe Chitra Magna RNA Isolation Kit. This product has been independently validated at National Institute of Virology for Covid19 RNA isolation. Central Drugs Standard Control Organisation (CDSCO) has given approval for the commercialization of this kit. The kit can be used for RNA extraction for RT-LAMP, RT-qPCR, RT-PCR and other isothermal and PCR based protocols for the detection of SARS-COV-2.

It uses an innovative technology for isolating RNA using magnetic nanoparticles to capture the RNA from the patient sample. The magnetic nanoparticle beads bind to the viral RNA and, when exposed to a magnetic field, give a highly purified and concentrated RNA. As the sensitivity of the detection method is dependent on getting an adequate quantity of viral RNA, this innovation enhances the chances of identifying positive cases.

It is estimated that India would require about 8 lakh RNA extraction kits per month during the next six months, and Agappe Chitra Magna RNA Isolation Kit priced around Rs. 150 per kit is expected to reduce the cost of testing and the country’s dependence on imported kits which cost around Rs 300. Agappe Diagnostics has a manufacturing capacity of kits for performing 3Lkakh kits per month.

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