COVID-19 BULLETIN

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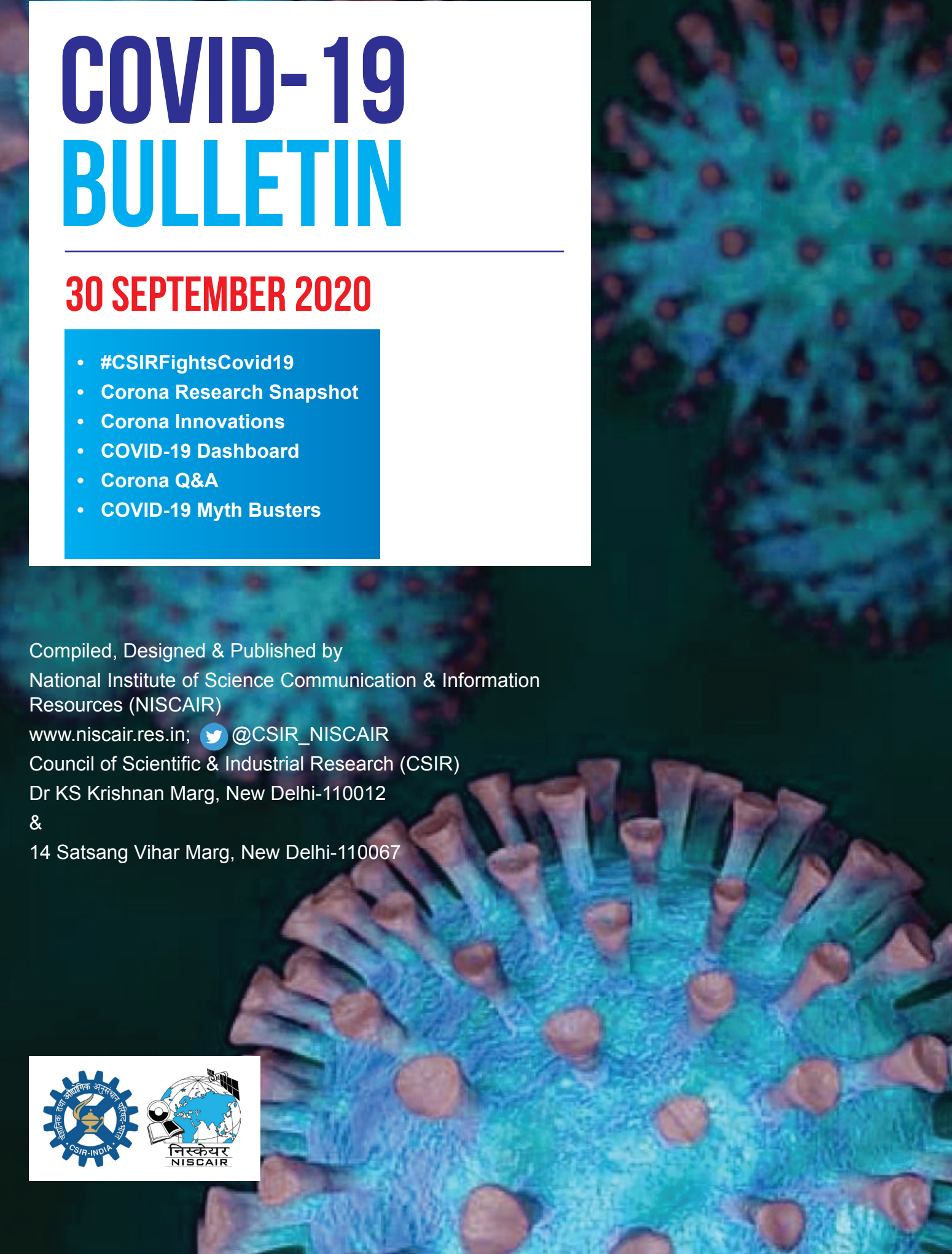


#CSIRFightsCovid19

Ever since the Coronavirus pandemic broke out, CSIR has mounted a strategic, well-coordinated and integrated approach towards mitigating the Coronavirus outbreak ranging from containing the spread of the virus by providing sanitisation and disinfection solutions to equipping the frontline workers and health warriors with protective gear, and from exploring repurposing of existing drugs to discovering new drugs and vaccines. Here are some major developments this week.

India's first CRISPR COVID-19 test developed by CSIR gets approval

In the first week of April, CSIR announced a breakthrough in its war against the devastating coronavirus. CSIR's Institute of Genomics and Integrative Biology (CSIR-IGIB) developed a low-cost diagnostic paper-based kit that could accurately test COVID-19 samples. In a major development recently, the diagnostic kit, which is to be deployed by Tata Sons, received approval from the Drugs Controller General of India (DCGI) for commercial launch as per ICMR guidelines.

The CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)

test meets high quality benchmarks with 96% sensitivity and 98% specificity for detecting the novel coronavirus. This marks a significant achievement for the Indian scientific community, moving from R&D to a high-accuracy, scalable and reliable test in less than 100 days. The 'Made in India' test achieves accuracy levels of traditional RT-PCR tests, with quicker turnaround time, less expensive equipment, and better ease of use. Besides, CRISPR is a futuristic technology that can also be configured for detection of multiple other pathogens in the future.

The paper-based diagnostic test kit, which is similar to a pregnancy test strip, has been developed by a young research team led by Dr Debojyoti Chakraborty and Dr Souvik Maiti from the CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB).

➲ CSIR & Mylan partnership to identify therapeutic options for COVID-19 Management

CSIR-Indian Institute of Chemical Technology (CSIR-IICT) and Mylan Laboratories Limited have announced a partnership to address unmet patient needs and collaborate to identify potential therapies for COVID-19.

The collaboration will involve a series of clinical trials. Mylan is a global pharmaceutical company with a vast industry experience in clinical trials and commercialization. The first of the clinical trial to be rolled out is a multiple-arm phase 3 study that will be conducted in adult patients with mild to moderate COVID-19 at risk of complications.

The application for the clinical trials has been submitted to the Drugs Controller General of India (DCGI) for regulatory approval. CSIR has appointed Dr Ram Vishwakarma, Honorary Advisor to DG-CSIR and former Director, CSIR-IIIM (Indian Institute of Integrative Medicine) as a mentor to lead this collaboration.

➲ CSIR scientists find viral strain circulating in India has 70% similarity with major strain around the world

Scientists of the CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB), Hyderabad, who have analysed more than 2000 genomes of the novel SARS-CoV-2 virus, have found that the clade or genetic group circulating in India has 70% similarity with the major strain around the world. The similarity in viral genome globally means a vaccine or a drug targeting the mutation in A2a clade will work with the same effectiveness all over the world.

Viruses have different clades which need different vaccines or drugs to target them. If the clade is common, then one vaccine or drug is sufficient to fight it.

CSIR-CCMB scientists have found that the clade that is now dominant in India is A2a, which has a similarity with 70% of genomes studied worldwide. The earlier dominant clade in India, A3i, has waned, resulting in the increase of A2a genetic group of the pandemic virus. The CCMB study says there is no evidence to state that this mutation is clinically a more difficult one. No clade at present has been conclusively shown to be associated with a more severe form of Covid-19 or an increased risk of death.

The findings of the study, carried out with scientists from CSIR-Institute of Genomics and Integrative Biology as collaborators, are now peer-reviewed and published in the journal *Open Forum Infectious Diseases* published by the Oxford University Press.

CSIR-IICT working on new antiviral drugs for COVID-19

The Hyderabad-based CSIR-Indian Institute of Chemical Technology (IICT), which earlier delivered the process to manufacture Favipiravir and Remdesivir drugs for COVID-19 management, has now announced that it is working on new antiviral drugs to tackle COVID-19. CSIR-IICT was one of the first indigenous labs to scour existing antivirals and come up successfully with vital Active Pharma Ingredients (APIs), which were then supplied to Indian companies for making affordable drugs. The Institute is also working on corticosteroids which have become very essential in corona management for moderate and severe patients.

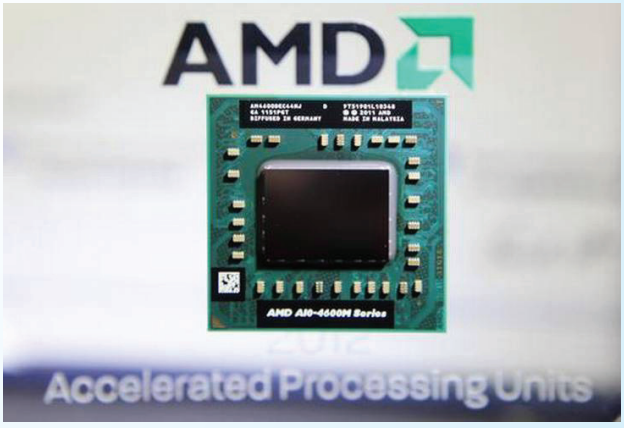
Make-shift hospitals for Himachal based on CSIR technology

Make-shift hospital developed by CSIR at Ghaziabad

The Himachal government has decided to set up makeshift Covid hospitals across the state with the help of the Council of Scientific and Industrial Research (CSIR). The hospitals will come up in Shimla, Tanda, Nahan, Nalagarh and Una. The makeshift hospitals will have 50 beds and will be equipped with all facilities required to manage the symptoms of severely and moderately ill Covid patients.

CSIR's constituent laboratories, CSIR-Central Building Research Institute (CSIR-CBRI), Roorkee and CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai have the desired expertise and can undertake the work of transforming existing schools into makeshift hospitals, and also set up on-site modular 2- to 4-bed transit hospital facilities as immediate measures. The laboratories also have expertise in setting up pre-engineered buildings by way of short-term measures.

CSIR-FPI to get AMD computing support for COVID-19 research



CSIR-Fourth Paradigm Institute is set to receive high-performance technology contributions from the chip-maker AMD as part of the fight against the Covid-19 pandemic. The CSIR-FPI is among several global institutes, including Stanford School of Medicine, to get this assistance from AMD.

AMD is contributing high-end computing systems or access to Penguin-On-Demand (POD) cloud-based clusters powered by second generation AMD EPYC and AMD Radeon Instinct processors to 21 institutions

and research facilities conducting COVID-19 research. This will augment CSIR-FPI's capacity as the leading research and development organisation in the country to provide world class high performance computational facilities to the research community. The centralised facility will offer secure computational access to researchers and academicians working to tackle Covid-related challenges across varied disciplines including biological sciences for vaccine discovery, chemical sciences for drug testing, and engineering to provide effective time bound solutions.

CSIR-IGIB and Ayush Ministry to study potential of Vasa Guduchi in management of COVID-19

The Ministry of AYUSH has approved a proposal for carrying out a clinical study to assess the role of Vasa and Guduchi in therapeutic management of symptoms in COVID-19 positive patients. The randomized, open label three-armed study will be conducted at the All India Institute of Ayurveda (AIIA), New Delhi, in collaboration with the CSIR-IGIB.

Vasa and Guduchi are time-tested herbs in Indian healthcare traditions, used in a variety of disease conditions.

The study would look into the efficacy/ action of mono-herbal formulations of whole extracts of Vasa and Guduchi respectively, and polyherbal formulation of Vasa-Guduchi whole extract on therapeutic management of SARS-CoV-2 positive asymptomatic and/or mild COVID-19 symptomatic cases. The project will also assess the impact of the formulations on the speed of viral replication.

Courtesy: Wikipedia

CSIR
Media Coverage

मटा अँकर पहिले फायटो फार्मास्युटिकल; ऑक्टोबरमध्ये चाचण्यांचे निष्कर्ष येणार

'वासनवेल'कडे विज्ञान जगताचे लक्ष

मयुरेश प्रभुणे, पुणे

करोना संसर्गावरील उपचारासाठी वनस्पतीचा समावेश असलेले (फायटो फार्मास्युटिकल) 'एक्यूसीएच' हे देशातील पहिले औषध लवकरच उपलब्ध होऊ शकते. केंद्र सरकारचा जैवतंत्रज्ञान विभाग (डीबीटी), वैज्ञानिक आणि औद्योगिक विकास परिषद (सीएसआयआर) आणि सन फार्मास्युटिकल्स यांच्या एकत्रित प्रयत्नांतून 'वासनवेल' या वनस्पतीपासून हे औषध विकसित करण्यात आले आहे. डेंगीवरील उपचारांसाठी विकसित करण्यात आलेले 'एक्यूसीएच' हे औषध करोना विषाणूसह अनेक प्रकारच्या विषाणू संसर्गावर प्रभावी ठरत असल्याचे प्रयोगांमध्ये आढळून आले आहे.

विषाणूरोधी गुणधर्म

वासनवेल किंवा पातालगरुडी (शास्त्रीय नाव-कोक्युलस हिर्सुटस) या वनस्पतीची वेल देशाच्या बहुतांश भागांमध्ये पावसाळ्यात येते. काही ठिकाणी ती बारमाही उपलब्ध असते. या वनस्पतीच्या पानांमध्ये आणि मूळांमध्ये औषधी गुणधर्म असतात. डोकेदुखी, डोळ्यांची साथ, दातदुखी, पोटदुखी, अतिसार, त्वचेचे रोग अशा विविध आजारांवर उपचारांसाठी परंपरागत या वनस्पतीचा वापर केला जातो. सनफार्माने वासनवेलच्या अर्कापासून तयार केलेल्या 'एक्यूसीएच' या औषधामुळे डेंगी, करोनासह विविध विषाणूंचा संसर्ग कमी होत असल्याचे प्रयोगशाळेत सिद्ध झाले आहे.

