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A study by CSIR-CCMB on genomes from all across the country suggests a distinct cluster among coronavirus in India. Clade A3i is the second most dominant strain today in the country, said CCMB Director.

CSIR –CCMB 05 June, 2020

A study on sequence analysis of genomes from several states of the country by Centre for Cellular and Molecular Biology (CCMB), Hyderabad, suggests that a distinct cluster of the strain of Coronavirus is prevalent in India.

"The results show that a distinct cluster of virus population, uncharacterized thus far, which is prevalent in India — called the Clade A3i," Centre for Cellular and Molecular Biology of the Council of Scientific and Industrial Research (CSIR-CCMB) said in a tweet.

"This (Clade A3i) is the second most dominant strain today in the country. The most dominant strain is A2a, which came through the United States and the A3i. The second most dominant strain has come from South East Asia, Brunei and Philippines," Rakesh Mishra, Director, CCMB said.

Mishra said A3i strain represented in most states from which genomes are available but was found to be prevalent in Southern India; Tamil Nadu & Telangana.

"Considering all the genomic data available from India, the I/A3i clade is represented in 145 genomes (41.2 per cent) and represented from 16 of the 19 states from which the genomes originated. The states of Tamil Nadu, Telangana, Maharashtra, and Delhi have the highest proportions of this clade, followed by Bihar, Karnataka, Uttar Pradesh, West Bengal, Gujarat, and Madhya Pradesh," the study said.

The study also said that globally only 3.5 per cent of all the genome sequences done on this virus has this particular trait.

Commenting on the virulence of the strain, Mishra said the study found one of the mutations, which makes it slow and also less virulent.

"But this is an assumption and to verify this, we need to compare it with the clinical samples of the patients. Then we can tell if this strain is virulent or not," he added.

Meanwhile, the CCMB took to Twitter still data wasn't available to say this strain was less virulent.

"There is no data for us to yet say that the new virus population (Clade A3i) among Indians is any more or less dangerous than the other virus population (Clade A2a) present here," the CCMB tweeted.

Published in: Timesnownews

CSIR-CSIO certifies CoronaOven

CSIR –CSIO

05 June, 2020

CoronaOven becomes only UV disinfection product in market devised to combat ongoing Coronavirus health emergency, which has been evaluated, certified by ICMR-approved institution

CoronaOven — a novel sanitisation chamber designed and brought-to-market by Log 9 Materials Scientific, has been certified for appropriate UV-C light intensity and safety from The Indian Council of Medical Research (ICMR)-empanelled Council of Scientific and Industrial Research, Central Scientific Instruments Organisation's (CSIR-CSIO) laboratory. Following this, CoronaOven becomes the only UV disinfection product in the market devised to combat the ongoing Coronavirus health emergency, which has been evaluated and certified by an ICMR-approved institution.

Additionally, Log 9 recently partnered with another ICMR-approved laboratory, ie. Dr Dang's Path Lab, Delhi to test the efficacy of CoronaOven on different microorganisms (a series of Gram positive and Gram negative bacteria, drug resistant fungus, etc.) that are difficult to eradicate from surfaces. The study, which was spearheaded by Dr Devjani De, Head of Microbiology, Dr Dang's Path Lab and Member Executive Committee, Indian Association of Medical Microbiology, concluded that the product demonstrates 100 per cent anti-microbicidal activity (ability to kill microorganisms) against the tested organisms within its irradiation exposure time of ten minutes.

Speaking about the recent developments, Akshay Singhal, Founder & CEO, Log 9 Materials says, "The latest certifications we have received from ICMR-approved laboratories is a testimony to the scientific and

technological brilliance of our product CoronaOven; these will go a long way in enhancing the product's credibility and reliability. We are glad to announce that as of now, CoronaOven is the only product-of-its-kind in the market already having multiple certifications and / or regulatory approvals, and we are working closely with NITI Aayog, government agencies, and other key stakeholders to contribute in the best possible manner to aid India's fight against COVID-19. I believe that this will help safeguard the Indian public against non-scientific knock offs of our product which tend to create a false positive for the consumer."

Published in: Expresshealthcare

CSIR-CMERI develops indigenous ventilator amid rising COVID-19 cases

CSIR –CMERI

04 June, 2020

Amid rising cases of coronavirus, researchers at Central Mechanical Engineering Research Institute (CMERI), Durgapur in West Bengal, have developed an indigenous ventilator.

The ventilator has undergone multiple technical and design changes after adopting critical feedbacks from healthcare professionals, an official statement said on Wednesday.

This ventilator will cost about Rs 80,000-90,000 and will be further upgraded to meet the requirements of various other patients' parameters.

Harish Hirani, director of the institute, said the bellow design, controllers and embedded electronics of this ventilator have been customised to ensure price efficacy as well as meeting the requirements.

"The efficacy of a ventilator for a patient is also correlated to the effective response of the attending healthcare personnel. The approach of this Institute will be to harness artificial intelligence capabilities to automate the functioning of mechanical ventilators, so that the ventilators automatically respond to the fluctuating variables of a patient", added Hirani.

"CSIR-CMERI, in coordination with critical care experts of the Health World Hospitals, have studied and incrementally developed this ventilator", explained Dr Arunangshu Ganguly of Health World Hospitals.

"Since the individual parts of the ventilator can be independently developed by different industries, mass-development of this ventilator will help a broad spectrum of industries," according to Hirani.

The significantly reduced cost of the ventilators will help the economically marginalised sections of the society as well as help further fortify the government-aided healthcare schemes, he explained.

“We are in conversation with several industries for quick commercialisation of this newly developed ventilator to ensure availability of these ventilators in makeshift hospitals, basic hospitals, and other healthcare facilities.”

This will also help in upgrading the tertiary healthcare infrastructure, he further added.

Published in: Cnbctv18

Lancet issues "expression of concern" after scientists question validity of HCQ study

CSIR –IIIM 04 June, 2020

New Delhi, Jun 4 (PTI) The Lancet journal has issued a statement of concern after over 100 scientists from across the world flagged discrepancies in its recent study linking the malaria drug hydroxychloroquine with increased death risk during COVID-19 treatment.

"We are issuing an Expression of Concern to alert readers to the fact that serious scientific questions have been brought to our attention. We will update this notice as soon as we have further information," the editors of the journal said.

