

BIOTECH EXPRESS

Editors in News:
India's top biotech
Scientist Prof Ashok
Pandey elected as Fellow
of Indian National
Science Academy (INSA)

Guestorial:
Global Human
Organoids Market to
Grow with a
CAGR of 18 %
During
2023-2035

Editorial:
**Is this time to
boycott mainstream
and social media for
science news ?**

Editors in News:
Biotech Express Chief Editor
Dr Seema Pavgi Upadhye
received Indian Women in
Dubai Awards 2023





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NHBT-2023

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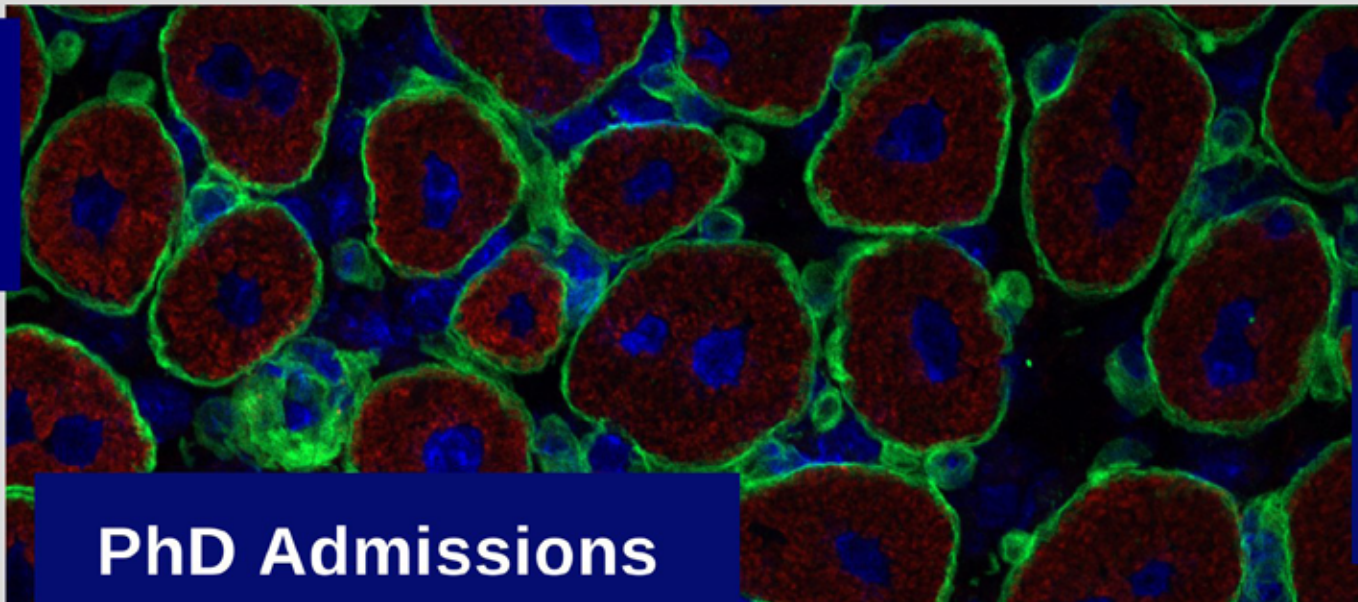
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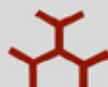
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- Announcement of results: 10 November 2023
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Editorial

Is this time to boycott mainstream and social media for science news

by Kamal Pratap Singh

Recently, the decision by the 28-party Opposition alliance, INDIA, to draw up a list of 14 television anchors they will boycott, has made a huge turmoil around the country. Admittedly, many on the list practise, or are incentivised to practise, an upside-down journalism which seeks to flatter the government and discredit the Opposition, almost by rote. They — and those who sign their paychecks — have, perhaps, seen it as worth their while to abdicate their professional responsibility to ask questions of those in power that need to be asked. Many of them tread, and slip on, thinning lines, whipping up hate hour by hour. Indeed, for these very reasons, what INDIA has done is a stunning self-goal. In a democracy where spaces for dissent and disagreement are increasingly coming under threat, the Opposition's boycott list strengthens that which it claims to oppose. It shrinks the space for honest, good journalism and journalists — it threatens press freedom.

'Jamaat' की घटिया हरकतों की गवाहियां



But why we are discussing political issue in a science magazine? The answer you will find subsequently when we will discuss about the rise of COVID in India and when we will learn about Farmer protest political rallies and other social gatherings where only one group was targeted and leaders in power were not blamed for number of cases.

Not so popular in Indian media but many news reports are coming from all around the world about conspiracies surrounding COVID 19 pandemic suggesting propagation of false agendas, cover ups etc. to gain power and monetary benefits out of emergency. And all this was done with the help of main stream media and social media.

