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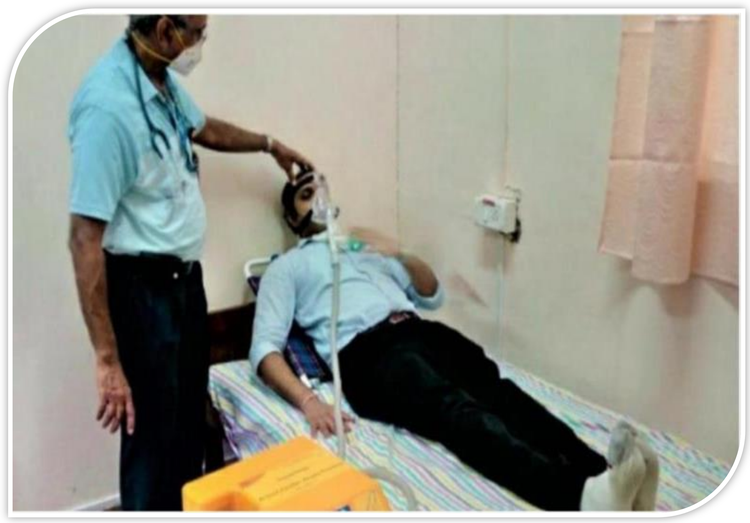


CSIR-IICT

24th July, 2020

Cipla's affordable COVID drug may hit the shelves in a week

'Favipiravir used successfully on COVID patients in China, Japan and South Korea'

V. GEETANATH
HYDERABAD

Anti-viral and off-patent drug Favipiravir, which has shown promise in clinical trials for treatment of mild and moderate COVID-19 patients, will soon be available in large quantities and at a more affordable price with Indian pharmaceutical giant Cipla likely to release the product into the market within a week.

Council of Scientific & Industrial Research announced on Thursday that Favipiravir was originally discovered by Fuji (Japan) but the CSIR-Indian Institute of Chemical Technology (CSIR-IICT) here developed a cost-effective process using locally available chemicals to synthesise the Active Pharmaceutical Ingredient (API) and transferred the technology to Cipla in April.

Cipla has now scaled up the process in its manufacturing facility and has approached the Drug Controller General of India (DCGI) for permission to launch the product in the country. Since DCGI has given restricted emergency use for Favipiravir already, Cipla will be launching the product to help patients suffering from COVID-19, according to top scientists.

CSIR-IICT developed a cost-effective process to synthesise API and gave the technology to Cipla. ▪REPRESENTATIONAL PIC

"The technology provided by us is very efficient and makes it affordable. It allows Cipla to make large quantities of the product within a short span of time," said CSIR-IICT director S. Chandrashekar. CSIR director-general Shekhar C. Mande observed that the CSIR had been working with the industry in developing quick solutions for mitigation of COVID and partnership with Cipla was an example of how CSIR was committed to bringing 'repurposed' drugs on fast track.

Top scientists shared that the Favipiravir had been used successfully on coronavirus patients in China, Japan and South Korea to bring down the viral load. It was in March that the CSIR-IICT had entered into a pact with Cipla to manufacture three promising chemical compounds with anti-viral properties to make the APIs.

COVID-19

Cipla chairman Y.K. Hamied took the initiative and had sought CSIR-IICT help in making APIs for Favipiravir, Remidesivir and Bolaxavir, so that the pharma company could go for the next phase of trials, regulatory approvals and mass production of these anti-viral drugs.

Dr. Chandrasekhar had then explained that scientists had narrowed down 15 compounds which had passed toxicology reports for making anti-viral drugs and the above mentioned belong to that category of drugs discovered in the last few years. But they were halted after clinical trials due to lack of demand.