The statement has come after more than 100 scientists from across the globe wrote an open letter to the editor of The Lancet, Richard Horton, questioning the validity of the study which assessed the safety and effectiveness of hydroxychloroquine (HCQ) in COVID-19 treatment.

The research, which was published on May 22, was an observational study of 96,032 hospitalised COVID-19 patients from six continents that reported substantially increased deaths, and incidences of heartbeat rhythm changes associated with the use of the drugs HCQ and closely related chloroquine.

Based on the study, the scientists had concluded that the drugs are "associated with decrease in-hospital survival and an increased frequency of ventricular arrhythmias when used for treatment of COVID-19."

Soon after the study was published, the World Health Organisation (WHO) paused recruitment of patients to the HCQ arm in their SOLIDARITY clinical trial, which they resumed on Wednesday after the scientists questioned the study.

"If we don"t have a double blind randomised controlled trial (RCT), where the neither the doctors

nor the patients know what drug they are on, conclusions are always subject to bias, and The Lancet study was not and RCT," explained Ram Vishwakarma, Director of CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM) in Jammu.

Vishwakarma told PTI that the ethical process in publishing scientific studies is to disclose the database being used in any study, which he said was not followed in The Lancet research.

"Important scientific questions have been raised about data reported in the paper by Mandeep Mehra et al -- Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis -- published in The Lancet on May 22, 2020," said the editors of The Lancet in their statement expressing concern.

The research was based on a database from a company based in Illinois, US called Surgisphere Corporation, which according to the study contains COVID-19 patient data from hundreds of hospitals around the world.

From this database, the study assessed data from 96,032 patients admitted to 671 hospitals across six continents by April 14, of whom, 10,698 had died in hospital by April 21, according to the research.

However, in the open letter, the researchers flagged several points of concern about the validity of this data, and the kind of analysis done in the study with it.

Among the major issues cited in the Lancet study by the scientists, are concerns that there was no mention of the countries or hospitals that contributed to the data source and no acknowledgments of their contributions.

The data reported in the study from Australia, for instance, the open letter said, was not compatible with government reports from the country.

"Both the numbers of cases and deaths, and the details provided, seem unlikely," the scientists flagged in the open letter.

Scientists also noted that the mean daily doses of HCQ reported in the Lancet study are 100 milligrames (mg) higher than US Food and Drug Administration recommendations, while as much as 66 per cent of the data are noted from North American hospitals.

In the expression of concern raised by The Lancet on Wednesday, they said "an independent audit of the provenance and validity of the data has been commissioned by the authors not affiliated with Surgisphere and is ongoing."

"The expression of concern means that no scientist or doctor should be biased from the study," Vishwakarma explained.

"But that doesn"t mean the study is wrong. Now the author"s replies need to come and if they have all the evidence supported, then the study will stand, otherwise this paper will have to be retracted," he said. PTI VIS SAR SAR

Published in: Outlookindia

Slow pace of testing a concern as 7000 sample results pending in Uttarakhand

CSIR –IIP 04 June, 2020

DEHRADUN:Over 7000 samples are pending for testing in Uttarakhand, a figure which is causing concern to health-watchers. The state has till now tested 34,500 samples while neighbouring Himachal Pradesh, with equal number of testing labs as Uttarakhand, has tested over 40,000 samples and had just 940 pending samples till Tuesday.

Anoop Nautiyal, founder of Dehradun-based research organisation Social Development for Communities (SDC) Foundation, who has also tweeted to Union health minister Dr Harsh Vardhan seeking help to speed up the testing process in the state, told TOI that the sample pendency reaching 7,004 from barely 1,600 samples on May 21, was worrisome. "The infection rate also reached 4% in Uttarakhand on Wednesday, which is not much below the national average of around 5%," said Nautiyal, adding that the preparedness of the government machinery in this regard is cause for concern.

Meanwhile, a Covid-19 testing lab was inaugurated at the Indian Institute of Petroleum (IIP) in Dehradun on Wednesday. This will be the sixth Covid sample testing lab in the state.

Commenting on the pending samples, additional secretary (health) Yugal Kishore Pant said that with the sixth lab at IIP, the state will be able to speed up the testing process.

He added, "We have recently purchased new antibody testing machines for several districts while discussions are on with some more private labs to participate in testing. One government lab in Almora is also being converted into Covid testing lab and the process will be completed soon.“

Meanwhile, Nainital reported 15 new Covid-19 cases on Wednesday followed by nine each in Haridwar and Dehradun. Pithoragarh, Udham Singh Nagar and Pauri reported one new case each while Chamoli reported 6 new cases on Wednesday.

Published in: Timesofindia

Uttarakhand records 68 more COVID-19 cases; tally rises to 1,153

CSIR –IMTECH 04 June, 2020

Dehradun, Jun 4 (PTI) Uttarakhand recorded two more COVID-19 deaths on Thursday, taking their number to 10 as 68 fresh cases of the infection pushed the state"s tally to 1,153, officials said here.

Both the fresh fatalities were reported from AIIMS, Rishikesh, on Wednesday night, a state health bulletin said.

Of the new cases, 36 were reported in Dehradun, 10 each in Nainital and Tehri, four in Pauri, three in Champawat, two in Bageshwar and one case each was reported from Uttarkashi, Almora and Udham Singh Nagar districts, it said.

Most of the cases have a travel history to Mumbai, the bulletin said.

The number of people who have recovered from the disease in the state stands at 297, while 10 patients have died.

Meanwhile, the state government has signed an MoU with Chandigarh-based CSIR-IMTECH to ramp up testing facilities, the officials said.

The CSIR-Institute of Microbial Technology (IMTECH) is an ICMR-approved testing centre for COVID-19. PTI ALM IJT

Published in: Outlookindia

CSIR-NEIST working to improve academic scenario affected by COVID-19

CSIR –NEIST 04 June, 2020

The North East Institute of Science and Technology (NEIST) is working towards ameliorating the stagnancy created in the academic scenario of the nation due to COVID-19 pandemic. Jorhat-based CSIR-NEIST got the mandate from DG, CSIR Dr Shekhar C. Mande to organize and coordinate a country-wide CSIR-Summer Research Training Programme (CSIR-SRTP-2020).

An online programme (CSIR-SRTP-2020) is going to be discharged through the faculties and mentors from 38 CSIR laboratories spread across the length and breadth of the country. This was announced by the director of CSIR-NEIST Dr G Narahari Sastry.