'एक्यूसीएच'च्या पहिल्या टप्प्यातील चाचण्या (मानवी सुरक्षा आणि लहान प्राण्यांचा समावेश असलेल्या) यशस्वीरीत्या पार पडल्या असून, जूनपासून या औषधाच्या 'कोव्हिड १९'च्या रुग्णांवर दुसऱ्या टप्प्यातील चाचण्या सुरू आहेत. या चाचण्यांचे निष्कर्ष ऑक्टोबरमध्ये येणे अपेक्षित आहेत. दुसऱ्या टप्प्यातील चाचण्यांचे निष्कर्ष आश्वासक असल्यास, तातडीची गरज म्हणून हे औषध करोनाच्या रुग्णांसाठी त्वरित उपलब्ध होऊ शकते. नाहीतर, औषधाची पुरेशी चाचपणी करण्यासाठी चाचण्यांचा तिसरा टप्पा सुरू होऊ शकतो.

याबाबत 'मटा'शी बोलताना 'सीएसआयआर'चे महासंचालक डॉ. शेखर मांडे म्हणाले, 'एक्यूसीएचच्या दुसऱ्या टप्प्यातील चाचण्या सन फार्मासोबत पार पडत आहेत. देशभरातील १२ केंद्रांमधील २१० रुग्णांवर या चाचण्या करण्यात येत आहेत. लवकरच चाचण्यांचे निष्कर्ष अपेक्षित असून, निष्कर्ष अपेक्षेप्रमाणे आल्यास कोव्हिडवरील उपचारांसाठी 'एक्यूसीएच' हे देशातील पहिले फायटो फार्मास्युटिकल ठरेल.'

'एक्यूसीएचच्या वैद्यकीय चाचण्यांना औषध नियंत्रण महासंचालनालयाने (डीसीजीआय) परवानगी दिली ही बाबही ऐतिहासिक आहे. कोव्हिड उपचारांमध्ये एक्यूसीएचचा वापर प्रभावी सिद्ध झाल्यास भारताच्या पारंपरिक ज्ञानाला जगात प्रतिष्ठा मिळेल. देशातील औषध निर्माण क्षेत्रासाठीही नव्या संधी तयार होतील,' असेही डॉ. मांडे म्हणाले.

मटा अँकर सीएसआयआर आणि 'कॅडिला'च्या 'सेप्सिव्हॅक' औषधाच्या चाचण्यांचे निष्कर्ष आश्वासक

लशीआधी करोनावर येणार भारतीय औषध?

मटा विशेष

मयुरेश प्रभुणे, पुणे

करोनावरील लस कधी उपलब्ध होणार याबाबत अनिश्चितता असताना, भारतीय शास्त्रज्ञांनी विकसित केलेले औषध लशीआधीच उपलब्ध होण्याची शक्यता निर्माण झाली आहे. औद्योगिक आणि वैज्ञानिक संशोधन परिषद (सीएसआयआर) आणि 'कॅडिला फार्मास्युटिकल्स' यांनी विकसित केलेल्या 'सेप्सिव्हॅक' या बाजारात उपलब्ध असणाऱ्या औषधाच्या तीन वेगवेगळ्या समूहांवर चाचण्या होत असून, त्यांपैकी करोनाच्या चिंताजनक रुग्णांवरील उपचारांत हे औषध प्रभावी ठरल्याचे दिसून आले आहे.

औषध आणि लस म्हणून प्रभावी

सेप्सिव्हॅक या औषधामध्ये मायकोबॅक्टेरियम इंडिकस प्रानी या जिवाणूचा वापर करण्यात आला असून, १९७०च्या दशकात डॉ. गुरुशरण प्राण तलवार यांनी त्याचा शोध लावला होता. या जिवाणूचा उपयोग लेप्रोसीविरोधातील लस तयार करण्यात आणि क्षयरोगावरील उपचारांतही करण्यात आला. हा जिवाणू मानवी शरीरासाठी घातक नसून, त्याच्या शरीरातील प्रवेशासोबत प्रतिकारशक्ती सक्रिय होत असल्याचे दिसून आले आहे.

> करोनावरील कोणतीही लस बाजारात उपलब्ध होण्याआधी 'सेप्सिव्हॅक' हे औषध करोनामुळे होणारी जीवितहानी टाळण्यासाठी नक्की उपयुक्त ठरील, असा विश्वास वाटतो.
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> - डॉ. शेखर मांडे, 'सीएसआयआर'चे महासंचालक

सीएसआयआरचे महासंचालक डॉ. शेखर मांडे यांनी 'महाराष्ट्र टाइम्स'ला ही माहिती दिली. 'सेप्सिव्हॅक' हे औषध सेप्सिससाठी म्हणजेच घातक विषाणूंच्या संसर्गानंतर गंभीर आजारी झालेल्या रुग्णांवर उपचारांसाठी वापरण्यात येते. करोनाबाधित रुग्णांवर या औषधाच्या सर्व चाचण्या यशस्वी ठरल्यास उपचारांप्रमाणेच कोव्हिड-१९ संसर्ग रोखण्यासाठीही ते उपयुक्त ठरू शकेल, अशी आशा डॉ. मांडे यांनी व्यक्त केली.

'औषध नियंत्रण महासंचालनालयाने (डीसीजीआय) 'सीएसआयआर' आणि कॅडिला फार्मास्युटिकल्सला 'सेप्सिव्हॅक'च्या तीन समूहांवरील चाचण्यांसाठी एप्रिलमध्ये परवानगी दिली होती. त्यानुसार व्हेंटिलेटरवर असणाऱ्या आणि मध्यम ते कमी प्रमाणात संसर्ग असणाऱ्या रुग्णांना 'सेप्सिव्हॅक' औषध म्हणून, तर संसर्गाचा सर्वाधिक धोका असणाऱ्या आरोग्य कर्मचाऱ्यांना ते लशीप्रमाणे देण्यात आले. त्यांपैकी व्हेंटिलेटरवर असणाऱ्या ४२ जणांच्या चाचण्यांचे निष्कर्ष हाती आले असून, ते आश्वासक आहेत,' असे डॉ. मांडे यांनी सांगितले. चाचणी करण्यात आलेल्या रुग्णांपैकी काहींना असलेला मृत्यूचा धोका सेप्सिव्हॅकमुळे टळला आणि अनेक रुग्णांची कृत्रिम ऑक्सिजनची गरजही कमी झाली, असेही त्यांनी नमूद केले.

'इतर दोन समूहांवरील चाचण्यांचे निष्कर्ष येत्या महिनाभरात अपेक्षित असून, तेही यशस्वी ठरल्यास सेप्सिव्हॅक हे करोनावर औषध म्हणून; तसेच प्रतिकारशक्ती वर्धक म्हणून अधिकृतपणे देता येईल,' असे डॉ. मांडे यांनी सांगितले.

'IICT is now working on a new antiviral drug for COVID-19'

Focus also on corticosteroids for virus management in moderate, severe patients

V. GEETANATH
HYDERABAD

CSIR-Indian Institute of Chemical Technology (IICT) has been one of the first indigenous labs to gear up to combat COVID-19 by scouring existing antivirals to treat the infection and has been successful in providing the vital Active Pharma Ingredient (API) to Indian companies for making affordable drugs. The institute is working on a few more APIs to tackle the novel coronavirus and other diseases. In this interview, IICT Director S. Chandrashekar explains what goes into drug discovery and other related issues.

Why is it difficult to come out with a precise drug for a virus like COVID-19 despite having the advantage of modern technology and benefits of advanced research facilities?

Precise drug discovery for any disease including cancer, metabolic and infectious diseases and others, always need 8-12 years with at least US$1-2 billion investment. For bacterial and viral infections, the challenges are mutations and resistance. Hence, we will need better planning while taking up discovery projects in this area.

Other than Favipiravir and Remideswir, what other antivirals are our labs and those abroad working on to combat COVID-19?

There are several small molecules, both repurposing and new chemical entities or NCEs, which are being pursued globally. One of the frontrunners is the molecule discovered in Emory University in the United States called 'Eidd' or the Emory Institute of Drug Discovery, which the multinational, Merck, is pursuing to take it forward.

> For bacterial and viral infections, the challenges are mutations and resistance. Hence, we will need better planning while taking up discovery projects in this area

What has been the progress of other anti-coronavirus technologies which IICT has been working on?

We are continuing to work on corona mitigation projects. We have already delivered the process to Favipiravir and Remdesivir drugs; the three layer mask for non-hospital common purposes. We are also working on corticosteroids which have become very essential in coronavirus management for moderate and severe patients.

How has the IICT helped in agriculture operations this year like honey traps?

We are delivering the traps to a few districts in Telangana as part of the Haritha programme of CSIR. We are willing to work with the State governments to provide as many traps and lures as they require assuring of the best quality in very short time. Our engineering colleagues are also working with vegetable and fruit markets to see how best the waste could be recycled for organic manure, power generation, cooking gas and so on in association with the Agriculture department.

Hindustan Times বাংলা

'রহস্য' সমাধানে লাগবে না বেশি সময়। 'ফি'-ও কম। শুধু 'তদন্ত' শুরুর আগে প্রয়োজন ছিল অনুমোদন। বাণিজ্যিকভাবে 'তদন্ত' শুরুর জন্য শনিবার ড্রাগ কন্ট্রোলার জেনারেল অফ ইন্ডিয়ার (ডিসিজিআই) অনুমোদনও পেয়ে গেল 'ফেলুদা'।

শনিবার কাউন্সিল অফ সায়েন্টিফিক অ্যান্ড ইন্ডাস্ট্রিয়াল রিসার্চ (সিএসআইআর) জানিয়েছে, দেশীয় প্রযুক্তিতে করোনা পরীক্ষার কিট বাণিজ্যিকভাবে আত্মপ্রকাশের ছাড়পত্র পেয়েছে। যা ভারতের প্রথম ক্লাস্টার্ড রেগুলারলি ইন্টারস্পেসড শর্ট প্যালিনড্রোমিক রিপিট করোনাভাইরাস পরীক্ষা (সিআরআইএসপিআর)। সেই প্রযুক্তি যৌথভাবে তৈরি করেছে টাটা গ্রুপ এবং বিজ্ঞান ও প্রযুক্তি মন্ত্রকের অধীনস্থ ইনস্টিটিউট অব জেনোমিক্স অ্যান্ড ইন্টিগ্রেটিভ বায়োলজি।

বিজ্ঞান ও প্রযুক্তি মন্ত্রকের তরফে বিবৃতিতে জানানো হয়েছে, ভারতের বৈজ্ঞানিকদের জন্য এটা উল্লেখ্যযোগ্য কৃতিত্ব। ইন্ডিয়ান কাউন্সিল অফ মেডিক্যাল রিসার্চের (আইসিএমআর) নির্দেশিকা মোতাবেক তাতে ৯৬ শতাংশ সংবেদনশীলতা আছে। একইসঙ্গে ৯৮ শতাংশ ক্ষেত্রে নির্দিষ্টভাবে করোনা চিহ্নিত করবে সেই প্রযুক্তি। শুধু তাই নয়, ১০০ দিনেরও কম সময়ে নিজস্ব প্রযুক্তিসম্পন্ন সেই

Hindustan Times বাংলা

'ফি' কম, করোনা 'রহস্য' সমাধানেও কম সময় নেবে 'ফেলুদা'! (ছবিটি প্রতীকী, সৌজন্য রয়টার্স)

'ফি' কম, করোনা 'রহস্য' সমাধানেও কম সময় নেবে 'ফেলুদা'!

12:12 PM IST

লেখক Ayan Das

- সেই দিশা দেখিয়েছেন দুই বাঙালি বিজ্ঞানী দেবজ্যোতি চক্রবর্তী এবং সৌভিক মাইতি।

CSIR Media Coverage

मिलकर लड़ेंगे कोरोना से

राहत...अब ज्यादा घातक नहीं रहा कोरोना, वायरस के 10 में से आठ स्वरूप गायब

परीक्षित निर्भय

नई दिल्ली। कोरोना वायरस को लेकर देश के वैज्ञानिकों ने एक बड़ा दावा किया है। वैज्ञानिकों ने दो हजार से अधिक नमूनों की जांच के बाद पता लगाया है कि देश में 10 में से आठ कोरोना के क्लैड (स्वरूप) गायब हो चुके हैं। केवल क्लैड ए3आई और ए2ए क्लैड सक्रिय है। इसमें से 80 फीसदी मरीज ए2ए क्लैड से संक्रमित हैं, जो अन्य की तुलना में कम संक्रामक और ज्यादा घातक या जानलेवा नहीं है।

हैदराबाद और दिल्ली के वैज्ञानिकों का दो हजार से ज्यादा नमूनों पर अध्ययन

हैदराबाद स्थित सेंटर फॉर सेलुलर एंड मॉलिक्यूलर बायोलॉजी (सीसीएमबी) और नई दिल्ली स्थित इंस्टीट्यूट ऑफ जीनोमिक्स एंड इंटीग्रेटिव बायोलॉजी (आईजीआईबी) के वैज्ञानिकों के ऑक्सफोर्ड एकेडिमिक में प्रकाशित इस अध्ययन के मुताबिक, ए3आई क्लैड भी देश में नाममात्र ही बचा है। सीसीएमबी के निदेशक डॉ. राकेश मिश्रा ने बताया, देश के मरीजों में वायरस के ए1ए, ए2, ए7, बी1, बी, बी2, बी4, ए3, ए3आई और ए2ए मरीजों में मिल चुके हैं। जनवरी से लेकर जून तक ये क्लैड पाए गए थे, लेकिन इसके बाद से केवल ए3आई और ए2ए क्लैड ही मिल रहे हैं। बाकी सभी आठ क्लैड गायब हो चुके हैं। दिल्ली को छोड़कर बाकी ज्यादातर राज्यों में ए2ए क्लैड ही मरीजों में मिल रहा है। देश में जहां सबसे ज्याद ए2ए क्लैड के मरीज हैं। सिर्फ दिल्ली और तेलंगाना में ए3आई क्लैड से ज्यादा संक्रमण है। लेकिन वैज्ञानिकों को उम्मीद है कि कुछ समय में ये लुप्त हो जाएगा।