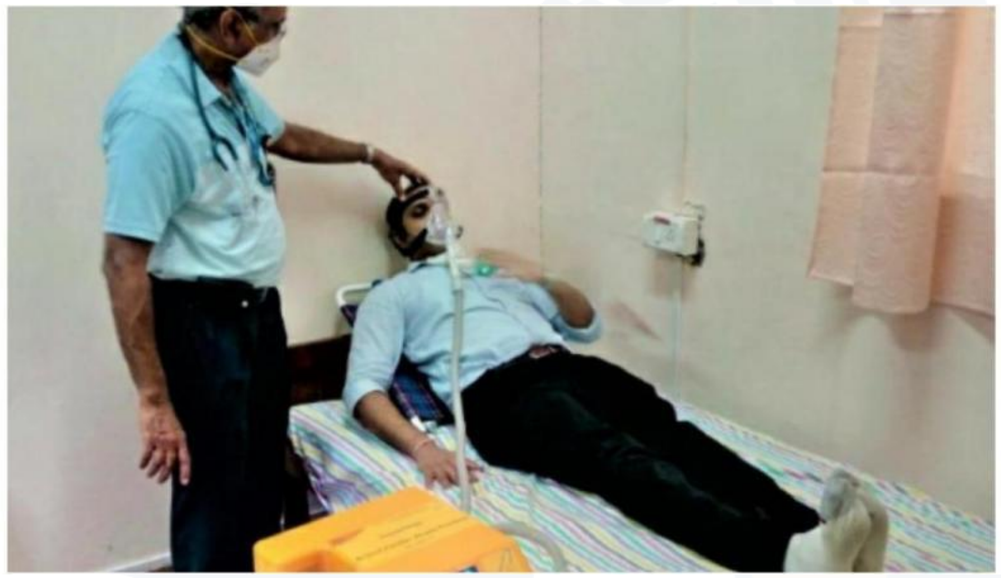
The CSIR-IICT modern Kilo Lab has been utilised by the scientists to develop the APIs and a small portion is given to the drug firm to follow up with its bio-equivalence testing.

Published in:
The Hindu

Clinical trial of non-invasive ventilator SwasthVayu to start soon: NAL

CSIR-NAL

24th July, 2020



CSIR NAL Swasthvayu trials under the supervision of Dr Amarnarayan, CMO CSIR NAL. (FILE PHOTO)

The National Aerospace Laboratories (NAL) on Thursday said it would soon start human clinical trial of its indigenously developed non-invasive ventilator "SwasthVayu" to treat COVID-19 patients.

The trial of the first Made in India non-invasive ventilator would begin at the Manipal Hospital, which also collaborated in its development in 'record' 36 days, the NAL said in a statement here. The device can be used for COVID patients and also support those suffering from other respiratory disorders and heart failure, it said. NAL had in May last announced the development of the ventilator which was simple to use without any specialised nursing and cost effective, compact and configured with majority of indigenous components. Since then it had been tested on artificial lung models with successful results, the institute said. SwastVayu was developed by the NAL, a part of the Council of Scientific and Industrial Research (CSIR), in scientific and medical knowledge collaboration with Dr Satyanarayana Mysore, head of the Pulmonology Respiratory and Sleep Medicine at Manipal Hospital, and Dr Anurag Agarwal, Director of CSIR-Institute of Genomics and Integrative Biology (IGIB).

"The Ethics Committee, and the scientific committee at Manipal Hospital, Bengaluru has scrutinized and approved the device for clinical trials under Dr Satyanarayana, Head of Pulmonology and Sleep Medicine as the Principal Investigator," the statement said. It added that there was a compelling need for indigenous ventilators to mitigate the acute shortage of ventilators. The statement quoted Dr Satyanarayana as saying that the device will also be a bonanza post-pandemic for treating sleep-disordered breathing including

obstructive sleep apnea and other sleep apnea. The clinical trial will begin shortly and for now, the focus will be limited to its successful completion, he said. Chief scientist and Head Electronics Division of NAL Dr C M Ananda said the device had been subjected to trials on artificial lung models and has successfully passed stringent electrical safety, performance, calibration, bio-compatibility tests at National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited laboratory.

According to the NAL, SwasthVayu is equipped with advanced features like Bi-level mode (BiPAP), Continuous Positive Airway Mode (CPAP), Spontaneous modes and 3D printed HEPA-T filter adapter connected directly to the non-ventilated mask.

Published in:
Indian Express

Cipla all set to launch Favipiravir drug for treatment of COVID patients: CSIR

CSIR-IICT

23rd July, 2020

Pharmaceutical firm Cipla is all set to launch Favipiravir, developed by the Council of Scientific and Industrial Research (CSIR) in a cost-effective process, for the treatment of COVID-19 patients, according to an official statement on Thursday. An off-patent anti-viral drug, Favipiravir, originally discovered by Fuji Pharma in Japan, has shown promise in clinical trials for the treatment of COVID-19 patients, especially in mild and moderate cases. CSIR-Indian Institute of Chemical Technology (CSIR-IICT) developed a cost-effective process using locally available chemicals to synthesize this Active Pharmaceutical Ingredient (API) and transferred the technology to Cipla.

"Cipla has scaled up the process in their manufacturing facility and approached DCGI (Drug Controller General of India) for permission to launch the product in India. Given that DCGI has given restricted emergency use for Favipiravir in the country, Cipla is now all set to launch the product to help patients suffering from COVID-19," the statement said. Commenting on the development, Director of CSIR-IICR S Chandrashekhar said the technology is very efficient and makes it affordable and allows Cipla to make large quantities of the product within a short span of time.