As a prelude to this online programme, a website http://www.neist.res.in/srtp2020/ has been launched where aspiring students can log on to avail the online application form and the detailed brochure of the programme. The registration process starts from May 28, 2020, which closes on 05 June 2020.

The online programme has been designed for students pursuing such programmes as BSc, MSc, BTech/B.E., MCA, M.Tech, and M. Pharma and with excellent academic record throughout. The programme is also open to faculties from various colleges affiliated to UGC/AICTE/State/Central/Private Universities.

The selection process will be purely based on the merit of project proposals submitted by the candidates. An applicant will be given the opportunity to select three CSIR labs/institutes with preference and certificates will be provided to all the candidates upon successful completion of the online programme.

About 400 eminent scientists from CSIR laboratories will be engaged in this novel endeavour to deliver online lectures on various subjects such as chemistry, physics, mathematics, geoscience,

pharmacy, data sciences, artificial intelligence and medicine. Financial grants will also be provided to 400-odd students participating in this programme.

This endeavour will also ward off the lull in the academic ambience of the nation by reinvigorating and revitalizing the student fraternity with an extra dose of knowledge and motivation, says Dr Sastry. The programme should help the students to come out of the psyche of demoralization and a feeling of blueness.

Published in: Devdiscourse

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CSIR-CMERI

04 June, 2020

सीएसआइआर-सीएमईआरआइ के हेल्थकेयर पेशेवरों के साथ हाथ मिलाने से

वेंटिलेटर विकास क्षमता में आ सकती है क्रांति : गांगुली

- सीएसआइआर-सीएमईआरआइ द्वारा मैकेनिकल वेंटिलेटर का किया गया अनावरण
- देश के मेडिकल केयर मैन्युफैक्चरिंग लैंडस्केप को करेगा मजबूत
- सरकारी सहायता प्राप्त हेल्थकेयर योजनाओं को और मजबूत बनाने में मिलेगी मदद

वेंटिलेटर दिखाते संस्थान के अधिकारी.

दुर्गापुर. सीएस आई आर-सीएमईआरआई दुर्गापुर ने बुधवार को मोटराइज्ड बोलो का उपयोग कर स्वदेशी रूप से विकसित मैकेनिकल वेंटिलेटर का अनावरण किया. मैकेनिकल वेंटिलेटर का अनावरण प्रो (डॉ.) हरीश हिरानी, निदेशक, सीएसआईआर-सीएमईआरआई, दुर्गापुर और डॉ. अरुणांशु गांगुली, अध्यक्ष और प्रबंध निदेशक, हेल्थ वर्ल्ड हॉस्पिटल्स प्राइवेट लिमिटेड, दुर्गापुर की उपस्थिति में किया गया. डॉ. अरुणांशु गांगुली ने कहा कि सीएसआईआर-सीएमईआरआई हेल्थ वर्ल्ड हॉस्पिटल्स के क्रिटिकल केयर एक्सपर्ट्स डॉ. अरिन्दम कुमार हाजरा, डॉ. ब्रजेन चौधरी और डॉ. रामप्रसाद गोराई के साथ समन्वय में अध्ययन कर आज के मैकेनिकल वेंटिलेटर को विकसित किया गया. उन्होंने कहा कि सीएसआईआर-सीएमईआरआई के हेल्थ केयर पेशेवरों के साथ हाथ मिलाने से राष्ट्र की वेंटिलेटर विकास क्षमता में क्रांति आ सकती है. यह देश के मेडिकल केयर मैन्युफैक्चरिंग लैंडस्केप को मजबूत करके आयात डॉलर के बड़े पैमाने पर प्रतिस्थापन में मदद करेगा. चूंकि वेंटिलेटर के अलग-अलग हिस्सों को अलग-अलग उद्योगों द्वारा स्वतंत्र रूप से विकसित किया जा सकता है. इस वेंटिलेटर के बड़े पैमाने पर विकास से उद्योगों के व्यापक स्पेक्ट्रम को मदद मिलेगी. वेंटिलेटर्स की महत्वपूर्ण रूप से कम लागत से समाज के आर्थिक रूप से हाशिए वाले वर्गों को मदद मिलेगी और साथ ही साथ सरकारी सहायता प्राप्त हेल्थकेयर योजनाओं को और मजबूत बनाने में मदद मिलेगी. यह राष्ट्र के तृतीयक स्वास्थ्य देखभाल बुनियादी ढांचे को व्यापक रूप से उन्नत करने में भी मदद करेगा.

प्रो. (डॉ.) हरीश हिरानी ने कहा कि मैकेनाइज्ड बोलो का उपयोग करके स्वदेशी रूप से विकसित मैकेनिकल वेंटिलेटर एक वॉल्यूम नियंत्रित वेंटिलेटर है. सिस्टम के बोल्ड डिज़ाइन, कंट्रोलर्स और एम्बेडेड इलेक्ट्रॉनिक्स सभी को मूल्य प्रभावकारिता सुनिश्चित करने के साथ-साथ संबंधित उद्योगों की आवश्यकताओं को पूरा करने के लिए अनुकूलित किया गया है. मैकेनिकल वेंटिलेटर को हेल्थ वर्ल्ड हॉस्पिटल और विवेकानंद अस्पताल, दुर्गापुर (डॉ. मीत कुमार) के हेल्थकेयर पेशेवरों से महत्वपूर्ण प्रतिक्रियाओं को अपनाने के बाद कई तकनीकी और डिज़ाइन परिवर्तनों के बाद विकसित किया गया है. इस वेंटिलेटर को अन्य रोगी के मापदंडों की आवश्यकताओं को पूरा करने के लिए और उन्नत किया जाएगा. एक रोगी के लिए एक वेंटिलेटर की प्रभावकारिता भी हेल्थकेयर कर्मियों में भाग लेने की प्रभावी प्रतिक्रिया से संबंधित है. वेंटिलेटर विनिर्माण गतिविधियों का इस तरह का स्वदेशीकरण प्रधानमंत्री के आह्वान मेक इन इंडिया, मेड फॉर द वर्ल्ड' के स्पष्ट आह्वान को पूरा करेगा. डॉ. हिरानी ने वेंटिलेटर के विकास पर काम करने वाली टीम के प्रयासों की भी सराहना की. जिसमें डॉ. अनुपम सिन्हा, संजय हंसदा, कल्याण चटर्जी और अविनाश यादव शामिल थे.