जून के बाद से अब केवल ए3आई और ए2ए क्लैड ही मिल रहे हैं

1377 जीनोम संरक्षित किए विभिन्न प्रदेशों से 7 अगस्त तक एकत्रित 2212 जीनोम में से निम्न गुणवत्ता के जीनोम्स को निकालने के बाद 1377 को संरक्षित किया है। 16 चिकित्सीय संस्थानों से प्राप्त 303 जीनोम पर अध्ययन के बाद यह पता चला है कि 80% तक मरीजों में ए2ए क्लैड पाया जा रहा है, जो दुनिया के बाकी देशों में भी सबसे ज्यादा मिल रहा है।

विदेश से आने वाले ज्यादातर लोगों में मिला था ए3आई क्लैड

वैज्ञानिकों ने जून में अलग-अलग देशों से भारत में आए कोरोना के विभिन्न क्लैड की पुष्टि करते हुए ज्यादातर मरीजों में ए3आई क्लैड की मौजूदगी की बात बताई थी। जुलाई से लेकर अब तक सामने आए रोगियों में ए3आई 10 से 15 फीसदी ही मिला है जबकि 80 से 85 फीसदी तक मरीजों में ए2ए क्लैड पाया गया है, जो अमेरिका, इटली, ब्राजील, चीन, यूरोप सहित अन्य देशों में भी सबसे ज्यादा मिल रहा है।

दुनिया के किसी भी देश में बने टीके का असर होगा बराबर

डॉ. राकेश मिश्रा ने बताया कि वायरस का ए2ए क्लैड भी बेहद सीमित रूप में ही म्यूटेट कर रहा है। लाभ ये है कि दुनिया के किसी भी देश में वैक्सीन या टीका बनता है तो उसका फायदा भारत के मरीजों में भी उतना ही होगा जितना कि उनके देशों के मरीजों में होगा। दूसरा सबसे बड़ा फायदा यह है कि इस वक्त हर देश के वैज्ञानिक शोध में जुटे हैं। ऐसे में कोरोना वायरस की कमजोर कड़ी का लाभ हर किसी को मिल सकेगा।

यह कहता है अध्ययन

- 1376 जीनोम में से 1143 में ए2ए क्लैड मिला है। यह क्लैड काफी तेजी से प्रसारित होता है, लेकिन इसकी मारक क्षमता बहुत ज्यादा नहीं है।
- 149 मरीजों में ए3आई, 52 में बी4 और 17 मरीजों में ए3 क्लैड मिला है। हालांकि वैज्ञानिक ए2ए और ए3आई को छोड़ बाकी सभी को विलुप्त मान रहे हैं।

कोरोना के 10 क्लैड की वर्तमान स्थिति

- ए1ए, ए2,ए7, बी1, बी और बी2 ये छह देश से क्लैड पूरी तरह से गायब
- ए3 और बी4 भी पिछले माह लुप्त, जुलाई तक मिले मरीजों में
- ए3आई क्लैड भी इस महीने के आखिर तक गायब होने की उम्मीद।

विज्ञानातील गुंतवणूक आता उपयोगी

म. टा. प्रतिनिधी, पुणे

डॉ. शेखर मांडे यांचे प्रतिपादन

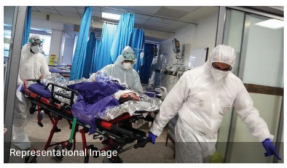
'विज्ञान-तंत्रज्ञानाच्या साह्याने करोना विषाणूचा मुकाबला करण्यासाठी वैज्ञानिक आणि औद्योगिक विकास परिषदेतर्फे (सीएसआयआर) देशातील उद्योगांच्या सहकार्याने अनेक उपक्रम राबवण्यात येत आहेत. फक्त चार ते पाच महिन्यांच्या काळात भारतात स्वदेशी तंत्रज्ञानाच्या जोरावर तपासणी किट, औषधांच्या निर्मितीपासून पीपीई किट आणि तात्पुरत्या रुग्णालयांच्या उभारणीपर्यंत अनेक गोष्टी प्रत्यक्षात येऊ शकल्या. गेल्या ७५ वर्षांमध्ये देशात विविध संशोधन संस्थांच्या रूपाने विज्ञान-तंत्रज्ञान क्षेत्रात जी गुंतवणूक झाली, तिची फळे आज आपल्याला कठीण काळात मिळत आहेत,' असे प्रतिपादन 'सीएसआयआर'चे महासंचालक डॉ. शेखर मांडे यांनी मंगळवारी केले.

पुणे इंटरनॅशनल सेंटरच्या (पीआयसी) वतीने 'समाजासाठी विज्ञान' या विषयावरील ऑनलाइन व्याख्यानमालेच्या उद्घाटनप्रसंगी 'कोव्हिडशी सीएसआयआरचा लढा' या व्याख्यानात ते बोलत होते. या वेळी पीआयसीचे अध्यक्ष आणि ज्येष्ठ शास्त्रज्ञ डॉ. रघुनाथ माशेलकर, ज्येष्ठ अर्थतज्ज्ञ विजय केळकर उपस्थित होते. जागतिक आरोग्य संघटनेने कोव्हिड-१९ ला महामारी घोषित केले नव्हते, तेव्हापासून 'सीएसआयआर'ने या संकटाशी मुकाबला करण्यासाठी नियोजन सुरू केल्याचे डॉ. मांडे यांनी सांगितले.

डॉ. मांडे म्हणाले, 'सीएसआयआरच्या ३८ प्रयोगशाळांच्या सहभागातून मार्चमध्येच टास्क फोर्स बनवण्यात आला. तेव्हापासून शास्त्रज्ञांचा हा गट दररोज संध्याकाळी बैठक घेऊन प्रयोगशाळांमध्ये सुरू असलेल्या संशोधनाचा आढावा घेतो. करोनाच्या प्रसारावर नजर, त्वरीत आणि कमी खर्चातील निदान, औषधे आणि लशी, उपचारांसाठी आवश्यक साधने आणि या सर्वांचे योग्य वितरण करणारी व्यवस्था अशा पाच मुद्द्यांवर सीएसआयआरने लक्ष केंद्रित केले. या सर्वांमध्ये उद्योगांचा सहभाग राहील आणि स्वदेशातच त्यांची निर्मिती होईल याची दक्षता घेण्यात आली.'

'सीएसआयआरच्या या प्रयत्नांमुळे फेलूदासारखे स्वस्त आणि प्रभावी करोना तपासणी किट, करोनावरील उपचारांसाठीची फॅवीपिरावीर, सेप्सिवॅक, एक्यूसीएच आदी औषधे, बायपॅप हे स्वस्तातील व्हेंटिलेटर, डिसइन्फेक्शन युनिट, फक्त पाच दिवसांत उभारता येणारी शंभर बेडची रुग्णालये यांची निर्मिती फक्त चार महिन्यांच्या काळात करता आली. आधी आपल्याला पीपीई किट आयात करावी लागत होती. आता आपण पीपीई किटची निर्यात करतो. शास्त्रज्ञांचे योगदान व उद्योगांच्या सहभागामुळे हे शक्य झाले,' असेही ते म्हणाले.

THE NEWS AGENCY



Representational Image

India

CSIR And Mylan Announce Partnership To Identify Advanced Therapeutic Options For Management Of COVID – 19

By TNA Bureau

23rd Sep, 2020 at 5:39 PM

NEW DELHI || The Council of Scientific & Industrial Research (CSIR), India's premier research organization, and Mylan Laboratories Limited, the India-based subsidiary of leading

FINANCIAL EXPRESS

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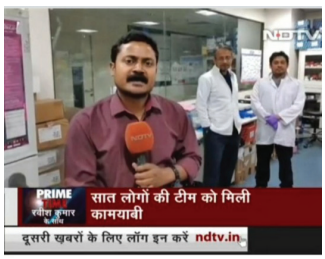
COVID-19 testing in India: DCGI gives approval to commercial launch of low-cost 'Feluda' test

The test was developed due to the scientific community and the industry working in tandem, with the Tata Group working closely with ICMR and CSIR-IGIC.

By: Bulbul Dhawan September 20, 2020 1:40 PM

In CRAFT film school In south Delhi

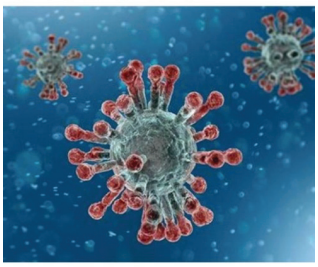
The test makes use of an indigenous, "cutting-edge" CRISPR technology



BusinessLine

Tata CRISPR Covid-19 test gets regulatory approval for commercial use

Our Bureau Updated on September 20, 2020



Tata Group officially ventures into the medical devices with Tata Medical and Diagnostics

Synopsis

Officially incorporated in July 2020, the company manufactures medical appliances and instruments and appliances for measuring, checking, testing, navigating and other purposes; it has launched Tata CRISPR test, powered by CSIR-IGIB FELUDA for det...

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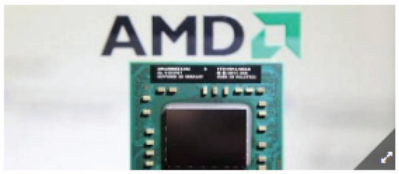
National

CSIR institute gets AMD computing support for Covid-19 research

Our Bureau | Hyderabad | Updated on September 14, 2020 | Published on September 14, 2020



CSIR Fourth Paradigm Institute, a Council of Scientific and Industrial Research body based in Bengaluru, will get high-performance technology contributions from the chip-maker AMD as part of the fight against the Covid-19 pandemic.

CSIR
Media Coverage

NEWS SERVICES DIVISION
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150th Birth Anniversary of Mahatma Gandhi

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NEWS HIGHLIGHTS — Dates for Bihar Assembly Elections announced; Voting to be held in three p

Sep 19, 2020, 9:40PM

Tata CRISPR test, powered by CSIR-IGIB FELUDA, receives regulatory approvals from DCGI for commercial launch

The Tata Clustered Regularly Interspaced Short Palindromic Repeats, CRISPR test, powered by CSIR-Institute of Genomics and Integrative Biology, IGIB FELUDA today received regulatory approvals from the Drug Controller General of India, DCGI for commercial launch.

All India Radio NEWS AIR

As per ICMR guidelines, it has met high quality benchmarks with 96 per cent sensitivity and 98 per cent specificity for detecting the novel Coronavirus. This test uses an indigenously developed, cutting-edge CRISPR technology for detection of the genomic sequence of SARS-CoV-2 virus. CRISPR is a genome editing technology to diagnose diseases.

The Tata CRISPR test is the world's first diagnostic test to deploy a specially adapted Cas9 protein to successfully detect the virus causing COVID-19. This marks a significant achievement for the Indian scientific community, moving from Research and Development to a high-accuracy, scalable and reliable test in less than 100 days. The Tata CRISPR test achieves accuracy levels of traditional RT-PCR tests, with quicker turnaround time, less expensive equipment and better ease of use. Moreover, CRISPR is a futuristic technology that can also be configured for detection of multiple other pathogens in the future.

The effort is the result of a fruitful collaboration between the scientific community and industry. The Tata Group has worked closely with CSIR-IGIB and ICMR to create a high-quality test that will help the nation ramp up COVID-19 testing quickly and economically, with a Made in India product that is safe, reliable, affordable and accessible.

18:40 — Tata group to launch India'... — livemint.com — TWEET

mint — e-paper

The Tata CRISPR test is the world's first diagnostic test to deploy a specially adapted Cas9 protein to successfully detect the virus causing Covid-19.

Tata group to launch India's first low cost Covid-19 test 'Feluda'

1 min read . 21 Sep 2020

Staff Writer

- DCGI has approved India's first CRISPR Covid-19 test developed by the Tata Group and CSIR-IGIB
- Tata group has worked closely with CSIR-IGIB and ICMR to create a high-quality Covid-19 test

DCGI approves commercial launch of low cost Covid-19 test 'Feluda'

PTI | Sep 20, 2020, 18:20 IST

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NEW DELHI: The Drugs Controller General of India has approved the commercial launch of 'Feluda', the Tata CRISPR (Clust… Interspaced Short Palindromic Repeats) Covid-19 test, the Council of Scientific and Industrial

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India's 'Feluda' provides a ray of hope in Covid-19 test

Tribune Desk

Published at 05:22 pm September 20th, 2020

Feluda, right, and Topshe in Feludar Goendagiri, drawing by Satyajit Ray **Wikipedia**

India's coronavirus case tally surged to 5.4 million as it added 92,605 new infections in the last 24 hours

India has approved the commercial launch of Satyajit Ray's popular fictional character "Feluda," a Covid-19 test developed by the Tata Group and Council of Scientific and Industrial Research-Institute of Genomics and Integrative Biology (CSIR-IGIB) on Saturday.