According to a joint analysis conducted by the counter-disinformation consulting firm Alethea Group and the nonprofit Global Disinformation Index (GDI), at least five companies behind some of the internet's top sources of false, misleading or conspiratorial information related to COVID-19, including the Epoch Times, Newsmax and the Federalist, received sizable loans in hundreds of millions from the US government as part of the Paycheck Protection Program. "What they found is that some of the companies that took PPP loans from the federal government were

publishing false or misleading information about the pandemic, thus profiting off the infodemic," said Cindy Otis, a former CIA analyst who is now vice president of analysis at Alethea Group. "These outlets are getting money from the government in response to a pandemic that they are having an active role in prolonging," said Danny Rogers, chief technology officer at GDI, which uses a combination of expert analysis and machine learning technology to track the spread of disinformation narratives online.

Tablighi Jamaat- the super spreader

Now coming to the point of Hindu- Muslim propaganda, 14 news anchors have been rejected by India alliance and that is where our science based observation in this scenario starts. This Hindu- Muslim fight was also seen during start of pandemic or to say start of pandemic. A religious congregation the "Markaz event" organized by Jammata e Islami, a global religious organization in Delhi, between March 1 and 21, which brought more than 5,000 people from various countries to India's capital was dubbed by Indian media as a coronavirus hotspot and as the epicenter for the spread of coronavirus to different parts of the country. However, later findings suggest that there was an issue on "sampling bias." Daniyal (2020) and

Jain (2020) writes that a large proportion of Tablighi attendees were positives because they were tested, whereas overall testing for the rest of India is low. People from other gatherings were neither tested nor traced by authorities, whereas those that went to Tablighi people were visible and vilified.

Adding one more fact here, probably these Tablighi attendees were tested by faulty testing kits that were used in the earliest phase of testing. At that time no testing kits other than these faulty kits were available in the country. ICMR's Raman R Gangakhedkar publicly admitted that "too many variations have been reported in results of rapid (anti-body) test kits and RT-PCR (reverse transcription – polymerase chain reaction) kits. Raman R Gangakhedkar was awarded 2020 Padma Shri award. ICMR's statement on cancellation of the procurement order for five lakh antibody test kits imported from Chinese firm Wondfo through an Indian importer and distributor came this evening after the Congress alleged a scam in the matter and asked Prime Minister Narendra Modi to order a probe besides making all Covid medical equipment procurement public.

The ruling party, Bharatiya Janata Party (BJP) and its close affiliates, Rashtriya Swayamsevak Sangh (RSS) criticized the organizers of Markaz event while the state filed the First Information Report (FIR) against the head of Tablighi Jamaat, Maulana Saad. Later, supreme court and other High Court quashed FIRs against Tablighi Jamaat attendees, saying they were made 'scapegoats' by the government and CRITICISED MEDIA for their 'big propaganda'. A Delhi magistrate's court found "no prima facie evidence" against eight of the accused and after few days a metropolitan court in the capital exonerated the other 36 saying "None of them were present at the markaz on the relevant period and they had been picked up from different places so as to maliciously prosecute them upon directions from the Ministry of Home Affairs".

During this period Muslims and their families were attacked in parts of the country. In some cases, Muslim women were attacked and pregnant Muslim women were denied timely healthcare, ultimately leading to the loss of their babies' lives. Multiple cases of healthcare professionals discriminating against Muslims were reported across the country. In one such case in Ahmedabad, Hindu and Muslim coronavirus patients were allegedly separated from each other. Muslim students, too, faced discrimination while appearing for the class XII Board exams. According to media reports, in the wake of coronavirus spread, Muslims converted to Hinduism in several villages of Haryana, for a variety of reasons.

An X (formerly known as Twitter) user shared a video of ISRO Chairman S Somanath claiming that he and other ISRO scientists were dancing in joy after the successful landing of Chandrayaan-3 on the Moon's surface on August 23. In its investigation, the PTI Fact Check Desk found that the video shared in social media post was an old visual from a cultural programme related to a G20 event organised in the first week of July in Bengaluru.

Feeling oppressed, a complaint was filed with the News Broadcasting Standards Authority (NBSA) in which Aaj Tak was accused of intending to "develop hatred in the minds of the people against a particular community" during the COVID-19 pandemic in India. Between 4 and 5 April 2020, TV channel Aaj Tak had broadcast reports about Tablighi Jamaat. On 16 June 2021, the NBSA DIRECTED THAT AAJ TAK'S BROADCASTS BE TAKEN DOWN from all Internet platforms that

linked a COVID-19 outbreak with Tablighi Jamaat in 2020, citing potential "errors in the figures telecast". The NBSA said that the media has "complete freedom to report on the Covid pandemic", but "such reporting must be done with accuracy, impartiality and neutrality", and added "NBSA noted that the broadcaster had admitted that there may have been chances that there were some miscalculations as pointed out by the complaint, which were inadvertent, and the broadcaster had no intention to communalize the issue or malign any community.