बताया जाता है कि वेंटिलेटर एक मेडिकल इंटरवेंशन डिवाइस है जो सहायक ऑक्सीजन की आपूर्ति के रूप में काम करता है. जब फेफड़े के सामान्य कामकाज में कुछ असामान्यता / संक्रमण के कारण बाधित होता है. दबाव वाले ऑक्सीजन को फेफड़ों में पंप किया जाता है. और असामान्य परिस्थितियों में मानव शरीर के ऑक्सीजन संतृप्ति को बढ़ावा देने के लिए अतिरिक्त कार्बन डाइऑक्साइड को बाहर निकाल दिया जाता है.

Published in: Prabhat Khabar

CSIR-CMERI

04 June, 2020

মোটরযুক্ত বেলো ব্যবহার করে যান্ত্রিক ভেন্টিলেটর

দুর্গাপুর, ৩ জুন: সিএসআইআর-সিএমইআরআই, দুর্গাপুর মেডিকেল কেয়ার টেকনোলজির একটি মুখ্যরক্ষাকারী উন্নয়নের জন্য, তার দেশীয়ভাবে বিকশিত মেকানিক্যাল ভেন্টিলেটরটি মহারাষ্ট্রের দেলো জেলার কয়েক ৩১.০৫.২০২০ তে উদ্বোধন করেছেন। মেকানিক্যাল ভেন্টিলেটরটি সিএসআইআর-সিএমইআরআই, দুর্গাপুরের পরিচালক প্রফেসর হরিণ সিরাপী এবং স্বাস্থ্য বিধ হাসপাতাল প্রাইভেট লিমিটেডের ডেয়ারেক্টর ও কার্যস্থাপনা পরিচালক ড। অরুনাভ গাঙ্গুলির উপস্থিতিতে একটি সংবাদ সম্মেলনে উদ্বোধন করা হয়েছিল। লিমিটেড, দুর্গাপুর। ভেন্টিলেটর হল একটি মেডিকেল ডিভাইস যা শিল্প অক্সিজেনিকরণ/সংক্রমণের কারণে ফুসফুসগুলির স্বাভাবিক ক্রিয়াকলাপ বাধাগ্রস্ত হলে একটি সহায়ক অক্সিজেন সরবরাহ সাহায্য হিসাবে কাজ করে। অস্বাভাবিক পরিস্থিতিতে মানব রোগের অক্সিজেনেশন সাধুরোগন বাড়াতে প্রণযুক্ত অক্সিজেন ফুসফুসে প্রবেশ করানো হয় এবং অতিরিক্ত কার্বন ডাই অক্সাইড প্রবাহিত হয়। ডাঃ অরুনাভ গাঙ্গুলি, ডেয়ারেক্টর ও কার্যস্থাপনা পরিচালক, স্বাস্থ্য বিধ হাসপাতাল প্রাইভেট। লিমিটেড, দুর্গাপুর বলেছে যে, স্বাস্থ্য বিধ হাসপাতালের সম্প্রসারণমূলক যন্ত্র বিশেষজ্ঞের (ডাঃ অরিন্দম কুন্ডু হাসদা, প্রফেসরটোধুরী ও

ব্রাহ্মপ্রসাদপাধ্যায়, স্বাস্থ্যকের মেকানিক্যাল ভেন্টিলেটর অবয়ন ও ক্রমনির্দেশনাধীনে বিকাশ করেছেন সিএসআইআর-সিএমইআরআই)। যাতে দেলো জেলার সেপাসপাতালের সাথে অধিক ভেন্টিলেটর নিকাশের সক্ষমতা পরিবর্তন করতে পারে। এটি দেশের মেডিকেল কেয়ার মানুসারকারিক লাইসেন্সকে আরও শক্তিশালী করে আনলক্ষি তলাদের নিপাল প্রতিস্থাপনে সহায়তা করবে। যেহেতু ভেন্টিলেটরের পৃথক অংশগুলি স্বাধীনভাবে বিভিন্ন শিল্পের দ্বারা বিকশিত হতে পারে, এই ভেন্টিলেটরের বহনক উন্নয়ন শিল্পের বিভূত বর্ণালীকে সহায়তা করবে।ভে ন্টি লে টা র গুলির উৎপাদনযোগ্য পরিমাণে ট্রাস সমাজের অতিরিক্তভাবে প্রবিক ভেন্টিক সহায়তা করবে এবং পাশাপাশি সরকারী সাধারণ প্রাণ স্বাস্থ্যসেবা প্রকল্পগুলিকে আরও শক্তিশালী করতে সহায়তা করবে। অধিক তৃতীয় স্বাস্থ্যসেবা অবকাঠামো উন্নীত করা। অধ্যক্ষক হরিণ সিরাপী, সিএসআইআর-সিএমইআরআই, দুর্গাপুরের পরিচালক বলেছেন, "মেকানিক্যাল দেলো জেলার কয়েক কেন্দ্রীয়ভাবে নির্মিত মেকানিক্যাল ভেন্টিলেটর একটি ব্যয়নিউন নিয়ন্ত্রিত ভেন্টিলেটর। সিস্টেমের ভেলো ডিজাইন, কন্ট্রোলার এবং এম্বেড ইলেকট্রনিক্সগুলিকে দেশের কার্যকারিতা নিশ্চিত করার পাশাপাশি প্রাসঙ্গিক শিল্পগুলির প্রয়োজনীয়তা পূরণের জন্য কাস্টমাইজ করা যেতে পারে। মেকানিক্যাল ভেন্টিলেটর ভেলো ওয়ার্ড হাসপাতাল ও বিভেকানন্দ হাসপাতালের দুর্গাপুরের স্বাস্থ্যসেবা পেশাদারদের কাছ থেকে সম্ভাবনাময়ক নিয়ন্ত্রকগুলি গ্রহণ করার পরে একটিক প্রযুক্তিগত এবং নকশার পরিবর্তন করেছে। এই ভেন্টিলেটরটিকে রোগীর অন্যান্য বিভিন্ন পরামিতিগুলির প্রয়োজনীয়তা পূরণের জন্য আরও উন্নত করা হবে। একজন রোগীর জন্য ভেন্টিলেটরের কার্যকারিতার উপরিত স্বাস্থ্যসেবা কর্মীদের কার্যকর প্রতিক্রিয়ার সাথে সম্পর্কিত।