The test uses an indigenously-developed Clustered Regularly Interspaced Short

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भारत और विश्व भर में सक्रिय कोरोना वायरस 70 प्रतिशत एक समान

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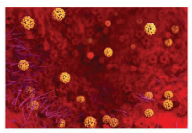
इंडिया साइंस वायर — नई दिल्ली, गुरुवार,

सितंबर 24, 2020



बीमारियों के लिए जिम्मेदार वायरस अलग-अलग क्लैड या आनुवंशिक समूह से संबंधित होते हैं। इसीलिए, वायरस के विभिन्न आनुवंशिक समूहों को निशाना बनाने के लिए अलग-अलग दवाओं अथवा वैक्सीन की जरूरत पड़ती है। कोरोना वायरस के मामले में भी स्थिति अलग नहीं है। कोरोना वायरस से लड़ने के लिए नए तरीके खोज रहे वैज्ञानिक यह पता लगाने के लिए दिन-रात अध्ययन कर रहे हैं कि इस वायरस के कितने आनुवंशिक समूह भारत में सक्रिय हो सकते हैं।

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद (सीएसआईआर) के वैज्ञानिकों ने कहा है कि भारत का कोरोना क्लैड दुनिया में फैल रहे कोरोना रूपों से 70 प्रतिशत तक मिलता-जुलता है। हैदराबाद स्थित सीएसआईआर की घटक प्रयोगशाला सेंटर फॉर सेलुलर ऐंड मॉलिक्यूलर बायोलॉजी (सीसीएमबी) के वैज्ञानिकों द्वारा किए जा रहे एक अद्यतन अध्ययन में यह बात उभरकर आई है।

शोधकर्ताओं का कहना है कि दुनियाभर में फैले वायरस की आनुवंशिक संरचना में समानता का अर्थ है कि इस वायरस के नियंत्रण के लिए अलग-अलग दवाओं या फिर वैक्सीन की जरूरत नहीं होगी। ऐसी स्थिति में एक ही वैक्सीन या दवा इस वायरस से लड़ने के लिए पर्याप्त हो सकती है।

भारत में कोरोना वायरस का A2a क्लैड सबसे अधिक हावी है, जिसमें दुनियाभर में अब तक अध्ययन किए गए जीनोम से 70 प्रतिशत तक समानता पायी गई है। इससे पहले, भारत में व्याप्त A3i क्लैड में आई गिरावट के बाद महामारी के लिए जिम्मेदार A2a क्लैड में वृद्धि देखी गई है।

> दुनियाभर में फैले वायरस की आनुवंशिक संरचना में समानता का अर्थ है कि इस वायरस के नियंत्रण के लिए अलग-अलग दवाओं या फिर वैक्सीन की जरूरत नहीं होगी। ऐसी स्थिति में एक ही वैक्सीन या दवा इस वायरस से लड़ने के लिए पर्याप्त हो सकती है।

TOI — COVID-19 — OPEN APP

HOW NEERI GETS QUICK RESULTS

STEP 1 | Samples processed as soon as received. The RNA of virus is fragile and a perishable biochemical. Good practice to process the samples right away

STEP 2 | Samples sent inside RNA extraction BSL-2 facility in batches, rather than at one go. It's an intermittent arrangement as soon as the initial step of sample receiving, labelling and processing is over

STEP 3 | Team processes RNA extraction in batches as received

STEP 4 | Dedicated coordinator intimates RT-PCR master mix team 10 minutes before completion of RNA extraction. Allows the team to prepare the mix and be ready. Allows template addition (addition of extracted RNA to the RT-PCR mastermix) without any time lag in a separate room

STEP 5 | The RT-PCR plates containing RNA template and RT-PCR master mix are immediately subjected to programmed RT-PCR. All RT-PCR machines have special settings to adjust ramping time (time taken in PCR machine to shift from one temperature to another). Fine-tuning of ramping time can contribute to the time-saving efforts

STEP 6 | While RT-PCR is running, documentation team prepares template for reporting results with all patient information and SRF ID. As soon as results are ready, results are added in the template followed by expedite checking, endorsements and reporting

NEERI'S ADVICE TO OTHER LABS | Work on modalities to expedite the testing and reporting, starting from sample receiving to reporting. Time management is paramount as the time is a detrimental factor between life and death. It can be a decisive factor in winning the war against Covid

NEWS • LIVE TV | INDIA TODAY | APP | MAGAZINE

News / India /

Scientists analyse 2,000 coronavirus genomes from India: The genomic landscape of SARS-CoV-2

In June, scientists had revealed the presence of a distinct virus population among Indians. At that time, 41 per cent of all Indian SARS-CoV-2 genomes belonged to I/A3i clade which has dropped to 18 per cent.

Nagpur: Early detection of Covid-19 can save many lives. Bearing this in mind, scientists at the National Environmental Engineering Research Institute's (Neeri) testing laboratory have adopted effective methodology and are providing RT-PCR test results in record timing of about four hours, making the institute the fastest lab in Nagpur division.

CSIR
Media Coverage

THE HINDU

Coronavirus | Opeds and editorials

Recovery from COVID-19 can be a struggle

Nikita Mehra
Lancelot Pinto

India

CSIR And Mylan Announce Partnership To Identify Advanced Therapeutic Options For Management Of COVID – 19

By TNA Bureau
23rd Sep, 2020 at 5:39 PM

NEW DELHI || The Council of Scientific & Industrial Research (CSIR), India's premier research organization, and Mylan Laboratories Limited, the India-based subsidiary of leading global pharmaceutical company Mylan, on Wednesday announced a partnership to address unmet patient needs amidst the evolving COVID-19 pandemic.

Under the partnership, CSIR's constituent laboratory Indian Institute of Chemical Technology (CSIR-IICT), and Mylan will collaborate to identify potential therapies for COVID-19.

अमर उजाला

शहर चुनें

देश | कोरोना वायरस LIVE | शहर और राज्य | आईपीएल 2

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सीएसआईआर और सीसीएमबी के शोध में दावा, पूरी दुनिया को एक ही कोरोना वैक्सीन की जरूरत

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BREAKING

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COVID-19

Centre allows commercial launch of 'Feluda', first CRISPR COVID-19 test

The Tata CRISPR test achieves accuracy levels of traditional RT-PCR tests with quicker turnaround time, less expensive equipment and better ease of use.

Representational Image

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Edited By:
Ankita Bhandari
@ankita_katty

NEW DELHI: The Drugs Controller General of India has approved the commercial launch of 'Feluda', the Tata CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) COVID-19 test, the Council of Scientific and Industrial Research (CSIR) said on Saturday.

INDIA

DCGI approves commercial launch of low cost Covid-19 test 'Feluda'

PTI | Sep 20, 2020, 18:20 IST

Representative photo

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NEW DELHI: The Drugs Controller General of India has approved the commercial launch of 'Feluda', the Tata CRISPR (Clustered Regularly Interspaced Short Palindr[illegible]) Covid-19 test, the Council of Scientific and Industrial Research (CSIR) said on Saturday.

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18:41

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Last updated: September 20, 2020 18:07 IST

India's paper-strip COVID-19 test, named after Satyajit Ray's 'Feluda', gets DCGI approval

The Drugs Controller General of India (DCGI) approved the use of paper-based COVID-19 test strip 'Feluda' developed by researchers from the CSIR.

Written by Kunal Gaurav

The Drugs Controller General of India (DCGI) approved the use of paper-based COVID-19 test

India's first CRISPR Covid-19 test, developed by the Tata Group and CSIR IGIB, approved for use in India

Posted On: 19 SEP 2020 8:33PM by PIB Delhi

The Tata CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) test, powered by CSIR-IGIB(***Institute of Genomics and Integrative Biology***) FELUDA, received regulatory approvals today from the Drug Controller General of India (DCGI) for commercial launch, as per ICMR guidelines, meeting high quality benchmarks with 96% sensitivity and 98% specificity for detecting the novel coronavirus. This test uses an indigenously developed, cutting-edge CRISPR technology for detection of the genomic sequence of SARS-CoV-2 virus.CRISPR is a genome editing technology to diagnosing diseases.

kolorkode

STAR OF MYSORE

Friday, 25 September 2020 , 5:24 pm

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Coronavirus Update, COVID-19, News

Two-Day Testing For Antibodies In Plasma Begins At CFTRI

September 15, 2020

dyore Mysuru: As part of the nationwide project from CSIR- IGIB (CSIR-Institute of Genomics & Integrative Biology), New Delhi, a no-day 'Pan-CSIR Plasmona India Sero Surveillance for COVID-19, began at CSIR- Central Food Technological Research Institute (CFTRI) in city this morning.

pib.gov.in

CSIRand Mylan Announce Partnership to identify Advance Therapeutic Options for Management of COVID – 19

Director General of CSIR, Dr. Shehkar C Mande -- "CSIR has prioritized conducting clinical trials of well proven drugs in partnership with industry towards the development of multiple therapeutic options for COVID-19."

Posted On: 23 SEP 2020 4:47PM by PIB Delhi

The Council of Scientific & Industrial Research (CSIR), India's premier research organization, and Mylan Laboratories Limited, the India-based subsidiary of leading global pharmaceutical company Mylan, today announced a partnership to address unmet patient needs amidst the evolving COVID-19 pandemic. Under the partnership, CSIR's constituent laboratory Indian Institute of Chemical Technology (CSIR-IICT), and Mylan will collaborate to identify potential therapies for COVID-19.

A series of clinical trials will be conducted towards new and innovative solutions to manage COVID-19 pandemic in India as part of this collaboration. The first of the clinical trial to be rolled out is a multiple arm phase 3 study that will be conducted in adult patients with mild to moderate COVID -19 at risk of complications.

Hindustan Times

E-Paper

Home / Analysis / The key role of CSIR in the battle against Covid | Opinion

The key role of CSIR in the battle against Covid | Opinion

From bringing in self-reliance ranging from indelible ink to the fight against Covid-19, CSIR has played a vital role and shall do so in any future pandemic or calamity that India faces.

Updated: Sep 25, 2020 19:06 IST

By Shekhar C Mande,

Newsletter | आजचा ई-पेपर

Friday, September 25, 2020

सकाळ

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भारतीय 'फेलुदा' देणार कोरोना टेस्टचा रिपोर्ट फक्त दोन तासात

CSIR
Media Coverage

महाराष्ट्र टाइम्स नागपूर । शुक्रवार, २५ सप्टेंबर २०२०

नीरीतील अहवाल चार तासांत

आरपीटीएसमधील कामे होताहेत झटपट; दिवसाला तपासतात ५०० नमुने

म.टा. प्रतिनिधी, नागपूर

करोना रुग्णांवर योग्य वेळेत उपचार सुरू होण्यासाठी आणि त्यांच्यामुळे होणाऱ्या प्रादुर्भाव टाळण्यासाठी करोनाच्या चाचण्यांचे निकाल शक्य तेवढ्या लवकर येणे आवश्यक आहे. देशातील काही प्रयोगशाळांमधून अहवाल येण्यासाठी २४ तासांचा अवधी लागत असताना शहरातील राष्ट्रीय पर्यावरण अभियांत्रिकी संशोधन संस्थेतर्फे (नीरी) अत्यंत वेगवान पद्धतीने म्हणजे अवघ्या चार ते पाच तासांत चाचण्या केल्या जात आहेत. नागपूर विभागाचा विचार केल्यास सगळ्यात कमी वेळेत अधिक चाचण्यांचे निकाल देणारी यंत्रणा नीरीने उभारली आहे.

स्थानिक प्रशासनाच्या सूचनांनुसार चाचण्या करणाऱ्या प्रयोगशाळांनी १२ तासांच्या आत निकाल देणे अपेक्षित आहे. मात्र नीरीद्वारे ४ ते ५ तासांतच या चाचण्यांचे निकाल दिले जात आहेत. रिजनल पोलिस ट्रेनिंग स्कूलच्या परिसरात स्वॅब संकलित केले जातात आणि शास्त्रीय चाचण्यांसाठी ते नीरी येथे पाठविले जातात. १९ एप्रिल रोजी नीरी येथे टेस्टिंग सेंटर सुरू करण्यात आले. नागपूर 'हब' अंतर्गत येणाऱ्या येणाऱ्या प्रयोगशाळांमध्ये आत्तापर्यंत २ लाखाहुन अधिक चाचण्या झाल्या आहेत. नीरीच्या व्हायरॉलॉजी विभागाचे प्रमुख शास्त्रज्ञ तसेच कोव्हिड-१९ टेस्टिंग युनीटचे प्रमुख डॉ. क्रिष्णा खैरनार म्हणाले, 'कोव्हिड-१९च्या चाचण्यांचे अहवाल शक्य तेवढ्या लवकर देणे अत्यंत आवश्यक आहे. या प्रक्रियेच्या वेगावर आपल्या देशातील या रोगाचा मृत्युदर अवलंबून आहे. रुग्णांना तातडीने उपचार मिळणे आवश्यक आहे, तसेच त्याच्यापासून प्रादुर्भाव होऊ नये यासाठी त्याला लवकरात लवकर विलग करणेही आवश्यक आहे. त्यामुळे नीरीने पहिल्या दिवसापासूनच ही प्रक्रिया जेवढी अचूक तेवढीच वेगवान करण्यावर भर दिला.' खैरनार पुढे म्हणाले, 'चाचणीचा अहवाल निगेटिव्ह येणे हे जितके दिलासादायक आहे तेवढेच तो लवकर कळणेसुद्धा गरजेचे आहे. ज्येष्ठ नागरिक आणि गरोदर महिलांची प्रकृती मुळातच नाजूक असते. त्यांना भेडसावणारी चिंता त्यांच्या प्रकृतीसाठी हानीकारक ठरू शकते. त्यामुळे अशा स्थितीत तातडीने निकाल कळल्यास त्यांना दिलासा मिळू शकतो.'

नीरी-आरपीटीएसची यंत्रणा

- आरपीटीएसमध्ये संकलित केलेले स्वॅब तपासणीसाठी तातडीने नीरीला पाठविले जातात. दिवसभरात संकलित करण्यात आलेले स्वॅब एकाच वेळेस पाठविण्यापेक्षा त्यासाठी दोन बॅचेस करण्यात आल्या आहेत. यामुळे प्रयोगशाळेतील वेग वाचतो.
- नमुने मिळताच ते आरएनए एक्सट्रॅक्शनसाठी पाठविले जातात. आरएनए एक्सट्रॅक्शन होण्याच्या १० मिनिटांआधीच आरटीपीसीआर करणाऱ्या चमुला त्याची माहिती दिली जाते. यामुळे ही चमू पुढील कार्यवाहीसाठी सज्ज होते.
- आरटीपीसीआर चमुचे काम सुरू होताच कागदोपत्री कामे करणारी चमुसुद्धा आपल्या कामांसाठी सज्ज झालेली असते. कम्प्युटरवर अहवालाचे साचे तयार झालेले असतात. निकाल येताच या साच्यांमध्ये माहिती भरली जाते आणि अहवाल तयार होतात.