CSIR Director General Shekhar C Mande observed that they are working with the industry in developing quick solutions and products for mitigation of COVID-19 and this partnership with Cipla is an example of how CSIR is committed to bringing repurposed drugs soon.

Published in:
Indian Express

Oxford Covid-19 vaccine promising, produces both antibody, say scientists

CSIR-IICB

21st July, 2020

The coronavirus vaccine developed by Oxford University and AstraZeneca shows promise as it can generate both antibodies and cell-mediated immune responses, say several scientists in India and abroad, while cautioning that there is still a long way to go. “Very promising”, “comforting” and “interesting” were some of the reactions from the scientific community a day aer The Lancet revealed the vaccine appears safe and induces a strong immune response following the first phase of human trials. Doses of the vaccine were given to 1,077 healthy With scientists and researchers across the world racing to develop a vaccine against the disease that has infected more that 14.7 million people across the world and claimed more than 6,00,000 lives, the Oxford-AstraZeneca results are being examined closely. It is “ideal" that the vaccine is able to generate both humoral and cell mediated immunity, virologist Upasana Ray told PTI. Humoral immunity is the production of antibodies by the body's B cells. While antibodies make up the protein component of the immune system, T cells offer vital cell-mediated immunity, she explained. Ray, senior scientist at Kolkata’s CSIR-Indian Institute of Chemical Biology (CSIR-IICB), added that both components are essential to provide effective immunological memory and also for long-term protection. "The preliminary findings look very promising with responses to the vaccine similar to what is seen post natural infection," added Beate Kampmann, professor of paediatric infection & immunity and director of The Vaccine Centre, London School of Hygiene and Tropical Medicine individuals,” Kampmann said in a statement. "Trial participants developed the all-important neutralising antibodies, in most cases aer one shot, and in all cases aer two shots," noted Ian Jones, professor of Virology at the University

of Reading in the UK. Satyajit Rath, an immunologist from the National Institute of Immunology in New Delhi, found it interesting and promising that the boost with the same vaccine candidate tended to increase antibody levels further despite pre-existing antibodies. "The vaccine candidate shows no unexpected awful adverse effects," Rath told PTI, adding that the formal addition of paracetamol showing some relief from adverse effects without modifying immune responses is useful information too. Commenting on the side effects of headache and fatigue reported by the participants in the study, experts said they are not a major concern and commonly observed in vaccines. "Such side effects have been seen in other vaccines as well and these subside in a few days' time. So, as of now, I don't see these as major points of concern," Ray said. The results show the desired and expected effects in terms of the immune response and "does not have serious adverse effects seen in the numbers recruited so far", said Stephen Evans, professor of pharmacoepidemiology at the London School of Hygiene and Tropical Medicine in the UK. While the study showed there was an immune response generated by the vaccine, scientists cautioned that direct evidence showing whether or not it would prevent or reduce actual novel coronavirus infection has not been documented yet. "Generating immune response and providing immunological protection might not always run parallel," Ray said. "Hence, long term population-based studies where vaccinated people could be monitored for future infection/outbreak are important," the CSIR-IICB virologist added. Pointing to the way forward, she said there should be elaborate trials in geographical locations where severities and mortality of Covid-19 are currently high. "We do not know yet if the currently observed levels are enough to protect against infection. The study needs to be run longer," Ray said. Rath agreed. "Data that T cell responses are occurring too are expected but still comforting to have, although they provide as yet no information about whether they are functionally relevant for providing protection," he said. "It is a comforting study in that there are no unpleasant surprises, and it allows this vaccine candidate to move on to actual efficacy trials," the immunologist noted. Vaccine development is a multi-phase process. Phase 1 trials are small-scale, usually involving few participants, to assess whether the vaccine is safe for humans. Phase 2 trials oen involve several hundred subjects, and mainly evaluate the efficacy. The final phase involves thousands of people to further assess the efficacy of the vaccine over a defined period of time, and can last several months.