ডিজাইনের এই ইনস্টিটিউটের দ্বিতীয়টি হল মেকানিক্যাল ভেন্টিলেটরগুলির কার্যকারিতা স্বয়ংক্রিয় করতে কৃত্রিম বুদ্ধিমত্তার ক্ষমতা বৃদ্ধি করা, যাতে ভেন্টিলেটরগুলি স্বয়ংক্রিয়ভাবে একটি রোগীর ওঠানামার পরিবর্তনগুলিতে সাড়া দেয়। ভেন্টিলেটর উৎপাদন কার্যক্রমের এ তৃতীয় আন্তর্দিকরণ প্রকল্পটির 'মেক ইন ইন্ডিয়া, মেড ফর দ্য ওয়ার্ল্ড' 'এর আদুল আহ্বানের পরিপূরক করবে। ডাঃ হরিণী ভেন্টিলেটরের উন্নয়নে কাজ করা ডা অনুপম সিনহা, শ্রী সঞ্জয় হরলকর, শ্রীকল্যাণ চ্যাটার্জী এবং শ্রীঅভিজিৎ ঘোষ সম্বন্ধে বহিঃ টিমের প্রচেষ্টারও প্রশংসা করেছেন।

Published in: Lipi Kolkata

India''s health and sanitation campaigns can be built up to combat COVID-19: Indian-origin scientist

CSIR –IGIB

03 June, 2020

Melbourne, Jun 3 (PTI) India''s flagship health and sanitation campaigns can be built up to combat the coronavirus as they have led to a greater awareness about personal hygiene and sanitation among the people in the country, a leading Indian-origin scientist in Australia has said.

S S Vasan, who is leading a team to create a vaccine against COVID-19 at the Commonwealth Scientific and Industrial Research Organisation (CSIRO), suggested building up the Swacch Bharat Abhiyan and Ayushman Bharat Yojana along with hand washing and personal hygiene to manage the COVID-19 crisis.

He said that there is now a greater awareness in India on matters such as hand washing, personal hygiene and sanitation.

"If we build this on top of excellent foundations such as Swacch Bharat Abhiyan and Ayushman Bharat Yojana, we can help reduce the burden of infectious diseases and free up resources to tackle non-communicable diseases that will become increasingly significant as the population starts to age," Vasan said.

The Swacch Bharat Abhiyan (clean India campaign) is aimed at eliminating open defecation in rural areas during the period 2014 to 2019 through mass scale behaviour change, construction of household-owned and community-owned toilets and establishing mechanisms for monitoring toilet construction and usage.

The Ayushman Bharat Yojana is a part of the Indian government''s National Health Policy which aims to provide free health coverage to the poor and vulnerable population.

Vasan said that Australia has been successful in flattening the curve of the virus and was now in a

good position to extend its support to India"s ongoing efforts to contain the spread of the deadly disease.

"It is a two-way process and Australia can also learn from the country"s experience," Vasan said.

"There are ongoing conversations, for instance, with India"s Department of Biotechnology regarding in vitro neutralisation assays, animal models and genomics, specifically in relation to this pandemic. CSIRO and CSIR-IGIB (Council of Scientific and Industrial Research) also have a joint project on SARS-CoV-2 bioinformatics," he said, adding the two nations were natural partners.

Vasan said that there was a lot of scope to expand the links and to be a partnership of equals, underpinned by research and academic collaboration on topics of mutual priority.

"For instance, there is a lot of scope to expand "defence" to include health and biosecurity, especially risk evaluation and disease preparedness," he said.

Stressing on a global effort to stand united to defeat the virus, Vasan said, "we mustn"t squander a unique opportunity to rethink and act on how we prevent and prepare for the next big outbreak."

"If we fail to grasp this "One Health' approach, if we don"t change the way we interact with animals and the environment, we will see more pandemics like COVID-19. It is a matter of when, not if," the scientist said.

Vasan and his team are currently running the world"s first multi vaccine animal efficacy studies in a high-security lab here at CSIRO, the country"s leading scientific agency.

According to him, there are reportedly over 115 vaccine candidates, 8 funded by the Coalition for Epidemic Preparedness Innovations (CEPI), four of which are in Phase 1 clinical trials in humans.

"We are evaluating Inovio Pharmaceuticals" DNA vaccine and the University of Oxford"s viral

vectored vaccine as one dose versus two doses. Although the Oxford vaccine is envisaged by the University to be given as an injection, I am checking if administering it through the nose offers better protection," he disclosed.

"This work builds on my team being the first to initiate preclinical research outside of China by making sufficient stocks of the virus, and being the first to show that ferrets are susceptible to SARS-CoV-2," he added.

The CSIRO team is in the global race to develop the vaccine in shortest time frame which generally take at least 10-15 years of collaborative efforts to progress from discovery to licensure.

"We are trying to achieve this in 10-15 months without compromising on quality, rigour, safety, or staff health and wellbeing. Our results will be valuable to regulators who are looking for efficacy data in animals and any safety signals, before approving candidate vaccines that pass Phase 1 human trials to proceed to Phase 2 and Phase 3," he said.

Serum Institute of India has announced a partnership with the University of Oxford to mass produce the vaccine which is being evaluated in Vasan"s laboratory (in ferrets) and at the US Rocky Mountain Laboratories (in primates).

According to the journal Nature Biotechnology, India is making progress in discovery too, with Zydus Cadilla reportedly working on an electroporated DNA vaccine (similar to Inovio's candidate that I am evaluating) as well as a live attenuated vaccine. PTI NC RS RS

Published in: Outlookindia

CCMB tech to increase speed of COVID-19 tests

CSIR – CCMB 03 June, 2020

HYDERABAD: The Centre for Cellular and Molecular Biology (CCMB) has developed a modified technique of RT-PCR testing for detection of the novel Coronavirus, which takes just half the time than the technique in use currently. Once this new technique is put in use, it will help India boost the number of samples being tested for Covid-19.

This new technique is also simpler and cheaper by as much as 40 per cent than the currently used technique. CCMB director Dr Rakesh Mishra said that on Wednesday, all data regarding this new testing technique will be provided to the Indian Council of Medical Research.

In this new technique, CCMB has done away with the step of RNA isolation. Swab samples can be directly be put in a tube and transported dry. Once brought to the lab, the swabs can be mixed with a solution called TE buffer, followed by heat inactivation and testing of the sample.