इतर प्रयोगशाळांपेक्षा वेगाने चाचणी करणाऱ्या नीरीतील तज्ज्ञांची चमू.

आरटीपीसीआर टेस्टिंग रिजल्ट देने में नीरी आगे

- करीब 4 घंटे में मिल जाती है रिपोर्ट
- दूसरी लैब में 6 से 7 घंटे लगते हैं

भास्कर संवाददाता | नागपुर. नागपुर की नीरी लैब ने सबसे तेज आरटीपीसीआर टेस्टिंग रिजल्ट देने का रिकॉर्ड बनाया है। सीएसआईआर नीरी ने केवल 4 घंटे में आरटीपीसीआर टेस्ट के परिणाम दिए हैं। अब तक नीरी ने 2 लाख 20 हजार टेस्टिंग पूरी कर ली है। नीरी के साइंटिस्ट डॉ. कृष्णा खैरनार ने इसके लिए प्रबंधन को श्रेय दिया है। नीरी लैब में 300 से 500 टेस्ट प्रतिदिन हो रहे हैं।

10 लोगों टीम करती है काम : नीरी लैब ने पूरे नागपुर विभाग में सबसे कम समय में आरटीपीसीआर टेस्टिंग को पूरा किया है। दूसरी लैब में 6 से 7 घंटे लगते हैं। यदि कोई व्यक्ति लैब में टेस्ट कराने जाता है, तो उसे 6 घंटे के अंदर रिपोर्ट मिल जाती है, जबकि दूसरे केंद्रों में 12 से 14 घंटे का समय लगता है। इसमें केवल 10 लोगों की टीम है, जिसमें 7 युवतियां हैं। आरटीपीसीआर की पूरी जांच से लेकर अंतिम परिणाम तक कई चरण होते हैं। पहले चरण के पूरे होने के 10 मिनट पहले ही दूसरे चरण की तैयारी कर ली जाती है। इसके लिए एक समन्वयक हर टीम को मैसेज देते रहता है। काम के बीच कोई ब्रेक नहीं लिया जाता। कई बार 250 टेस्ट 3.30 घंटे में पूरे किए हैं।

समन्वय का सही उपयोग

हमने इस प्रक्रिया को जल्द करने के लिए समन्वय का सही उपयोग किया है। व्यर्थ जाने वाले समय को पूरी तरह खत्म कर दिया है। दूसरी लैब में इसके लिए हम ट्रेनिंग देने को तैयार हैं।

डॉ. कृष्णा खैरनार, हेड कोविड मॉलिक्यूलर टेस्टिंग लैब

दैनिक भास्कर BhaskarHindi.com
Fri, 25 September 2020
https://epaper.bhaskarhindi.com/c/55209846

THE WEEK

Ayush Ministry to take up clinical study on potential of Vasa Guduchi for management of COVID-19

PTI

September 25, 2020 14:44 IST

New Delhi, Sep 25 (PTI) The Ministry of AYUSH has approved a proposal for carrying out a clinical study to assess the role of Vasa and Guduchi in therapeutic management of symptoms in COVID-19 positive patients.

This will be a randomized, open label three armed study, and will

Explained: What is the Feluda test for Covid-19 that has been approved by India?

Feluda Covid-19 Test: Feluda test uses indigenously developed CRISPR gene-editing technology to identify and target the genetic material of SARS-CoV2, the virus that causes Covid-19.

Written By Abhishek De , Edited By Explained Desk | New Delhi |

Updated: September 23, 2020 10:57:15 am

Covid-19 testing in progress at MHADA colony of Mahara Nagar in Mumbai (Express Photo by Amit Chakravarty)

READ IN APP

UNI United News of India
BREVITY ACCURACY SPEED
India's Multi Lingual News Agency
Friday, Sep 25 2020 | Time 21:45 Hrs(IST)

स्वयं, अपने परिवार और मित्रों को COVID-19 से सुरक्षित रखें
आरोग्य सेतु ऐप का उपयोग करें

Posted at: Sep 12 2020 11:16AM

CSIR-CDRI carrying out a research study that involves testing of people for antibodies against SARS-CoV-2

Kolkata, Sep 12 (UNI) CSIR-CDRI (Central Drug Research Institute) is carrying out a research study that involves testing of people for antibodies against SARS-CoV-2.

The serological testing is conducted from September 9 to 11. For the past 7 months we are in the midst of a pandemic of coronavirus (COVID-19) infection with more than 45 lakh individuals being infected with the virus which has resulted in more than 76,270

टाटा समूह की 'फेलुदा' किट को डीजीसीआई की मंजूरी, 500 रुपये में होगा कोरोना का टेस्ट

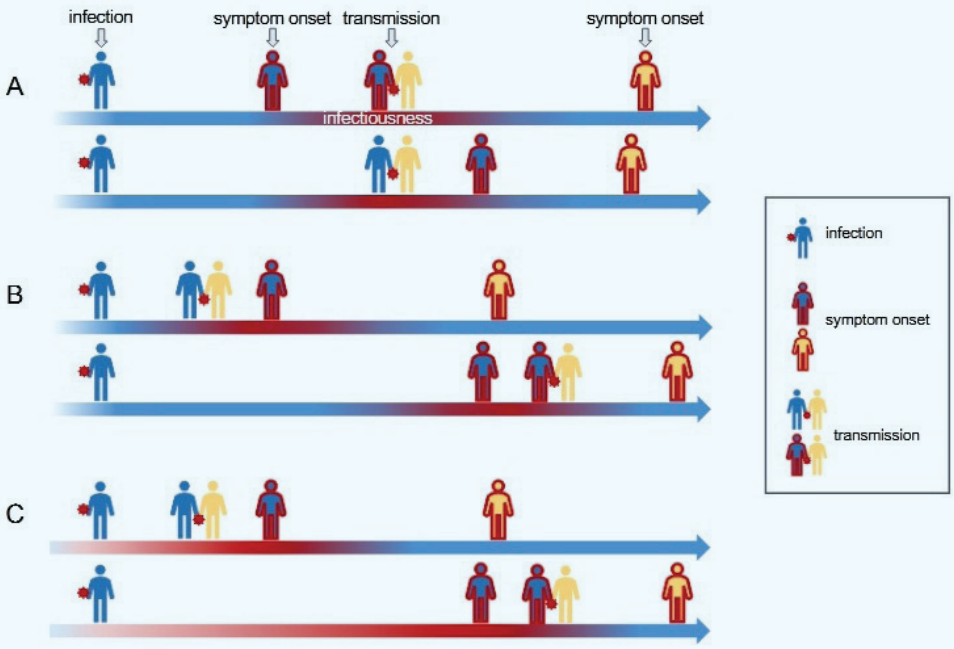
न्यूज डेस्क, अमर उजाला, नई दिल्ली Updated Mon, 21 Sep 2020 02:24 PM IST

कोरोना वायरस - फोटो : PTI

Timing of SARS-CoV-2 transmission is a critical factor to understand the pandemic trajectory

In a study published on *medXriv* as a preprint, researchers say that timing of SARS-CoV-2 transmission is a critical factor to understand the transmission trajectory and spread of COVID-19 pandemic. The researchers analyzed the distribution of transmission events with respect to exposure and onset of COVID-19 symptoms. They found that the timing of virus transmission is strongly linked to the onset of clinical symptoms in comparison to the time since infection. The pre-symptomatic infectious period was also found to be extended further back in time for selective individuals with longer incubation periods (time to onset of symptoms from infection). The fraction of transmission from strictly pre-symptomatic infections was high which limits the efficacy of symptom-based interventions. The large fraction of transmissions occurs the same day or next day after onset of symptoms (however mild). It exhibits the critical importance of individuals who break the transmission chain by distancing themselves after appearance of symptoms in other individuals. The study highlights that rapid & timely testing and contextual risk information can be largely effective to reduce the transmission rates of COVID-19 infection.

Source: Ferretti *et al.*, preprint at *medRxiv*; DOI: 10.1101/2020.09.04.20188516; 2020

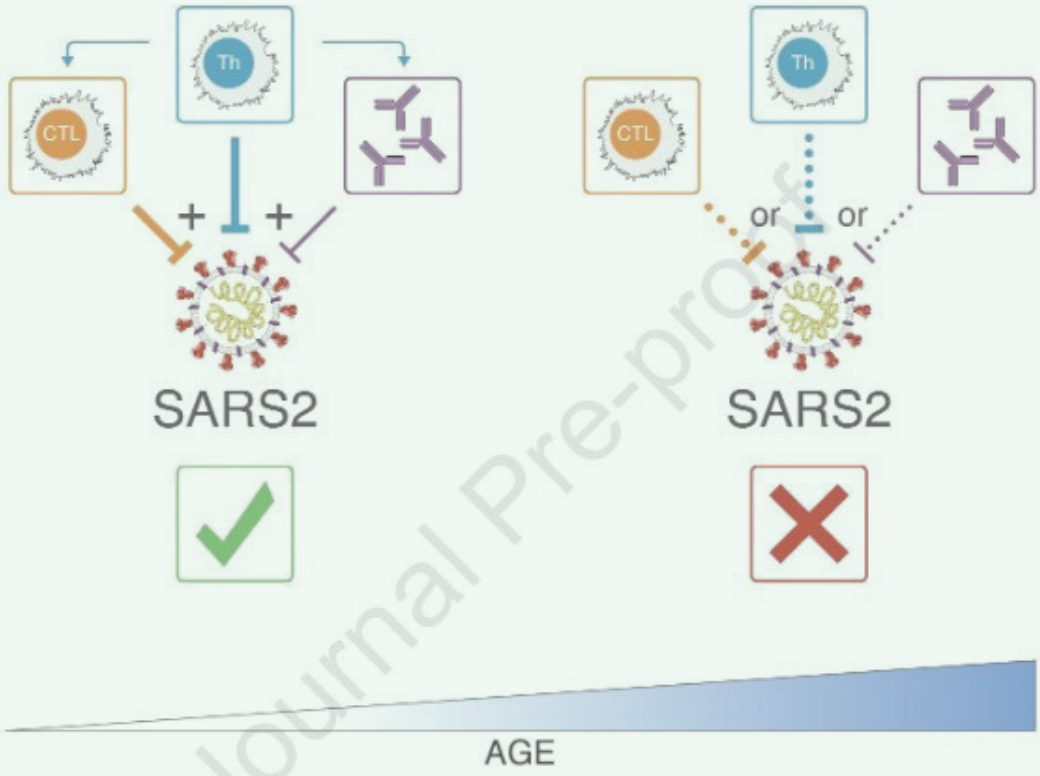


Three alternative hypotheses for the timing of infectiousness of an individual
(Image Courtesy: Ferretti et al., preprint at medRxiv; DOI: 10.1101/2020.09.04.20188516; 2020)

An unorganized immune response may be the reason for COVID-19 hitting hard

Researchers claim to have found evidence that individuals hit hard by COVID-19, have an immune response which is out of sync. A recent study published in *Cell* explores the three most powerful warriors of our adaptive immune system. Adaptive immune system is the immune system's secondary defense mechanism against the viral attack. The primary defense is the innate defensive cells that attack the virus immediately. They also release cytokines to alert other immune cells. The first adaptive warriors are the antibodies that neutralize the viruses. In the case of failure of these antibodies to combat the COVID-19 virus, T cells identify and kill the infected cells. The third warriors are the helper T cells, which coordinate the production of antibodies and killer T cells. All these warriors have to fight the virus attack in sync and in a very organized manner. The researchers from La Jolla Institute of Immunology, USA have analyzed the blood samples of several individuals ranging from very mild to severely fatal symptoms and compared these with the recovered patients and never-exposed individuals. The participants were of ages ranging from 20 to 86 years. The researchers concluded that the role of T cells is much more important than the antibodies in fighting the COVID-19 infection. The older participants had smaller populations of the T cells that can recognize the pathogens and then develop the mature killer and helper cells to effectively fight the viral attack. However, the reason for cytokine storm is not yet known. In some cases it is thought that the lack of coordination between innate and adaptive immune system leads to cytokine storm.

Source: Motherbacher *et al.*, *Cell*; DOI: 10.1016/j.cell.2020.09.038; 2020

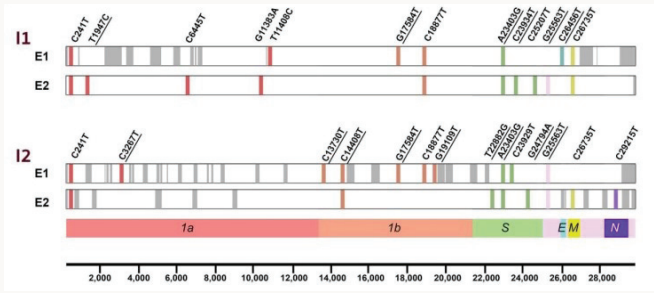


(Image Courtesy: Cell, DOI: 10.1016/j.cell.2020.09.038; 2020)

Journal Pre-proof

Patients who got infected by COVID-19 twice, were asymptomatic at least once

According to a preprint published by researchers at CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB), individuals who got infected by COVID-19 twice were asymptomatic at least once. Among the infected individuals, one appeared to carry a variant that conferred resistance to neutralizing antibodies. Much of the study has been done on health workers at the Government Institute of Medical Science, Greater Noida, which involved routine surveillance for COVID-19 infection among the health workers. The reliability of the study is very high because the swab samples underwent a whole-genome sequencing ruling out the possibility



The genetic variants in isolates of the two episodes (E1 and E2)

(Image Courtesy: OSF preprints; DOI: 10.31219/osf.io/4fmrg; 2020)

of contamination or false positive cases. According to the researchers at CSIR-IGIB, the genetic variant 22882T during reinfection (in one of the patients) may confer resistance to neutralizing antibodies. The study is yet to be peer reviewed.