Now coming to non-muslim gatherings, on Apr 22, 2021 in a press conference chaired by All India Congress Committee (AICC) Gujarat in-charge Rajeev



Satav, Congress blamed the BJP government for creating a crisis in Gujarat by conducting the cricket matches at Narendra Modi Stadium despite the imminent threat of the virus spreading in the state. He said, first, they conducted the Namaste Trump event and got thousands infected, and later they held cricket matches amid rising cases. Fortunately not many national media platform blamed the ruling government or supported Rajeev Satav's claims.

Mahakumbh 2021

During devastating second wave of Coronavirus at least 9.1 million pilgrims visited Haridwar for the Mahakumbh from January 14 to April 27, 2021. The mega event was widely criticised for rampant violation of Covid-19 protocols and massive overcrowding during an alarming surge in cases. Critics said Prime Minister Narendra

Modi's reluctance to cancel the gathering was because of possible backlash from Hindu religious leaders like Mahant Das who said in one interview that "How is it right for the government to hold election rallies and elections in West Bengal then? Why is it that only we, the devout, are being told that it was wrong to gather?" Mahant Das is known to divert Hindu votes to party. AGAIN MAINSTREAM MEDIA DID NOT QUESTION THE WRONGDOING IN ORGANIZING THE EVENT.

Political Rallies

It was the time when Covid cases were surging in India but Prime Minister Narendra Modi and his political opponents were on the campaign trail. The ruling Bharatiya Janata Party planned the "biggest ever political rally" in the northern state of Punjab where as many as 300,000 people were expect-

COVID Timeline

Nationwide lockdown:

- Phase 1: 25 March 2020 – 14 April 2020 (21 days)
- Phase 2: 15 April 2020 – 3 May 2020 (19 days)
- Phase 3: 4 May 2020 – 17 May 2020 (14 days)
- Phase 4: 18 May 2020 – 31 May 2020 (14 days)

Unlock:

- Unlock 1.0: 1 June 2020 – 30 June 2020 (30 days)
- Unlock 2.0: 1 July 2020 – 31 July 2020 (31 days)
- Unlock 3.0: 1 August 2020 – 31 August 2020 (31 days)
- Unlock 4.0: 1 September 2020 - 30 September 2020 (30 days)
- Unlock 5.0: 1 October 2020 - 31 October 2020 (31 days)
- Unlock 6.0: 1 November 2020 - 30 November 2020 (30 days)
- Unlock 7.0: 1 December 2020 - 31 December 2020 (31 days)
- Unlock 8.0: 1 January 2021 - 31 January 2021 (31 days)
- Unlock 9.0: 1 February 2021 - 28 February 2021 (28 days)
- Unlock 10.0: 1 March 2021 - 31 March 2021 (31 days)
- Unlock 11.0: 1 April 2021 - 30 April 2021 (30 days)
- Unlock 12.0: 1 May 2021 - 31 May 2021 (31 days)
- Unlock 13.0: 1 June 2021 - 30 June 2021 (30 days)

ed to gather. This was the time when the neighboring capital, New Delhi, was under a strict night-time and weekend curfew. Its chief minister Arvind Kejriwal, who belongs to a rival party and is just back from heavy campaigning across the north, announced that he'd tested positive for the virus. Prime Minister Narendra Modi, campaigning in Bengal on April 18, 2021, raised a few eyebrows after he seemed to praise the large crowd at his rally in Asansol - on a day India reported a record 2.34 lakh new Covid cases and the active caseload spiked to an all-time high of 16.8 lakh. AGAIN MAINSTREAM MEDIA DID NOT QUESTION THE WRONGDOINGS OF POLITICIANS.

Farmers' Protest

In what is believed to be the biggest protest in history, in late November 2020 farmers from across India drove 200,000 trolleys and tractors towards Delhi's borders in a mass protest against agricultural reforms. The strike continues, despite the global public health

crisis, fear of COVID-19 has not deterred farmers, who have emphatically stated that regardless of whether they contract the virus, the "black laws" will kill them anyway. Protesting farmers camping at the border points of Delhi at Singhu and Tikri said COVID IS BEING "OVER-GLORIFIED" SO THAT THE GOVERNMENT CAN FINISH ALL THE OPPOSITION AND PROTESTS AGAINST THEM.