This not just takes half the time due to elimination of RNA isolation step but the technicians need not carry bulky boxes for storing VTM and also avoid the risk of contamination due to leaking of VTM. CCMB researchers who developed the technique include Uday Kiran, CG Gokulan, K Santosh Kumar, Dhiviya Vedagiri, T Karthik Bharadwaj, Rakesh Mishra and Krishnan Harshan.

Published in: New Indian Express

IIP Dehradun establishes COVID-19 testing facility in record 7-weeks time

CSIR –IIP 03 June, 2020

Dehradun (Uttarakhand) [India], June 3 (ANI): The Indian Institute of Petroleum (IIP),Dehradun has set up a COVID-19 testing facility in a record time of seven weeks that can handle 100-200 samples daily.

Expert staff, who will work with IIP scientists in the facility, has been outsourced.

IIP Director Dr Anjan Ray said, "The IIP is a fuel lab but the testing lab has been established keeping in view the need of Uttarkhand."

He added, "There is a daily testing backlog of 100-200 samples in the state and this facility will be able to fill that gap."

National Health Mission Director and Additional Secretary Health Yugul Kishor Pant told ANI, "The IIP has established the state-of-art lab in record time and it will test COVID-19 samples as well as those of Dengue." (ANI)

Published in: Aninews

A COVID-19 testing laboratory established at Jorhat campus of NEIST in Assam

CSIR –NEIST 02 June, 2020

A COVID-19 testing laboratory has been established in the Jorhat campus of the North East Institute of Science and Technology (NEIST) on Tuesday.

The lab was inaugurated by Himanta Biswa Sarma, Minister of Health and Family Welfare, Assam.

The Director of CSIR-NEIST, Dr G. Narahari Sastry, described this momentous event as an important milestone in the annals of CSIR-NEIST history.

Appreciating the fact that NEIST is the first research and development institute in Assam to open up a testing facility, Dr. Himanta Biswa Sarma congratulated the scientists and staff of the institute for making it happen.

Dr Sastry mentioned that a team of 10 scientists of the institute are actively involved in isolation of RNA from the virus besides 40 other staff members are acting as a support system.

The institute's Biotechnology Division is playing a pivotal role in carrying out RT-PCR-based COVID-19 testing. Besides, the Govt. of Assam and the district administration of Jorhat are actively cooperating and facilitating the efforts put in by the institute.

A microbiologist from the Department of Health and Family Welfare, Govt. of Assam has been engaged with the institute's COVID-19 testing laboratory to certify the testing.

The samples for the testing are expected to be obtained in coordination with the state government and the district administration of Jorhat. The institute has also contractually engaged a project scientist and a research scholar for the testing purpose.

Published in: Thestatesman

Scientists chase new tools to fight Covid-19

CSIR –CCMB 02 June, 2020

Hyderabad: Scientists, supported by Centre for Cellular and Molecular Biology (CCMB), are working on six innovative ideas to develop rapid testing and diagnostic tools for Covid-19. These innovations have been selected from nearly 40 proposals.

Development of a cost-effective, single-tube screening test for Covid-19, developing a rapid point of care test for detection of IgM and IgG antibodies to Covid-19 and one-step nucleic acid amplification for detection of Covid-19 are among some of the ideas being worked upon.

Currently, the industry standard of testing are based on reverse transcription polymerase chain reaction (RT-PCR) laboratory technique, which requires expensive equipment and makes testing a costly affair. “Three of the projects are trying to develop a rapid way of testing and improving the sensitivity of the tests by using simpler methods. We hope with these, the cost of testing will come down,” CCMB-Atal Incubation Centre chief executive officer Dr N Madhusudhana Rao said.

“These research projects (by scientists and start-ups) could be beneficial in stage one of developing screening platforms for the virus. The six projects were chosen for their feasibility. An optimised financial support is being extended to each of the six projects to see if the projects are viable or not,” Dr Rao added.

Published in: Times of India

CCMB cultures may help make vaccines, drugs

CSIR –CCMB

02 June, 2020

CSIR-Centre for Cellular and Molecular Biology (CCMB) has established stable cultures of COVID-19 from patients' samples in the last one-and-a-half months.

Virologist Krishnan H. Harshan and his research team have isolated infectious viruses from several isolates. The ability to culture in the lab enables to work towards vaccine development and testing potential drugs to fight COVID-19, said director Rakesh Mishra.

"The premier research institution could become a potential donor of the culture to other authorised centres that can continue growing the virus for their own use," he said, pointing out that the virus is known to infect epithelial cells in human respiratory tract. It makes viral proteins first and then starts to replicate the genomic RNA to make more copies of itself.

This meant the virus needs a set of host factors to replicate. "Currently, primary epithelial cells generated from human origins do not grow for many generations in labs, which is key to culturing viruses continuously. CCMB and other labs are growing the virus through an 'immortal' cell line using kidney epithelial cell lines from Green African monkey and carry a mutation allowing them to proliferate indefinitely," said Dr. Krishnan.

This 'cultured SARS-CoV-2' can help in making vaccines, antigens, test drugs and so on. Vaccines trigger immune response in host organism that can be used as protection from infection from viruses. Usually, proteins specific to such pathogens are good candidates as vaccines as they trigger antibody response in the host that could be long-term or short-term. Such killed viruses are used as vaccines in several cases like polio.

Though the inactivated virus cannot initiate infection, their structural proteins trigger antibody production. The efficacy of inactivated SARS-CoV-2 as vaccine candidate is currently being investigated by several groups. Inactivated viruses can trigger antibody response in other mammalian hosts like mice, horses and camels. Antibodies generated in these can be purified and processed for injecting into humans to trigger antiviral response and limit the infection. These antibodies are not vaccines, but can be considered as antidote against the virus, he said.

Lab culture of virus will also help in testing of antibodies because neutralising antibodies can bind to viruses preventing them from infecting cells. These antibodies can be generated in other mammals and their neutralising capacity is studied by incubating with infectious virus to check for the prevention of infection successfully, he said.

Drug-screening too will be possible as a quick way to identify a good drug is to 'repurpose' those already being used in humans for other infections since they had already undergone clinical trials. So, if found to be having anti-SARS-CoV-2 effects, they can be quickly tested in humans for limiting COVID, he pointed out.

