With automated RNA extractor, IISER to scale up Covid-19 testing

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LESS THAN two months after setting up a Covid-19 Testing Centre on its campus, the Indian Institute of Science, Education and Research (IISER), Pune, now plans to expand its testing capabilities. A formal request for the same has been submitted to the office of Divisional Commissioner Deepak Mhaisekar.

Since the centre was established on May 21, a total of 7,500 tests have been performed there (till July 14). Samples from government hospitals in the city are sent to this centre, run by research scholars, undergraduate students and faculty volunteers.

Even as the nation went into a lockdown in March, many researchers in IISER worked on projects and studies related to Covid-19. These include teams working on developing diagnostic tests and tools, identifying potential drugs or vaccine candidates, research on drug repurposing, designing low-cost ventilators, creating Covid-19 mapping localities, molecular studies to understand the virus morphology, in addition to public engagement and raising awareness about the disease.

Now, in order to scale up testing, given the growing number of cases in the city, the institute plans to install an automated Ribonucelic acid (RNA) extractor.

"The RNA extractor will help in faster and uniform isolation of viral RNA from swab samples in a time-efficient manner. These extractors are designed such that there is minimum manual intervention needed and large number of sample RNAs can be processed easily. These automated platforms can process approximately 100 samples for RNA isolation in an hour. Automation will ensure consistent isolation and efficient workflow solution, which will ultimately increase the overall output of sample testing in the entire pipeline," said Anjan Banerjee, nodal officer of the Covid-19 Testing Centre at IISER, Pune.

At present, viral RNAs are isolated using an RNA extraction kit, which is done manually. As a result, the time taken limits the number of samples which get processed per day, said Banerjee. The current testing capacity is 250 samples per day.

Once the automation is adopted, which is expected within two months, the testing capacity will increase substantially.

On extending the institute's resources to the government machinery involved in combating Covid-19 in the city, Jayant Udgaonkar, director of IISER, Pune, said, "The institute is partially bearing the costs incurred towards functioning of the testing centre. The institute has also requested the support of the local administration for increasing the testing capacity further."