Even as India battles the surge in Covid-19 cases, the ruling AAP has extended support to the farm stir being planned by Samyukt Kisan Morcha Today wrote by AAJ TAK WHICH DID NOT OPPOSE RALLIES AND KUMBH BUT FARMERS' PROTEST.

Flouted COVID Figures

Coming to COVID figures, it is evident from following example that how news platforms fabricated figures despite lack of expertise or knowledge. The Hindi-language daily *Dainik Bhaskar*, splashed its Apr. 15 [front page](#) with a night-time shot of a crematorium





in the city of Bhopal, dotted with the ghoulish orange glow of pyres. The banner headline declared, “The government’s data are fake, the pyres tell the truth.” That day, Bhopal officially reported four COVID-19 deaths. But the paper found that the three crematoriums in the city had conducted the funerals of 112 COVID-19 victims.

Media Profiteering From Pandemic

Allen Munoriyarwa examines the framing of the COVID-19 pandemic in two mainstream Zimbabwean weekly newspapers. The chapter answers two questions: In what ways did the mainstream media in Zimbabwe frame the COVID-19 pandemic? To what extent did the coverage sync with the public sphere model of biocommunicability? He noted that the private mainstream press largely adopted a thematic framing approach of the ruling regime’s COVID-19 plan, by highlighting corruption, mismanagement, and overt politicisation of the pandemic. The state-controlled public press broadly adopted an episodic framing approach that focused on the state’s COVID-19 intervention over time, mostly presenting

these interventions as a success story.

If you can recall, similar situation was present in India, two or three big political parties in India were fighting with each other for failure of health care facilities while praising themselves for success. HCQ, Ventilators, oxygen supply, number of beds in hospitals all were used as a weapon against each other and this they were doing using national news platforms.

Social media Plandemic

Study revealed that social media use has a significant impact on the development of panic among people regarding the COVID-19 epidemic, with possibly detrimental psychological and mental health repercussions. A study published by NIH doi: [10.1007/s43076-022-00192-5](https://doi.org/10.1007/s43076-022-00192-5) study also discovered a strong correlation between COVID-19 fear and social media. According to the findings, the impact of social media on respondents’ terror levels differs depending on their age and gender. The government should take steps to punish those who spread false information or fake news to the public.