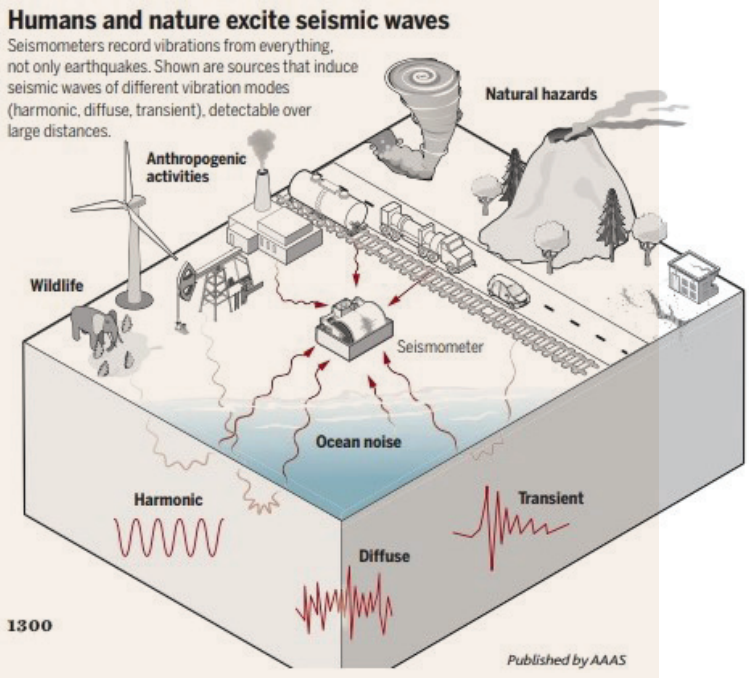
Source: *OSF preprints;* DOI: 10.31219/osf.io/4fmrg; 2020

Scientists observe the quieting of anthropogenic vibrations due to COVID-19 pandemic

The earth vibrates incessantly with imperceptible intensity generally and sometimes with larger amplitudes like in earthquakes. Seismologists try to decipher the vibrational sources and path effects by analyzing seismograms – records of the vibrations measured with the help of seismometers. With the same method, the movements of tectonic plates, which sometimes lead to earthquakes, are observed and analyzed. Human activities on the earth's surface also generate irregular seismic waves that can be detected with the seismic instruments. A large collaborative group of scientists from Oxford and Imperial College, London have found that the anthropogenic vibrations are quieter now after the COVID-19 pandemic. The researchers have published a detailed report in the journal *Science*.

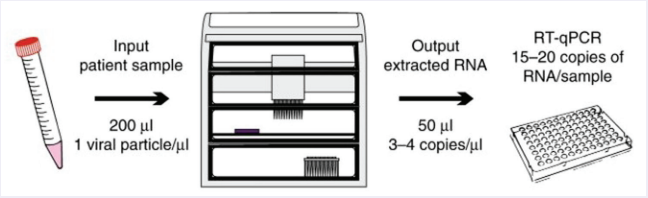
Source: *Science*; DOI: 10.1126/science.abd2438; 2020

Figure Courtesy: AAAS, USA



New method to convert existing biofoundries to COVID-19 testing facilities with increased testing capacity

Scientists at Imperial College, London have established a new method for converting a biofoundry into a scaled up alternative testing facility. RT-PCR is the most reliable test for confirming COVID-19 infection but it is also a sophisticated and time consuming test which requires specific chemical reagents. The researchers have developed a process that is a reagent-agnostic automated SARS-CoV-2 testing platform which can be quickly deployed and scaled up for large numbers of testing. The in-house-generated, open-source, MS2-virus like particle was used as SARS-CoV-2 standard in the testing experiments. The method validates RNA extraction and RT-qPCR workflows as well as two detection assays based on CRISPR-Cas13a and RT-Loop Mediated Isothermal Amplification (RT-LAMP). This could increase the testing capacity by 1000 samples per day of the existing testing facility. The details of the research have been published in *Nature Communications* after peer review.



Schematic of a typical workflow tracking viral copy number

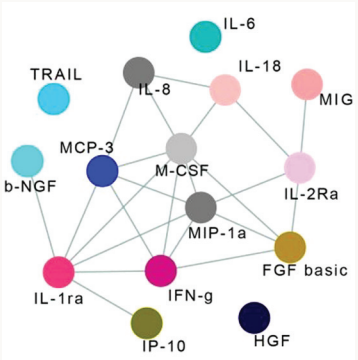
(Image Courtesy: Nature Communications; DOI: 10.1038/s41467-020-18130-3; 2020)

Source: *Nature Communications*; DOI: 10.1038/s41467-020-18130-3; 2020

Understanding the attenuation of the cytokine storm by convalescent plasma therapy in severe COVID-19 patients

Cytokine storm has been found to be one of the important reasons for the death of severely infected COVID-19 patients. Scientists are trying to understand the mechanisms and the factors behind the cytokine storm and the possibilities of attenuating it with the help of different therapies. Scientists at CSIR-IICB, Kolkata have performed a randomized control trial on convalescent plasma therapy (CPT) in severe COVID-19 patients. Further, they analyzed the forty eight cytokines in terms of their abundance, interrelationships and the hyper-immune activation-associated cytokine storm in the severely infected COVID-19 patients. The plasma MCP3 level was found to be the key correlate for mitigation of hypoxia (lack of oxygen in blood). CPT was also identified as an anti-inflammatory agent that is independent of its neutralizing antibody content. The researchers assert that the convalescent plasma therapy is better in reduction of hypoxia with respect to the existing standard therapy. The research and clinical trial are published as preprint at *medRxiv* which are yet to be peer reviewed.

Source: *medRxiv*; DOI: 10.1101/2020.09.21.20199109; 2020



Correlation network of major cytokines at T1 compared between patients with mild disease

(Figure Courtesy: medRxiv; DOI: 10.1101/2020.09.21.20199109; 2020)

CORONA INNOVATIONS

AI to identify Corona-infected individuals

(Photo credit: https://www.gcfrng.com)

Artificial Intelligence (AI) technology is also serving the humanity in this once in a century pandemic. The sophisticated surveillance system of China has used facial recognition technology and temperature detection software from 'SenseTime' to identify people who might have a fever and be more likely to have the coronavirus. AI is being used in smart helmets to identify people with fevers.

Health Code is another monitoring system developed by the Chinese government that harnesses big data to identify and assess the risk of every individual based on their travel history, how much time they have spent in virus hotspots and potential exposure to people carrying the virus. Citizens are assigned a colour code (red, yellow or green) which they can access via apps like WeChat or Alipay to indicate if they should be quarantined or allowed in public.

Source: https://www.bbc.com

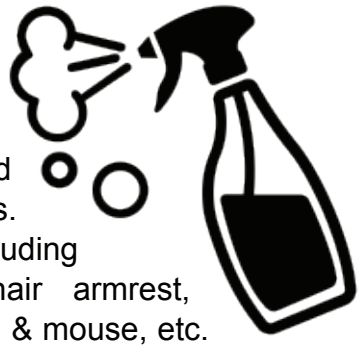
Care Units for healthcare workers

A team of medical professionals, architects, crisis response experts and engineers have launched a unique initiative called JUPE Health. They have developed a new series of affordable, shippable care units that can be rapidly deployed to areas in need.

The cost of this care unit is about 1/30th of a typical hospital room. JUPE's pop-up models are highly scalable and cost-effective. Each standalone unit comes in an easily transportable, flat-pack box and 24 units can deploy on a single heavy-duty truck while up to 500,000 can fit on a single cargo ship.

Source: https://www.whatdesigncando.com

Disinfectant sprays



The Institute of Pesticide Formulation Technology (IPFT) has developed two new disinfection sprays for surface application and vegetables & fruits. Surfaces including door handles, chair armrest, computer keyboard & mouse, etc. may transmit microbes via direct or indirect contact. The Institute has developed alcohol-based disinfectant spray for surface applications. It contains botanical anti-microbial which is effective in prevention from various diseases caused by microbes, bacteria and virus. The formulation is volatile and evaporates quickly after disinfecting the surface and does not leave any stains, odour and residue, etc. The Institute has also developed a disinfectant spray to remove pesticide residue leftover on the surface of fruits and vegetables.

Source: *PIB*

Auto book sanitizing composite machine

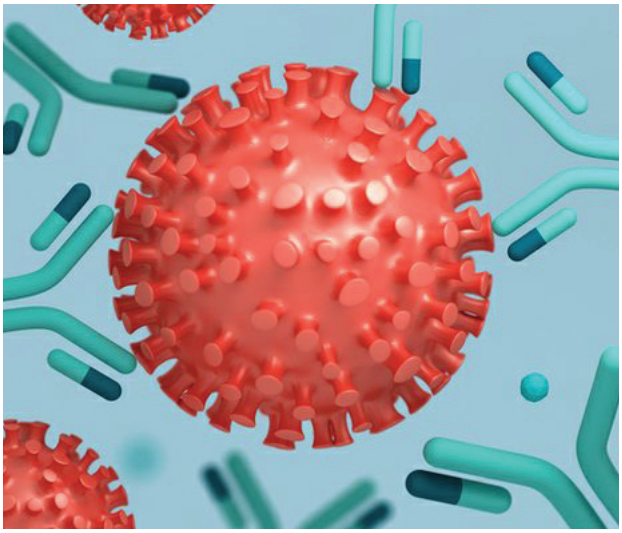
North-Eastern Hill University (NEHU), Shillong, has developed an auto book sanitizing composite machine. The device was unveiled and inaugurated on 23 September 2020 at the Central Library of the University to sanitize reading materials without causing any damage to the material. Dr F.R. Sumer, Librarian In-charge, NEHU, stated that such a device was felt necessary about two months ago to manage the handling of books and other reading materials, while in circulation among students and other users, especially in the post lockdown situation. The sole objective behind such thought is to keep a facility ready for a COVID-19-free environment in the University Library for safe use of the books under circulation.

Source: https://nehu.ac.in/article/90/First-of-its-kind-Auto-Book-Sanitizing-Composite-Machine-unveiled-at-NEHU

Antibody self-test

Mologic and BioSURE have joined hands to develop the technology of a COVID-19 antibody self-test. According to them, the self-test is easy to use, requires only a fraction of a drop of blood and gives results in just 10 minutes. To rapidly iterate, improve and validate the Company's COVID-19 diagnostic prototypes and independently assess performance, Mologic and BioSURE are working with Liverpool School of Tropical Medicine (LSTM) and St George's, University of London.

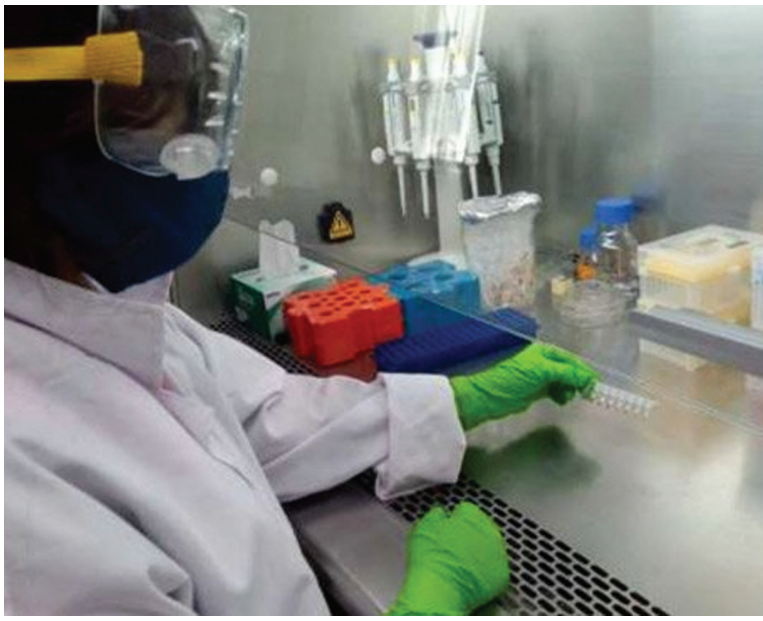
Source: https://www.med-technews.com

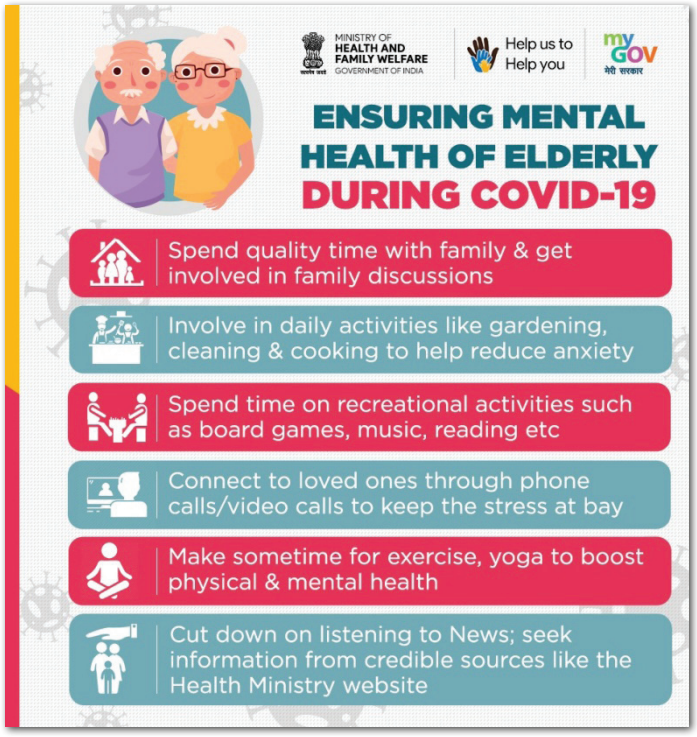


Colour-based assay for visual detection of SARS-CoV-2

Researchers at Tata Institute of Fundamental Research (TIFR), Hyderabad, have standardised a colour-based assay for visual detection of SARS-CoV-2 RNA that gives results within 30 minutes. At present, the gold-standard of COVID-19 testing by RT-PCR based test consumes 6 to 8 hours and requires an expensive experimental setup and trained personnel. The developed method can rapidly detect the SARS-CoV-2 RNA for which results are determined by a change in colour of the sample once the reagents are added. It is easily visible, allowing for quicker and easier testing.