"We can now isolate and maintain viral strains. We are working towards producing viruses in huge quantities that can be inactivated to be used in vaccine development and antibody production. We have also started testing potential drugs with DRDO and others. We hope such systems are replicated at multiple research institutes and private companies to become a useful resource in the fight against this pandemic and for future preparedness," he added.

Published in: The Hindu

Russia backing Avifavir to treat Covid-19 good news for India: Scientists

CSIR –IICB,NCL 02 June, 2020

New Delhi: Russia's approval of the antiviral drug Avifavir to treat COVID-19 is good news for India as it is based on an influenza medication already in advanced clinical trials here, say scientists.

Avifavir, described by its developers in Russia as perhaps the most promising anti COVID-19 drug in the world, is derived from Favipiravir.

Mumbai-based Glenmark Pharmaceuticals announced last week that Favipiravir is under phase 3 clinical trials -- the penultimate stage in drug testing -- in India.

Stating that Avifavir has shown high efficacy in treating patients with coronavirus during clinical trials, the Russian Direct Investment Fund (RDIF) on Monday said it will deliver 60,000 courses of the drug to Russian hospitals in June.

It also said Avifavir has become the first Favipiravir-based drug in the world to be approved for the treatment of COVID-19, it said.

The close derivative link between Avifavir and Favipiravir is reason for hope in India too, said scientists here.

Favipiravir has anyway been in discussion and a point of interest in the recent past, said Arup Kumar Banerjee from the North Bengal Medical College and Hospital, Siliguri.

He noted that Favipiravir is available under the name of Avigan for influenza and is often recommended for viral infections such as bunyavirus, filovirus and arenavirus.

"It is prescribed for severe fever with thrombocytopenia syndrome (SFTS), a viral hemorrhagic fever

with high fatality rate and is effective against all strains of influenza viruses," Banerjee told PTI.

“Vaccine is important, so is antiviral. We need to develop both side by side. Today, if anybody comes up with a drug against COVID 19 irrespective of country or origin, it is a good news subject to validation of the same in large scale. Hence, the same applies to this derivative as well," he added.

Avifavir, developed by a joint venture between RDIF and ChemRar Group, is designed to disrupt the ability of the novel coronavirus to reproduce.

“Avifavir is not only the first antiviral drug registered against coronavirus in Russia, but it is also perhaps the most promising anti Covid-19 drug in the world," RDIF CEO Kirill Dmitriev said in a statement.

The RDIF and the ChemRar Group last week announced that Avifavir has received a temporary registration certificate from the Russian Ministry of Health.

“Avifavir is a drug that as per available information is being tested by Russia against COVID 19 and is based on Favipiravir, a drug that is known to have inhibitory function against RNA-dependent RNA polymerase (RdRP) activity of a virus," said virologist Upasana Ray.

RdRP is an essential protein encoded in the genes of RNA-containing viruses

“Favipiravir has been shown earlier to inhibit the influenza virus RNA-dependent RNA polymerase," Ray, senior scientist at CSIR-IICB in Kolkata, told PTI.

RNA polymerase is a viral enzyme that helps in replication or reproduction of the viral RNA, that is the genetic material. Hence, a drug that inhibits this activity would basically curb the functional multiplication of the virus, she explained.

Glenmark last week announced a new randomised study in India to test the combined efficacy

of Favipiravir and another antiviral drug Umifenovir as a potential COVID-19 treatment strategy.

Glenmark also said that it is conducting Phase 3 clinical trials of Favipiravir as a COVID-19 therapy option with 150 patients, enrolled from nine leading government and private hospitals across the country.

“So far, 30 patients have been randomised. The monotherapy phase 3 clinical trial results are expected by July or August 2020," the company said in a statement last week.

Glenmark said it is the first pharmaceutical company to receive approval from drug regulator Drug Controller General of India (DCGI) to conduct Favipiravir clinical trials against COVID-19 in India.

Favipiravir is an oral antiviral drug approved in Japan in 2014 for the treatment of novel or re-emerging influenza virus infections. It has a unique mechanism of action by which it inhibits viral replication or reproduction, it said.

“Since it (Favipiravir) was earlier tested for influenza, they (researchers) could bypass initial toxicity tests etc. It was one of (hundreds) of clinical trials against SARS-COV-2. With preliminary data for the clinical trials looking positive they jumped on it," Durba Sengupta, from CSIR-National Chemical Laboratory in Pune, Maharashtra, told PTI.

Sengupta said the drug acts on one of the main proteins that is responsible for RNA-replication.
He also injected a note of caution.

Till the clinical trial results are properly reported, it is difficult to say how effective it will be.

“One has to be definitely cautious. First, it’s not designed to target this particular virus, and it is RdRP, so the binding may be weaker than in influenza," Sengupta said.

Though it is unknown how the different viral strains will bind, she said it is one of the better options right now.

Another point, Sengupta noted, is that the drug's action is on the same target as the antiviral remdesivir, one of the top possible drug contenders for COVID-19.

“I think several people thought that remdesvir would be quite promising -- but it has been ambiguous so far. Getting robust clinical data in such short times is really tricky. It is really difficult to say without the actual clinical data and looking at the statistics," she added.

India's drug regulator has granted US pharma giant Gilead Sciences marketing authorisation for remdesivir for "restricted emergency use" on hospitalised COVID-19 patients in view of the crisis posed by the pandemic.

The approval process for remdesivir was accelerated in view of the emergency situation and the unmet need for medicines in light of the coronavirus outbreak, a source in the know of the developments told PTI.