Published in:

Deccan Herald

Airborne transmission of Covid possible, wear masks in enclosed spaces: CSIR

CSIR

21st July, 2020

Amid recent acknowledgement from the World Health Organisation (WHO) over emerging evidence of airborne spread of the novel coronavirus, the head of India's premier R&D body has said that airborne transmission of SARS-CoV-2 is indeed a "distinct possibility" and suggested wearing masks even in "enclosed" spaces. Council of Scientific & Industrial Research (CSIR) chief Shekhar C Mande sought to bring clarity on the issue in his blog post referring to findings of various studies and said, "All these emerging evidences and arguments suggest that indeed airborne transmission of SARS-CoV-2 is a distinct possibility." Elaborating on how one can keep oneself safe in such a scenario, Mande wrote: "The answers are intuitively very straightforward – avoid large crowded gatherings, keep enclosed places like workplaces well ventilated, and most importantly, continue wearing masks even in enclosed spaces." Indication from the WHO had come after 239 scientists from 32 countries through an open letter urged the global health body and other scientific organisations early this month to look at the issue. He said wearing masks appears to be the most effective strategy, and possibly mandatory for all to follow. Attempting to respond to the debate whether the transmission is airborne or not, Mande said even while the debate on whether infected surfaces are a source of infection rages on, the primary route of infection can be understood to be through inhalation. "It is well known that when people sneeze or cough, they release droplets in the air... The larger droplets readily settle on surfaces, whereas smaller droplets or the droplet nuclei remain suspended in atmosphere for a longer duration. The larger droplets formed by an infected individual during coughing, sneezing, talking or singing therefore do not travel far.

They settle down quickly. However, the smaller droplets can remain suspended in air for a considerable duration," said Mande. The earlier social distancing measures and other precautions suggested by WHO and others are based on the understanding that the SARS-CoV-2 transmission is mainly through larger droplets, which settle on surfaces. Appealing to medical community to recognize the potential of airborne spread of COVID-19, the 239 scientists in their open letter wrote: "There is significant potential for inhalation exposure to viruses in microscopic respiratory droplets (microdroplets) at short to medium distances (up to several meters, or room scale), and we are advocating for the use of preventive measures to mitigate this route of airborne transmission."

Published in:
The Times of India

CSIR-CSIO

21st July, 2020

इनोवेशन • सीएसआईआर-सीएसआईओ के वैज्ञानिकों ने तैयार की नई तकनीक, कोरोना वायरस से बचाने में मददगार

नोट, फाइल और पर्स पर भी नहीं रहेगा कोरोना वायरस का डर

ननु जोगिंदर सिंह | चंडीगढ़

भारत और इसके जैसे विकासशील देशो में नोट (करंसी) कोविड-19 के प्रसार का कारण बन सकते हैं। डब्ल्यूएचओ का बहुत समय पहले दिया गया ये बयान बेशक आम आदमी के लिए डराने वाला था, लेकिन वैज्ञानिकों के लिए यह चुनौती था। इसी चुनौती से निपटने के लिए मार्च में काम शुरू हुआ और नोटों के लिए बनाई गई 'सुरक्षा'।

एक चैंबर जिसमें किसी भी तरह के वायरस या बैक्टीरिया का डर नहीं रहेगा। अब तक बाजार में यूवी और यूवी सी आधारित बल्ब आदि आ रहे हैं, लेकिन ये सिर्फ सरफेस के लिए कारगर हैं। इस चैंबर सुरक्षा में यूवी के साथ-साथ इंटीग्रेटेड टेंपरेचर का

• यूवी सी के साथ ही इंटीग्रेटेड टेंपरेचर का प्रावधान 'सुरक्षा' में

भी प्रावधान है, ताकि तुड़े-मुड़े नोट और पेजेज में भी कोई खतरा न रहे। सीएसआईआर-सीएसआईओ के वैज्ञानिक डॉ. आकाशदीप, डॉ. संजीव भारद्वाज, डॉ. प्रवीन कुमार और डॉ. सुनीता मिश्रा ने इसे तैयार किया है। इसकी टेक्नोलॉजी ट्रांसफर कर दी गई है। टेक्नोलॉजी के आधार पर अंबाला बेस कंपनी ने प्रोडक्शन भी शुरू कर दिया है। डॉ. आकाशदीप बताते हैं कि अल्ट्रावायलेट सी लाइट के जरिए माइक्रोऑर्गेनिज्म जिसमें सार्स और मर्स (कोरोनावायरस का कारक) खत्म हो सकते हैं। ये रेडिएशन जेनेटिक स्ट्रक्चर को तोड़ती है और इसको बढ़ने से रोकती है। हाल ही में वैश्विक स्तर पर कई स्टडीज आई हैं, जिनके अनुसार हीट ट्रीटमेंट भी इस पर प्रभावी है। सेंटर फॉर डिसीज कंट्रोल एंड प्रिवेंशन (सीडीसी) युनाइटेड स्टेट्स के कॉमन प्रोटोकॉल में वायरस को एक घंटे तक 60 डिग्री पर डी-एक्टीवेट माना जाता है। सीएसआईओ के टेक्नोलॉजी ट्रांसफर सेल के इंचार्ज डॉ. सुरेंद्र सैनी ने बताया कि टेक्नोलॉजी काफी समय पहले ट्रांसफर कर दी गई थी, लेकिन लॉकडाउन पीरियड में प्रोडक्शन आसान नहीं था।

• इन्होंने टेक्नोलॉजी की है तैयार...