Source: https://www.tifr.res.in/TSN/article/COVID_test_in_30_minutes.pdf



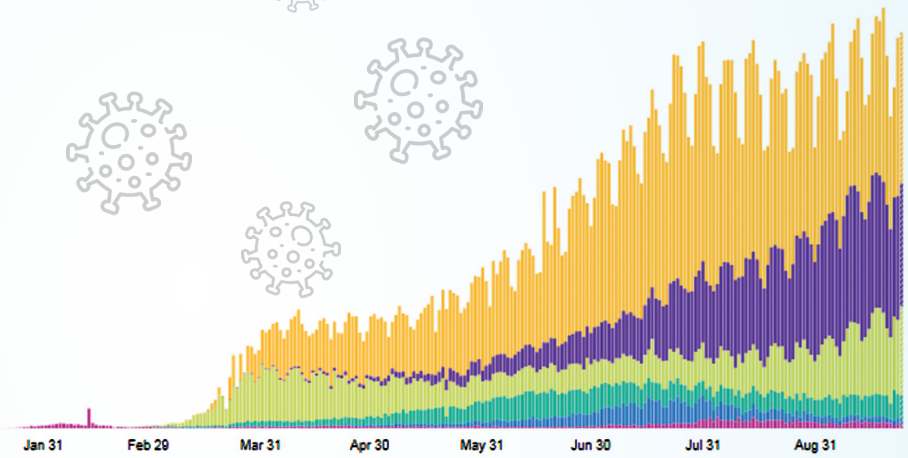


COVID-19 Dashboard

COVID-19 Cases and Deaths

(Data as of 25 September 2020)

	Worldwide
Total Confirmed Cases	32,110,656
Total Death	980,031



Source: www.who.int

INDIA

(Data as of 26 September 2020)

TOTAL SAMPLES TESTED UP TO SEPTEMBER 25, 2020
7,02,69,975

SAMPLES TESTED ON SEPTEMBER 25, 2020
13,41,535

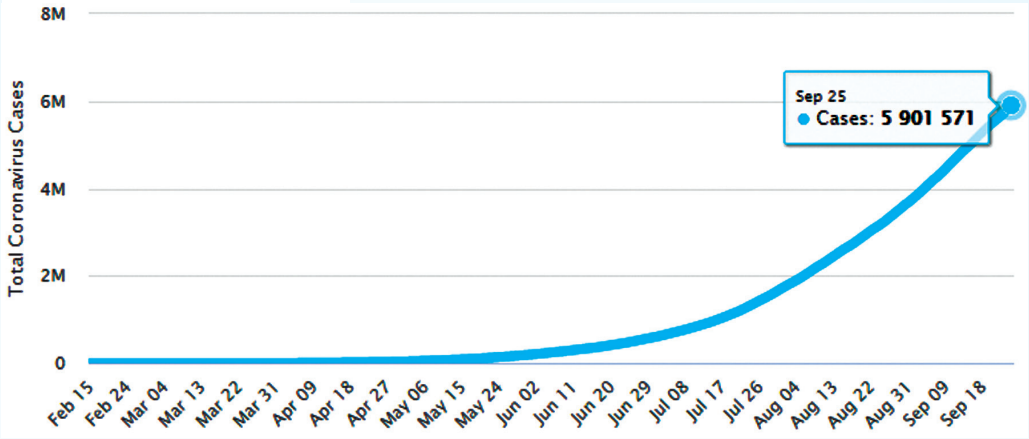
Total Cases	Active (16.28%)	Discharged (82.14%)	Deaths (1.58%)
59,03,932	9,60,969	48,49,584	93,379
↑ 85,362	↓ 9,147	↑ 93,420	↑ 1,089

Source: www.mygov.in

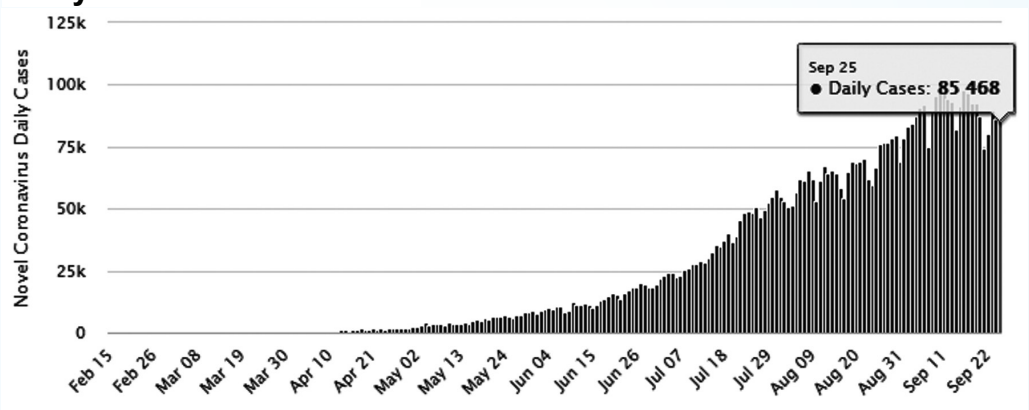
Graph
INDIA

(Data as of 26 September 2020)

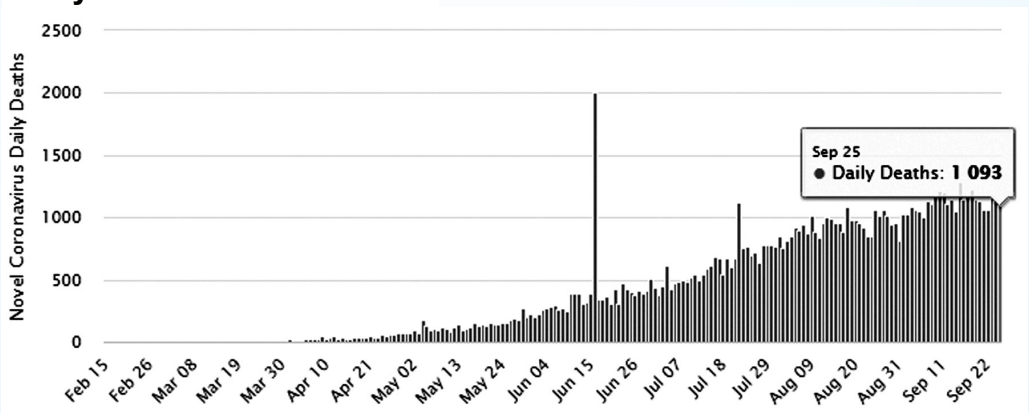
Total Cases in India



Daily New Cases in India



Daily New Deaths in India

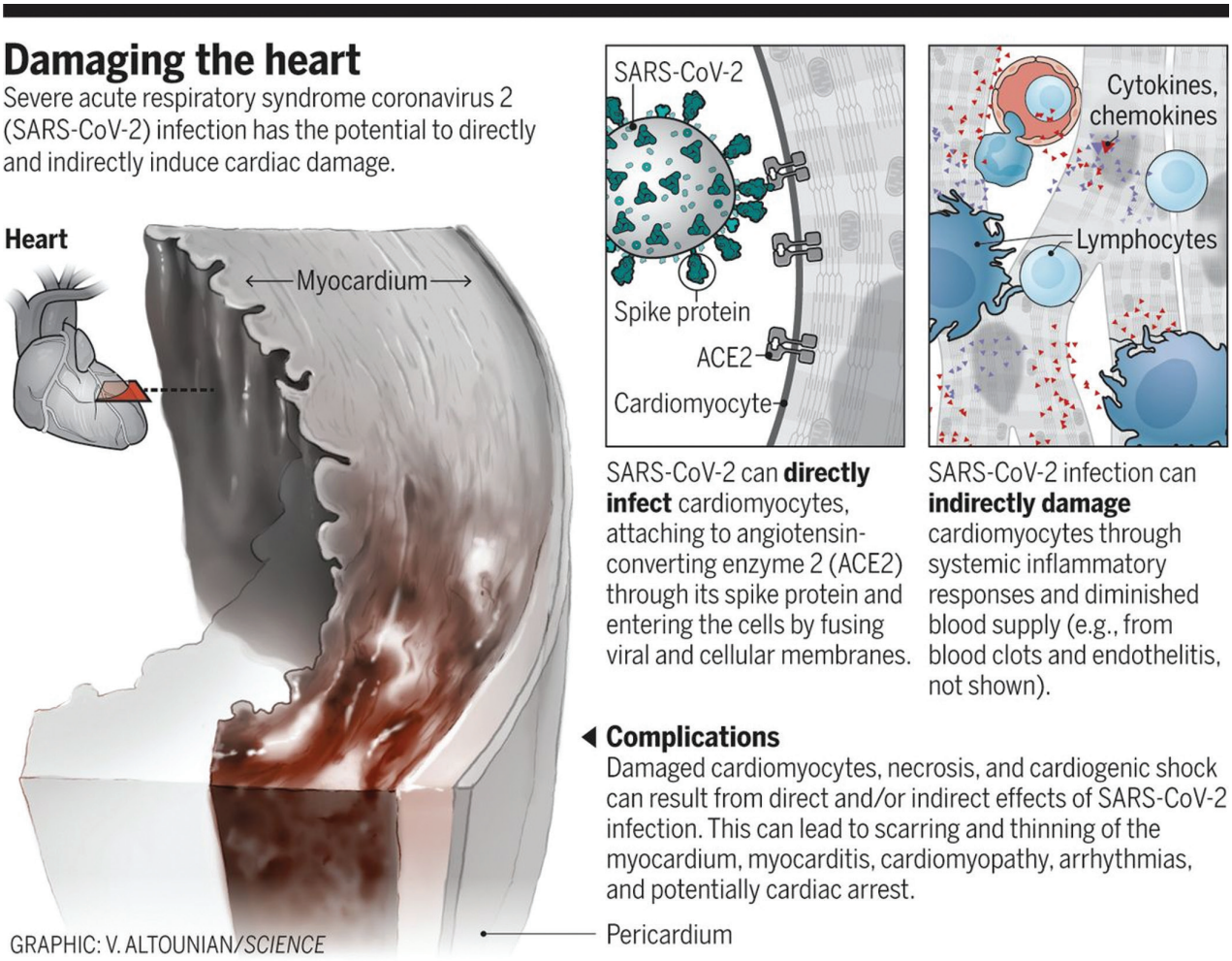


Source: www.worldometers.info

CORONA Q&A

Why do certain individuals have a propensity for heart involvement after SARS-CoV-2 infection?

The family of seven known human coronaviruses is known for impact on the respiratory tract, not the heart. However, the most recent coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has marked tropism for the heart and can lead to myocarditis (inflammation of the heart), necrosis of its cells, mimicking of a heart attack, arrhythmias, and acute or protracted heart failure (muscle dysfunction). These complications, which at times are the only features of COVID-19 clinical presentation, have occurred even in cases with mild symptoms and in people who did not experience any symptoms. Recent findings of heart involvement in young athletes, including sudden death, have raised concerns about the current limits of our knowledge and potentially high risk and occult prevalence of COVID-19 heart manifestations.



The four "common cold" human coronaviruses—HCoV-229E, HCoV-NL63, HCoV-OC43, and HCoV-HKU1—have not been associated with heart abnormalities. There were isolated reports of patients with Middle East respiratory syndrome (MERS caused by MERS-CoV) with myocarditis and a limited number of case series of cardiac disease in patients with SARS (caused by SARS-CoV). Therefore, a distinct feature of SARS-CoV-2 is its more extensive cardiac involvement, which may also be a consequence of the pandemic and the exposure of tens of millions of people to the virus.

In contrast to people without symptoms, there are a substantial proportion of people who suffer a longstanding, often debilitating illness, called long-COVID. Typical symptoms include fatigue, difficulty in breathing, chest pain, and abnormal heart rhythm. An immunologic basis is likely but has yet to be determined. It would not be surprising in the future for patients to present with cardiomyopathy of unknown etiology and test positive for SARS-CoV-2 antibodies. However, attributing such cardiomyopathy to the virus may be difficult given the high prevalence of infections, and ultimately a biopsy might be necessary to identify virus particles to support causality.

www.sciencemag.org

Is it because of early immune responses that younger people get less sick from COVID-19?

One of the lingering questions of the pandemic is why COVID-19 symptoms tend to be milder in children and young adults than in older people. A new study suggests that the immune systems of people younger than 24 deal the coronavirus a strong first punch. Those early immune defenses, which set off alarm bells for the body to go

on the attack no matter what the invader, may be weaker in older adults.

According to a report published in *Science Translational Medicine,* having more muted frontline defenses could allow an infection with SARS-CoV-2, the virus that causes COVID-19, get a foothold, resulting in worse symptoms for older people. The results add to evidence that boosting early immune responses to the virus with a vaccine or drugs like interferons, which are based on proteins the body produces to stimulate immune cells, could help protect people.

Researchers have had some ideas why younger people generally get less sick. It's possible that compared with adults and older kids, younger children have lower amounts of the ACE2 protein in their upper respiratory tracts. That's a protein that the virus uses to break into cells. Another explanation could have been that young people have less virus in their bodies, which could mean milder symptoms, although studies have shown that viral load is similar across people no matter their age. Or differences in the immune system, which tends to become less robust with age, could play a role.