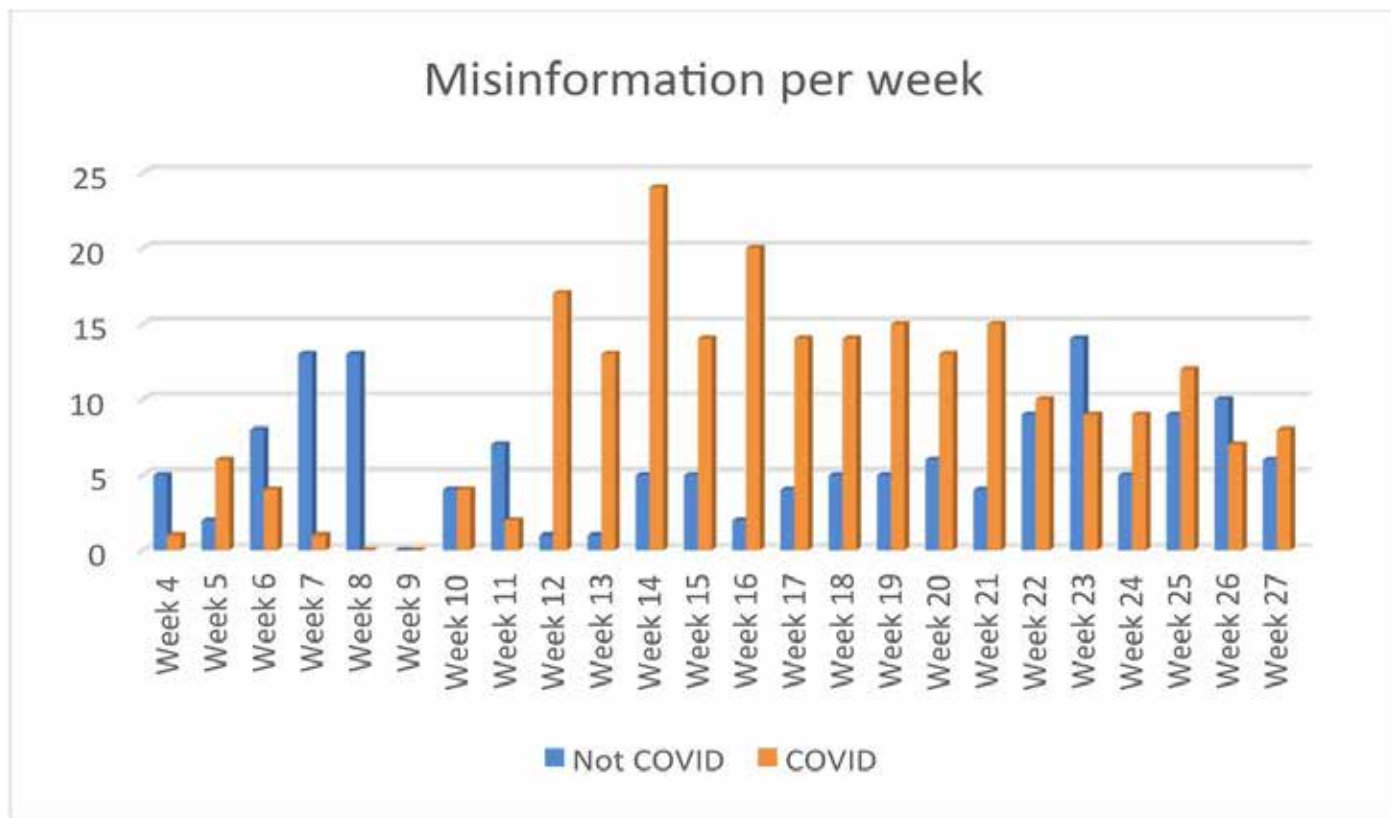


Image Source: <https://www.medrxiv.org/content/10.1101/2020.10.20.20215962v1.full>

Media Criticizing Media and Pro-Modi Campaign

Time magazine wrote, Many Hindi- and English-language news channels, as well as regional news outlets, are unabashedly pro-Modi. They have routinely exaggerated the government’s successes and either glossed over its failures or spun ways to pin them on Modi’s discontents: the opposition, liberals, Muslims, activists, leftists, protesters, NGOs, and other assorted “anti-nationals.”

Just as common as misinformation is the cheerleading for Modi’s every move. Whatever the prime minister does is a “masterstroke.” And so it has been with the handling of the pandemic. India’s first COVID-19 case was confirmed in January last year, but his government dismissed the opposition’s warnings about the coming disaster well into March. “There’s no need to panic,” the country’s health minister tweeted on Mar. 5, 2020. But just a couple of weeks later,

Modi declared one of the world’s most severe lockdowns with a mere four hours’ notice.

The incomes of millions living in precarity vanished in an instant, triggering an unprecedented mass migration of daily wage earners from the cities back to their villages. Hundreds died trying to get home amid the lockdown. The economy crashed 24%. The number of poor people increased by 75 million, accounting for 60% of the global increase in poverty that year.

The media protected Modi from any proper public scrutiny of his initial handling of the pandemic. He made repeated television appearances in which he said little of substance and offered no concrete plans to tackle the crisis. Instead, he called for festivals of sound and light, and ordered the armed forces to shower flowers on hospitals—all of it hyped up by dotting anchors as proof of Modi’s strong leadership.

Blog of London School of Economics wrote- India cannot breathe and by censoring the ground realities