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CSIR-CSIO

02 June, 2020

कोविड-19 मरीजों को नई जिंदगी देगा सीएसआइओ का खास पोर्टेबल वेंटीलेटर

डॉ. सुमित सिंह रत्योरा • चंडीगढ़

दुनियाभर में कोरोना वायरस संक्रमित (कोविड-19) मरीजों की संख्या लगातार बढ़ रही है। भारत ही नहीं, अमेरिका जैसे देशों में भी कोरोना पॉजिटिव मरीजों के लिए अस्पतालों में वेंटीलेटर्स की भारी कमी है। जिसका कारण इनकी सप्लाई कम और बहुत महंगा होना है।

चंडीगढ़ स्थित केंद्रीय वैज्ञानिक उपकरण संगठन (सीएसआइओ) ने महंगे वेंटीलेटर का विकल्प तैयार कर दिया है। सीएसआइओ साइंटिस्ट ने देश में सबसे सस्ता और मरीजों से जुड़ी सभी जरूरतों को पूरा करने वाला पोर्टेबल वेंटीलेटर तैयार कर लिया है। अब 20 से 25 हजार में पोर्टेबल वेंटीलेटर मिल सकेगा। चेन्नई की प्राइवेट कंपनी को टेक्नोलॉजी ट्रांसफर की गई है। जून के अंत तक पहले चरण में 5000 पोर्टेबल वेंटीलेटर देश के बाजारों में उपलब्ध हो सकेंगे। सीएसआइओ के सीनियर साइंटिस्ट डॉ. विनोद करार की देखरेख में वेंटीलेटर तैयार किया गया है।

जागरण विशेष

- चेन्नई की कंपनी को टेक्नोलॉजी ट्रांसफर, महीनेभर में पांच हजार पोर्टेबल वेंटीलेटर हो जाएंगे तैयार
- कम बजट के अस्पतालों में लग सकेंगे, कोविड पेशेंट की मूवमेंट को रोका जा सकेगा
- जीएमसीएच-32 डॉक्टरों के सुझावों पर तैयार किया वेंटीलेटर

चंडीगढ़ : सीएसआइओ साइंटिस्ट द्वारा तैयार किया गया पोर्टेबल वेंटीलेटर • जागरण

यह है पोर्टेबल वेंटीलेटर

सीएसआइओ को पोर्टेबल वेंटीलेटर रेसपिरेशन असिस्टेंट इंटरवेंशन डिवाइस (रेसपी-एउ) को खास तौर पर कोविड-19 की जरूरतों के हिसाब से तैयार किया गया है। आठ से 10 कोलोग्राम भार के इस वेंटीलेटर में कोरोना पेशेंट की जरूरत के सभी फंक्शन हैं। इसकी सबसे बड़ी खासियत यह है कि सस्ता होने के कारण देशभर में कम बजट और सरकारी अस्पतालों में भी आसानी से उपलब्ध हो सकेगा। पोर्टेबल वेंटीलेटर का एक वर्जन खास तौर पर एंबुलेंस के लिए तैयार किया है। बिजली नहीं होने पर भी बैटरी से एक घंटा यह काम करेगा।

एक्सपर्ट के सुझावों पर किया गया है तैयार

सीएसआइओ द्वारा पोर्टेबल वेंटीलेटर को चंडीगढ़ के ही गवर्नमेंट मेडिकल कॉलेज एंड हॉस्पिटल (जीएमसीएच-32) के साथ मिलकर तैयार किया गया है। कॉलेज डायरेक्टर डॉ. वीएस चवन और डॉ. संजीव वालटा ने वेंटीलेटर को तैयार करने में काफी अच्छे सुझाव दिए। सीएसआइओ साइंटिस्ट डॉ. विनोद करार के साथ ही डॉ. दिनेश, डॉ. नीतेश कुमार सहित करीब 15 सदस्यों की टीम ने बेजोड़ मेहनत से इसे तैयार किया है। डॉ. सुरेंद्र सैनी के अनुसार इस पोर्टेबल वेंटीलेटर की दूसरे देशों में भी काफी डिमांड रहेगी।

वेंटीलेटर नहीं होने के कारण कोविड-19 मरीजों की मूवमेंट से संक्रमण का खतरा बढ़ जाता है। यह उपकरण आने वाले दिनों में बहुत ही कारगर साबित होगा। सस्ता होने के कारण अस्पताल अधिक वेंटीलेटर की सुविधा दे सकेंगे।

-डॉ. विनोद करार, टीम लीडर एंड चीफ साइंटिस्ट, सीएसआइओ, चंडीगढ़

कोविड-19 की जरूरतों को देखते हुए ही पोर्टेबल वेंटीलेटर तैयार किया है। कम लागत के कारण यह कम बजट अस्पतालों में भी उपलब्ध हो सकेगा। बीते दो महीने में कोविड-19 पर ही सीएसआइओ ने इलेक्ट्रोस्टेटिक डिसइन्फेक्शन मशीन, डेंटल पीपीई किट और आइआर थर्मामीटर सहित चार उपकरण तैयार किए हैं।

-डॉ. सुरेंद्र सिंह सैनी, प्रमुख बिजनेस इनोवेटिव एंड प्रोजेक्ट प्लानिंग, सीएसआइओ, चंडीगढ़

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CFTRI, pvt. lab sign pact for developing hygiene products

CSIR –CFTRI 01 June, 2020

CSIR-Central Food Technological Research Institute (CFTRI), Mysuru has signed a memorandum of understanding (MoU) with Schevaran Laboratories for the development of personal hygiene, cleaning and related industrial products and solutions.

In the post-coronavirus pandemic scenario, both the organisations have felt the need for more efficient environment-friendly and cost-effective quality products in the market and the partnership would be beneficial in meeting the emerging challenges, the institute said.

During the lockdown, the CSIR-CFTRI delivered over 30 tonnes of ready-to-eat food supplements and flavoured water to migrant workers. Hand sanitizers prepared in the lab as per WHO guidelines were also distributed to the district administration and field-level staff.

The institute, in a release here on Monday, said it was planning innovative solutions to promote rural entrepreneurships with the involvement of FPOs, NGOs, and women SHGs and to address reverse migration to the countryside.

Though the primary focus will be supporting sustainable food enterprises, the institute is also exploring the potential of developing quality disinfectants and affordable sanitizers based on plant extracts for employment generation, the release stated.

Speaking on the occasion, KSMS Raghavarao, Director, CSIR-CFTRI, said the CFTRI would be keen to involve industry from the early stages of product development while fulfilling the customers' aspirations and industrial viability. He also said that co-branding is one of the promising routes for successful commercialisation of innovation directly from lab to market.

Sam Cherian, MD, Schevaran Labs, said the partnership would help build a platform to promote

innovations and enable the diverse industry sectors towards achieving cleaning hygiene in its true form. The impact will be more in the food industry sector that would usher in better hygienic standards through customised formulations, according to the release.

The MoU copies were exchanged in the presence of T.N. Bhavanishankar, director, Schevaran Innovation Centre, K.N. Gurudutt, M.C. Varadaraj and Anna Cherian from Schevaran along with scientists from CFTRI.

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