Recently a new study has been done by pediatric infectious diseases physician and virologist Betsy Herold and colleagues at Montefiore Medical Center in New York City. When the team compared the immune responses among groups, it found that younger people, including those with

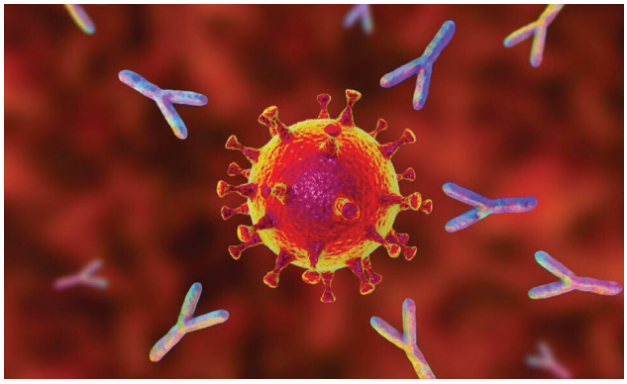
the inflammatory syndrome, had higher amounts of an immune signaling molecule called IL-17A than older adults. That protein is typically associated with T cells — immune cells that recognize fragments of specific viruses and can kill infected cells or help activate other parts of the immune system. T cells normally are part of a second wave of defense launched by the immune system.

But IL-17A is also produced by immune cells from the body's first line of defense. Both older and younger people had similar numbers of T cells linked to the signaling molecule. That means the abundance of IL-17A seen in young people likely came from immune cells tied to the body's early defenses against the virus, the researchers suggest. Compared with adults who had severe COVID-19, younger patients who did not need a ventilator also had lower levels of other immune signaling proteins involved in inflammation, like one called IL-6 that has been linked to an overactive immune response. That overreaction is responsible for severe symptoms in many of the sickest COVID-19 patients.

Adults in the study were more likely to have high-risk conditions like diabetes and high blood pressure, which could help explain the differences in disease compared with younger people. Older adults did ultimately mount a stronger virus-specific immune response later in infection, compared with younger people. How helpful that response actually is remains unknown. Older adults, especially those on a ventilator or who had died, had a stronger response of T cells that recognized a protein on the virus' surface, called the spike, compared with younger people. People older than 24 also made more antibodies that prevent the virus from infecting new cells, called neutralizing antibodies.

www.sciencenews.org

Are Monoclonal Antibodies promising for treating COVID-19?



Credit: DR_MICROBE/ISTOCK/GETTY IMAGES PLUS

Amid the rush to test and develop potential treatments for COVID-19, lab-made antibodies are showing hints of success. In news releases, two companies announced preliminary results, which suggest the experimental drugs may help patients both early and late in infection.

One clinical trial of monoclonal antibodies, human-made versions of immune system defenders produced by the body, suggests that the drugs can help keep people hospitalized with COVID-19 from needing a ventilator or from dying. And a second trial appears to show that the drugs can bring down levels of the coronavirus in recently infected people, and help reduce the chances that a person would need hospitalization.

Antibodies are part of the body's natural defense against infectious pathogens. The proteins typically attach to parts of bacteria or viruses to fight off infection. In the lab, scientists can engineer versions of antibodies to recognize specific targets in order to hinder the virus' replication or prevent the body's immune system from overreacting to the virus. A monoclonal antibody drug called tocilizumab is one of the latter types; it blocks a part of the immune response that can cause inflammation, a protein known

as IL-6. By curbing inflammation, the drug could help people whose immune systems have become overactive through a process called a cytokine storm, which can cause severe COVID-19 symptoms.

In a previous Genentech-related trial that included 452 people with severe COVID-19, tocilizumab did not help improve symptoms or prevent death, researchers reported in a preliminary study posted September 12 at medRxiv.org. Other trials of the drug have reported improved outcomes in people with moderate or severe COVID-19 symptoms.

Scientists working on another monoclonal antibody, which targets the coronavirus' spike protein, also recently reported promising results. Called LY-CoV555, the drug can reduce the amount of virus in the bodies in newly infected people and help prevent COVID-19 hospitalizations. People in this ongoing Phase II clinical trial to determine efficacy receive either a low, medium or high dose of the antibody or a placebo. So far, those who get a medium dose of LY-CoV555, which is based on an antibody from one of the first COVID-19 patients, appear to clear the virus faster than those on the placebo, according to the release. Fewer treated patients still had high viral loads later on in the study. Most people, including those on a placebo, cleared the virus from their bodies by day 11.

According to the researchers, "It's really intriguing and tantalizing information but without the full details of the study, like patient age or whether any people had underlying conditions, it's difficult to know how solid the findings are. It's surprising that people on the medium dose had a benefit from the drug but those on the higher dose didn't, but that could be because the results are preliminary and could change as people are added to the trial, but in principle, it looks hopeful."

There are many other monoclonal antibody trials ongoing around the world, many of which feature drugs that bind to a variety of both virus and host proteins. Experts are carefully watching for results, keen to know for sure whether such treatments can help patients.

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How easily can COVID-19 spread when people sing together?

Credit: JA Russi/Flickr, CC BY 2.0

A recent study, which included filming droplets and aerosols emitted when someone sings, shows how singing might be an infection risk. This is especially if many people sing together, in a poorly ventilated room.

Researchers took high-speed video of a person singing a major scale. They tracked the emissions of droplets and aerosols. They found in certain notes more aerosols than others had been generated. They also found that the direction of emissions changed with different consonants. Infection control guidelines assume respiratory droplets settle rapidly within one to two metres of the person emitting them. However, most droplets appeared not to settle rapidly, and tended to follow the ambient airflow. Therefore, without adequate ventilation, these droplets may persist in aerosol clouds.

These observations may partially explain the higher infection rates of COVID-19 during group singing, even when people singing appear well.

These findings are based on one person singing and individuals may generate aerosols differently. However, these findings apply to singing in any groups, such as churches, schools and social gatherings, all of which are vulnerable to outbreaks of COVID-19.

Since March, the potential for group singing to transmit SARS-CoV-2 has been known. In a well-documented US example, 87% of 61 people who attended one 2.5 hour choir practice became infected, with two deaths. One singer had mild symptoms during rehearsal.

Social distancing is effective in reducing the risk of spread during normal social interactions. However, singing in a group and in closed, poorly ventilated environments may generate more aerosols than speaking. When we sing, we vocalise louder and often hold notes for longer. This, together with many singers close together in confined spaces for an hour or more creates conditions that may increase the spread of SARS-CoV-2.

Researchers estimated the infection risk could have been halved with a shorter choir practice. They tend to think of only coughs or sneezes as the primary source of generating aerosols. But even breathing generates aerosols, albeit at lower concentrations. In fact, we breathe and speak much more than we cough or sneeze. So the cumulative aerosol exposure for a group of people singing and talking, without coughing or sneezing, in a closed environment may be higher than from a single cough. Other options for safer group singing now and in the future include – singing outside or in a well-ventilated room with large open windows as this is likely to dissipate aerosols and further reduce the risk, physical distancing of at least two metres while singing, short performances to minimise exposure, singing softly (and using amplifiers) as this is likely to emit fewer aerosols, using rapid test kits, if available, which would allow singers to be screened before performing, assessing risk factors for individual singers based on age, chronic diseases and other risk factors for COVID-19. It is more important people at high risk of complications from COVID-19 avoid group singing while there is community transmission.

www.science.thewire.in

Can strict social distancing effectively lower chances of infection?

Credit: Photocreo Bednarek / stock.adobe.com

A recent study published in *Clinical Infectious Diseases* by researchers at the Johns Hopkins Bloomberg School of Public Health suggested that using public transportation, visiting a place of worship, or otherwise traveling from the home is associated with a significantly higher likelihood of testing positive with the coronavirus SARS-CoV-2, while practicing strict social distancing is associated with a markedly lower likelihood.

The researchers surveyed a random sample of more than 1,000 people asking about their social distancing practices, use of public transportation, SARS-CoV-2 infection history, and other COVID-19-relevant

behaviors. They found that those reporting frequent public transport use were more than four times as likely to report a history of testing positive for SARS-CoV-2 infection, while those who reported practicing strict outdoor social distancing were just a tenth as likely to report ever being SARS-CoV-2 positive. The researchers asked the survey participants questions about recent travel outside the home, their use of masks, social distancing and related practices, and any confirmed infection with SARS-CoV-2 either recently or at all. The results indicated that 55 (5.3 percent) of the 1,030 participants had tested positive for SARS-CoV-2 infection at any time, while 18 (1.7 percent) reported testing positive in the two weeks before they were surveyed.

“Study supports the idea that if you're going out, you should practice social distancing to the extent possible because it does seem strongly associated with a lower chance of getting infected," says study senior author Sunil Solomon, associate professor in the Bloomberg School's Department of Epidemiology and an associate professor of medicine at Johns Hopkins School of Medicine.

The results are consistent with the general public health message that mask-wearing, social distancing, and limiting travel whenever possible reduces SARS-CoV-2 transmission.

www.sciencedaily.com

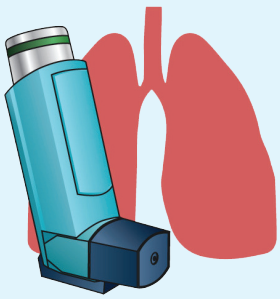
COVID-19 MYTH BUSTERS

MYTH

Persons affected with myocarditis/ pericarditis previously, are more vulnerable to contracting it a second time

Children with asthma are not at risk because COVID-19 only affects older people

Quick relief rescue inhalers can cause the immune system to be suppressed and result in patients with asthma being more susceptible to COVID-19



FACT

There is no evidence that an individual who has suffered from myocarditis or pericarditis in the past is at higher risk of developing the same complication with COVID-19. It is recognised that some cases of myocarditis have a relapsing and remitting course. To date there is no evidence that the virus responsible for COVID-19 directly infects the heart; however, the acute inflammatory response caused by the infection may worsen cardiac function and exacerbate symptoms in patients with heart failure.

www.escardio.org

We must remember that COVID-19 is a respiratory disease. Children (and adults) with moderate to severe persistent asthma or any underlying chronic lung disease may be at higher risk for complications from COVID-19. However, individuals with asthma or other lung diseases are not at higher risk of contracting the virus.

www.lung.org

These medications are bronchodilators and not corticosteroids. They relax the muscles in your airways when you're having symptoms. You can and should continue to use your rescue inhaler as needed for asthma symptoms. The most important thing is to have your asthma well-controlled so that if infection does occur, your lungs are better able to handle the virus.

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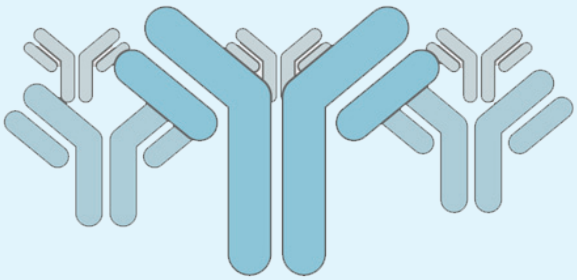
MYTH

Antibody testing will tell me exactly when I was infected

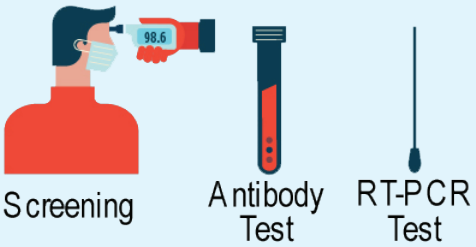


FACT

No, if a patient takes one antibody test (that tests for both IgG and IgM antibodies together), and the test comes back positive, the clinician does not know if the patient has been more recently infected or has an immune response to a prior infection. This is because, generally, IgM is the first antibody developed against an antigen and is detectable earlier, while IgG is developed later after the infection occurs and can be detectable for months and/or years, depending upon the antigen and the individual.

www.beckmancoulter.com

If I take a PCR test, I do not need to take an antibody test



False, while it is important to take a PCR test if you believe you have an active infection, studies are showing a high false-negative rate of realtime reverse transcription-polymerase chain reaction (RT-PCR) results for SARS-CoV-2 detection. Therefore, complementing PCR testing with IgM testing can provide greater clarity into patient status.

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Stop taking oral, inhaled and/or intranasal corticosteroids due to increased COVID-19 risk since they immunosuppress patients

Control is the most important thing for your asthma and allergic rhinitis. If you use inhaled corticosteroids, or intranasal steroids, there's probably not a risk to developing a weakened immune system. If you use oral corticosteroids, there's a slight increase of a suppressed immune system. If you're in an asthma flare, your healthcare provider can help you decide which medications are the right choice to help you breathe. Do not stop or avoid taking your medication without discussing with your healthcare provider.

www.lung.org

MYTH ✗

Changing your heart medication can prevent you from COVID-19

FACT ✓

What is clear is that stopping or changing your medication could be very dangerous and could make your condition worse. These drugs are very effective for heart failure, and to control high blood pressure to help prevent a heart attack or stroke, and so on. Any changes to your treatment that have not been recommended by a healthcare professional could put you at higher risk of a flare-up of your heart condition. There have been reports in the media suggesting that some commonly used drugs to treat high blood pressure (so-called ACE-Inhibitors and Angiotensin Receptor Blockers) may increase both the risk of infection and the severity of infection with the Coronavirus. However, this warning does not have a sound scientific basis or evidence to support it. Therefore, it is strongly recommended that you continue to take your blood pressure medication as prescribed.

www.escardio.org

Using nasal sprays may push the COVID-19 virus further up your nose

Nasal sprays are often used to treat symptoms related to common colds/ viruses, including congestion and runny nose. Spring allergy season has begun in many parts of the country – these medications can assist in control of symptoms and, therefore, help prevent asthma flares. Continue to take your prescribed medications and contact your healthcare provider to discuss before discontinuing or avoiding.

www.lung.org

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