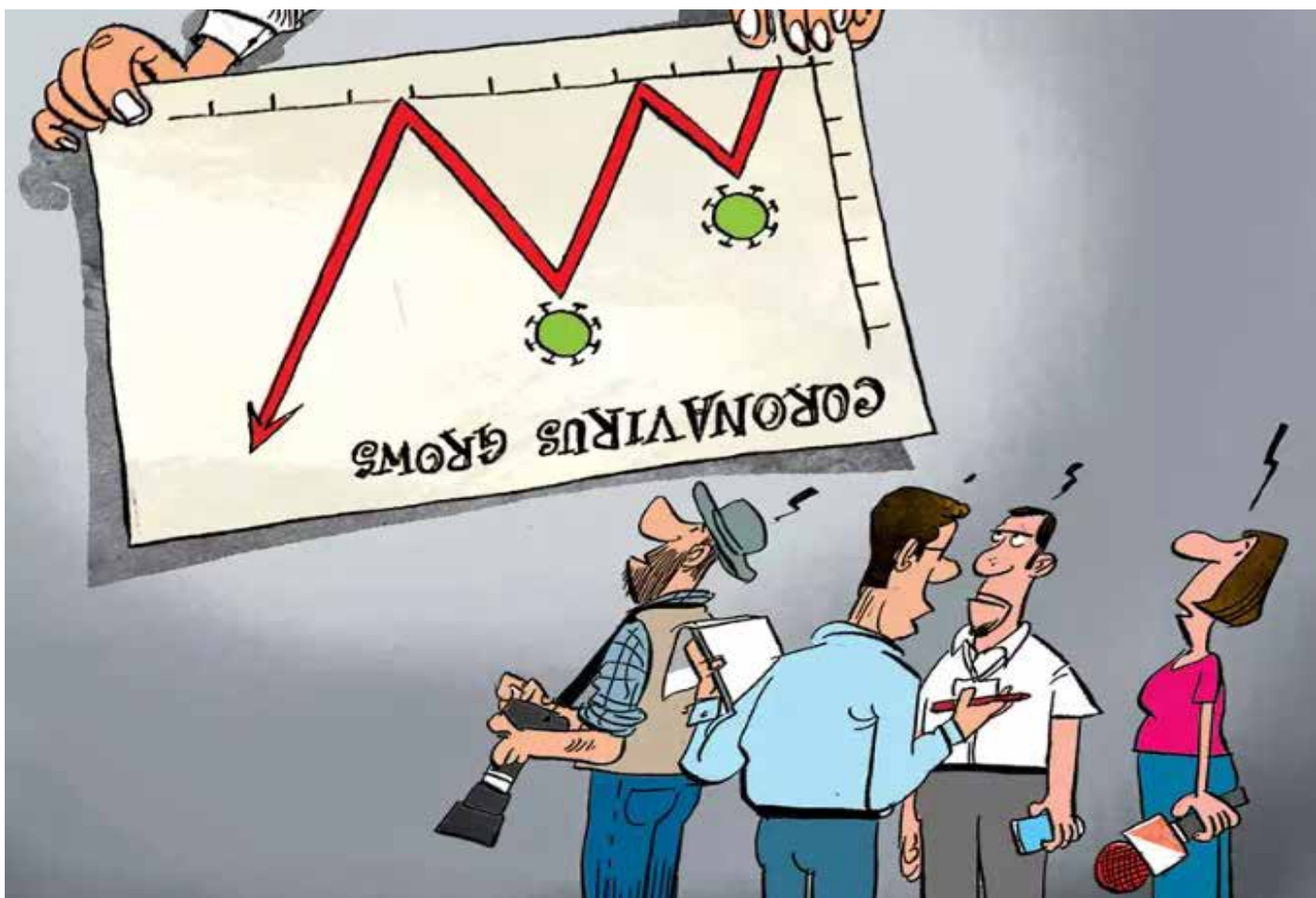


Image Source: <https://timesofindia.indiatimes.com/blogs/toi-edit-page/coronavirus-and-the-media-in-times-of-crisis-a-democracy-needs-a-free-press-more-than-ever/>

and finding a positive political spin in this humanitarian crisis, some in the mainstream media in the country seem to be choking it further.

As the second wave of the COVID-19 pandemic takes India by storm, the raging death and devastation has thrown unprecedented challenges to those on the ground – frontline health care workers, reporters, activists and civil society.

Yet the steady denial of the health catastrophe by the State, arrests of those who request life-saving help on social media, gag-orders on hospitals that ask for more oxygen as their limited supply runs out, a diktat to media houses to ensure positive news coverage and a clampdown on social media from carrying posts showing ground realities, have become continuous features of this Indian COVID-19 tragedy.

Conclusion:

Though it is my conclusion as a writer and I suggest readers to do their homework before reaching any conclusion, I strongly suggest not to depend on media reports while taking any decision toward your health specially. As we can understand many media houses are biased and have experts who can propagate agendas of rulers. For science knowledge it is always advisable to rely on peer publications like reputed journals which have good track records. As we saw during pandemic many reputed journals have also published articles that were found illogical and subsequently retracted so it is good to gather news from different sources and come to a conclusion based on common sense. It is advisable to look for field specific periodicals which are unbiased.

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Editors in News

India's top biotechnologist Professor Ashok Pandey elected as Fellow of Indian National Science Academy (INSA)



Finally, this year INSA has recognized the contribution of Prof Ashok Pandey to the nation by making him Fellow of INSA. Prof Pandey is renowned professor of Biotechnology/Biochemistry & Biology and is ranked #1 scientist according to various rankings such as webometrics, Web of Science- Clarivate Analytics, Stanford University, Research.Com, etc. and continuing to be on the top from last several years. Though it is a matter of great pride to Biotech Express that its Advisory Board member has been elected as

Fellow (FNA) but this has definitely come very late. Nevertheless, we welcome the decision of INSA and let me share with all a bit more about Prof Pandey.