डॉ. सुनीता मिश्रा, डॉ. प्रवीन, डॉ. आकाशदीप।

डॉ. संजीव भारद्वाज

• रिसर्च में ये... डॉ. आकाशदीप ने कहा कि हाल की रिसर्च रिपोर्ट्स है कि 56 डिग्री पर 30 मिनट में, 40 डिग्री पर 60 मिनट और 92 डिग्री सेल्सियस पर 15 मिनट में कोरोनावायरस मर जाता है। 70 डिग्री सेल्सियस पर सार्स सीओवी-2 को जल्द खत्म किया जा सकता है, इसलिए उन्होंने यूवी-सी लाइट के साथ हीट ट्रीटमेंट भी रखा। इसमें बैंक नोट, सिक्के, मास्क, स्टेशनरी, चाबियां, वॉलेट आदि सेनेटाइज हो सकते हैं। इसमें सिर्फ 'यूवीसी' और 'हीट प्लस यूवीसी' दोनों फीचर्स का अलग-अलग इस्तेमाल किया जा सकता है।

• मोबाइल भी हो सकता है सेनेटाइज... हीट कंबाइंड ट्रीटमेंट बॉक्स में सेलफोन आदि जैसी चीजें जो गर्मी में खराब हो जाती हैं, उन्हें 5 से 10 मिनट सिर्फ यूवीसी में रखकर सेनेटाइज किया जा सकता है और नोट और स्टेशनरी को हीटेड बॉक्स में। बड़ी फाइलों और काफी फोल्ड वाली चीजों को कुछ समय यूवीसी के बाद हीट में लंबा समय रखकर सेनेटाइज किया जा सकता है। इसमें टाइमर की सुविधा भी है। सीएसआईओ ने इसके कई वेरिएंट तैयार किए हैं, जिसमें पोर्टेबल चैंबर है। इसकी कीमत करीब 3500 रुपए रहेगी। इसमें करंसी, पर्स, कॉइन, स्टेशनरी आदि डीकंटेगिनेट कर सकते हैं। माकक्रोवेव के साइज का चैंबर जिसमें मार्केट से लाए पैकेज्ड फूड को सेनेटाइज कर सकते हैं। ये सिर्फ 5500 रुपए में उपलब्ध होगा।

epaper.bhaskar.com July 21, 2020

Published in:
Dainik Bhaskar

Telangana Pollution Control Board orders firm to clean up chromium landfill site

CSIR-NGRI

3rd July, 2020

The Telangana Pollution Control Board (TSPCB) has issued directions to Vishu Chemicals, located at Gaddapotharam in the city outskirts, to clear the hazardous waste causing pollution. The landfill where the industry dumps its waste is reported to contain over two lakh tonnes of chromium lying around. Vishnu Chemicals is a manufacturer of basic chromium sulphate, sodium di-chromate and yellow sodim sulphate. In 1999, the industry had obtained permission to process sludge at Gaddipotharam, which is located around 500 metres from the factory premises, for secured storage after treatment. In 2009, the industry had submitted an action plan for capping and closure of the existing landfill at Gaddipotharam. The industry has now been asked to transfer all hazardous waste from the sire to the centralised treatment storage and disposal facility (TSDF). In 2018, the National Geophysical Research Institute (NGRI) had carried out a study and given recommendations to control seepage collection in the sump. The pollution board had also issued directions to the industries association in Kazipally and Gaddipotharam to control seepage, however, nothing has been done on the ground. Despite repeated assurances, no action has been taken which has endangered the lives of those residing around the site. Following a complaint by P Damodar Reddy to the pollution board's task force, the PCB has now ordered the immediate shifting of entire chemical sludge to TSDF. "Presently, the chemical dump has more than two lakh tonnes of waste," Reddy said in his complaint. In its latest order on June 30, the TSPCB said: "The industry shall lift the hazardous waste stored in the secured off-site landfill to TSDF. The industry shall furnish action plant with specific timelines to lift the hazardous waste to

TSDF in 15 days." Locals have also demanded that Vishnu Chemicals move the chromium waste from the site in order to prevent health complications.

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