Professor Ashok Pandey, who has an h-index of 132- the highest in biotechnology in India- is currently Distinguished Scientist at Centre for Innovation and Translational Research, CSIR-Indian Institute of Toxicology Research, Lucknow, India; HTBS National Innovation Chair, and Honorary Executive Director

Box: Other Bioscience INSA Fellows of Year 2023

1. Abraham, Priya (b 27.10.1963), PhD, Director and Scientist G, ICMR-National Institute of Virology, Pune.
2. Anand, Ruchi (b 29.06.1975), PhD, Professor, Department of Chemistry, Structural Biochemistry Lab, Indian Institute of Technology Bombay, Mumbai.
3. Ateeq, Bushra (b 26.07.1976), PhD, Associate Professor and Joy Gill Chair Professor, Molecular Oncology Lab, Department of Biological Sciences & Bioengineering, Indian Institute of Technology Kanpur, Kanpur.
4. Bal, Chandrasekhar (b 22.10.1960), MBBS, MD, DSc, Professor & Head, Department of Nuclear Medicine, All India Institute of Medical Sciences, New Delhi.
5. Barik, Saroj Kanta (b 12.04.1965), PhD, Professor, Department of Botany, North-Eastern Hill University, Shillong.
6. Bhatia, Sabhyata (b 07.03.1964), PhD, Staff Scientist-VII, National Institute of Plant Genome Research, New Delhi.
7. Biju, Sathyabhama Das (b 09.05.1962), PhD, Senior Professor, Department of Environmental Studies, Department of Environmental Studies, Delhi.
8. Bisht, Naveen Chandra (b 01.02.1978), PhD, Scientist V, National Institute of Plant Genome Research, New Delhi.
9. Ghosh, Probir Kumar (b 13.12.1962), PhD, Founder Director and Vice-Chancellor, ICAR-National Institute of Biotic Stress Management, Raipur, Chhattisgarh.
10. Guchhait, Prasenjit (b 21.10.1967), PhD, Professor, Regional Centre for Biotechnology, Faridabad.
11. Krishna, Sandeep (b 01.09.1976), PhD, Professor, TIFR-National Centre for Biological Sciences, Bengaluru.
12. Kumar, Arvind (b 21.09.1966), PhD, Deputy Director General-Research, International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Patancheru.
13. Kumbhar, Pramod Shankar (b 02.06.1964), PhD, President and Chief Technology Officer, Praj Matrix - R&D Center, Praj Industries Ltd, Pune.
14. Kumbhar, Pramod Shankar (b 02.06.1964), PhD, President and Chief Technology Officer, Praj Matrix - R&D Center, Praj Industries Ltd, Pune.
15. Luthra, Kalpana (b 27.07.1965), PhD, Professor, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi.
16. Mahapatra, Nitish Ranjan (b 09.01.1971), PhD, Professor, Department of Biotechnology, Indian Institute of Technology Madras, Chennai.
17. Mahapatra, Nitish Ranjan (b 09.01.1971), PhD, Professor, Department of Biotechnology, Indian Institute of Technology Madras, Chennai.
18. Mande, Sharmila Shekhar (b 05.07.1962), PhD, Distinguished Chief Scientist, TCS Research, Delhi.
19. Mande, Sharmila Shekhar (b 05.07.1962), PhD, Distinguished Chief Scientist, TCS Research, Delhi.
20. Mylavarapu, Sivaram Venkata Satya (b 16.01.1974), PhD, Associate Professor, Laboratory of Cellular Dynamics, Regional Centre for Biotechnology, Faridabad.
21. Mylavarapu, Sivaram Venkata Satya (b 16.01.1974), PhD, Associate Professor, Laboratory of Cellular Dynamics, Regional Centre for Biotechnology, Faridabad.
22. Reddy, Dumbala Srinivasa (b 10.04.1971), PhD, Director, CSIR-Indian Institute of Chemical Technology, Hyderabad.
23. Reddy, Maddika Subba (b 06.02.1978), PhD, Staff Scientist-VI & Group Leader, Centre for DNA Fingerprinting and Diagnostics, Hyderabad.
24. Sarkar, Dibyendu (b 01.05.1968), PhD, Chief Scientist, CSIR-Institute of Microbial Technology, Chandigarh.
25. Shivaprasad, Padubidri V (b 11.07.1974), PhD, Associate Professor and Associate Dean of Faculty, National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bengaluru.
26. Vasu, Sheeba (b 17.03.1973), PhD, Associate Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru.

at the Centre for Energy and Environmental Sustainability- India. Formerly, he was Eminent Scientist at the Center of Innovative and Applied Bioprocessing, Mohali and Chief Scientist & Head of Biotechnology Division at CSIR's National Institute for Interdisciplinary Science and Technology at Trivandrum.

His major research and technological development interests are in industrial & environmental biotechnology and energy biosciences, which span over biomass to fuels & chemicals, waste to wealth/energy, industrial enzymes, etc, with current focus on cross-fields research for energy and environmental sustainability and circular economy.

Professor Pandey is/has been Adjunct/Visiting Professor/Scientist in several universities around the globe such as in Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Greece, Hong Kong, Hungary, Ireland, Italy, Japan, Malaysia, Mexico, Netherlands, Nigeria, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Taiwan, UK, USA and Viet Nam and also in several universities in India. He has 16 patents, 120 books, about 1000 papers and book chapters, etc. with >76,500 citations (Google scholar). He has transferred several technologies to industries and has done industrial consultancy for about a large number of projects for Indian/international industries.

Prof Pandey has been Editor/Editor-in-chief of *Biore-source Technology* – Elsevier (2003-2023), Honorary Executive advisor of *Systems Microbiology & Biomanufacturing* – Springer Nature and *Journal of Energy and Environmental Sustainability* – ISEES, Associate Editor of *Biologia*, Subject editor of *Proceedings of National Academy of Sciences* (India) and editorial board member of several international and Indian journals.

Professor Pandey is the recipient of many national and international awards and honours, which include Highly Cited Researcher (Top 1% in the world), Clarivate Analytics (2018-2022); Top scientist in Biotechnology (no 1 in India and no 8 in the world), Stanford University world ranking (2020-2022), Highly Cited Researcher (top 2% in the world), Rank no 1 in India in Microbiology, Elsevier Citation Report (2021);

Highly Cited Researcher (h>100), Google Scholar Citations (2021); etc. He has been Yonsei Outstanding Scholar, Yonsei University, Seoul, Korea (2019) and won Life-time Achievement Award from several organizations, including International Society for Solid Waste Management (2019); the Biotech Research Society, India (2018); Venus International Research Awards (2018), the International Society for Energy, Environment and Sustainability (2017). He won the Most Outstanding Researcher Award from Career360 (2018), Academician of European Academy of Sciences and Arts, Austria award in 2015 and was conferred Honorary Doctorate degree from Univesite Blaise Pascal, France (2007). In 2006, Prof Pandey was selected for the Thomson Scientific India Citation Laureate Award, USA; UNESCO Professor in 2000, won Raman Research Fellowship Award, CSIR (1995); GBF, Germany and CNRS, France Fellowships (1992) and Young Scientist Award (1989), etc.

Prof Pandey is Distinguished Fellow of the Biotech Research Society, India (2021) and Fellow of various academies, which include the World Academy of Sciences (2023), World Society for Sustainable Energy Technologies, UK (2020), Indian Chemical Society (2020), Royal Society of Biology, UK (2016); International Society for Energy, Environment and Sustainability (2016); National Academy of Sciences, India (2012); Association of Microbiologists of India (2008), International Organization of Biotechnology and Bioengineering (2007) and the Biotech Research Society, India (2005).

Professor Pandey is Founder President of the Biotech Research Society, India (www.brsi.in); Founder & Chief Executive of International Forum on Industrial Bioprocesses, France (www.ifibiop.org) and Chairman of the International Society for Energy, Environment & Sustainability (www.isees.in, 2016-2022).



Editors in News

Biotech Express Chief Editor Dr Seema Pavgi Upadhye received Indian Women in Dubai Awards 2023



Dr. Seema has been working for last 30 years as a Researcher, Professor, Dean, Principal, Editor-in-Chief and Writer. In her academic journey, She did M.Sc in Biochemistry from Lucknow University, Ph.D. from Indian Institute of Toxicology Research (IITR), Lucknow and Post Doctorate awarded by CSIR from National Botanical Research Centre (NBRC), Lucknow and School of Biotechnology, Indore University. She has served different Universities and colleges in India and Dubai. She has taught various courses to the students of M.Sc, B.Sc. and B. Tech. (Biotechnology, Environmental Science, life sciences etc.).

Dr. Seema started writing research publications from 1988, including full-length research papers, conference papers, reviews, chapters, and books. The “Textbook of Biochemistry” is a mile-

stone in her life. She joined a new upcoming Biotechnology/ Bioscience magazine Biotech Express in 2013 as Editor-in-Chief and wrote more than 25 intense biological sciences articles. In 2015, She started a science blog, domainofscience.Wordpress.com, the purpose was to express scientific knowledge in simple words and short write-ups. This blog is read in more than 100 countries, she wrote more than 50 articles with more than 10,000 views.

She has also started a Facebook group page, “Good Health,” where She has shared health-related articles and healthy food recipes. She is also writing on Quora and have more than 4 lakh views on her answers. She is writing for a group FFD- Freedom from Diabetes and Is facilitator of Middle East. She has written general and popular science articles in Hindi, English and Marathi and published in various magazines and newspapers.

She has been Selected as Editor in 2023 for IIIP series books for USA/ India. She has taken many online courses to enhance her knowledge of bioscience especially nutrition and environment so that she can write about the current situation.

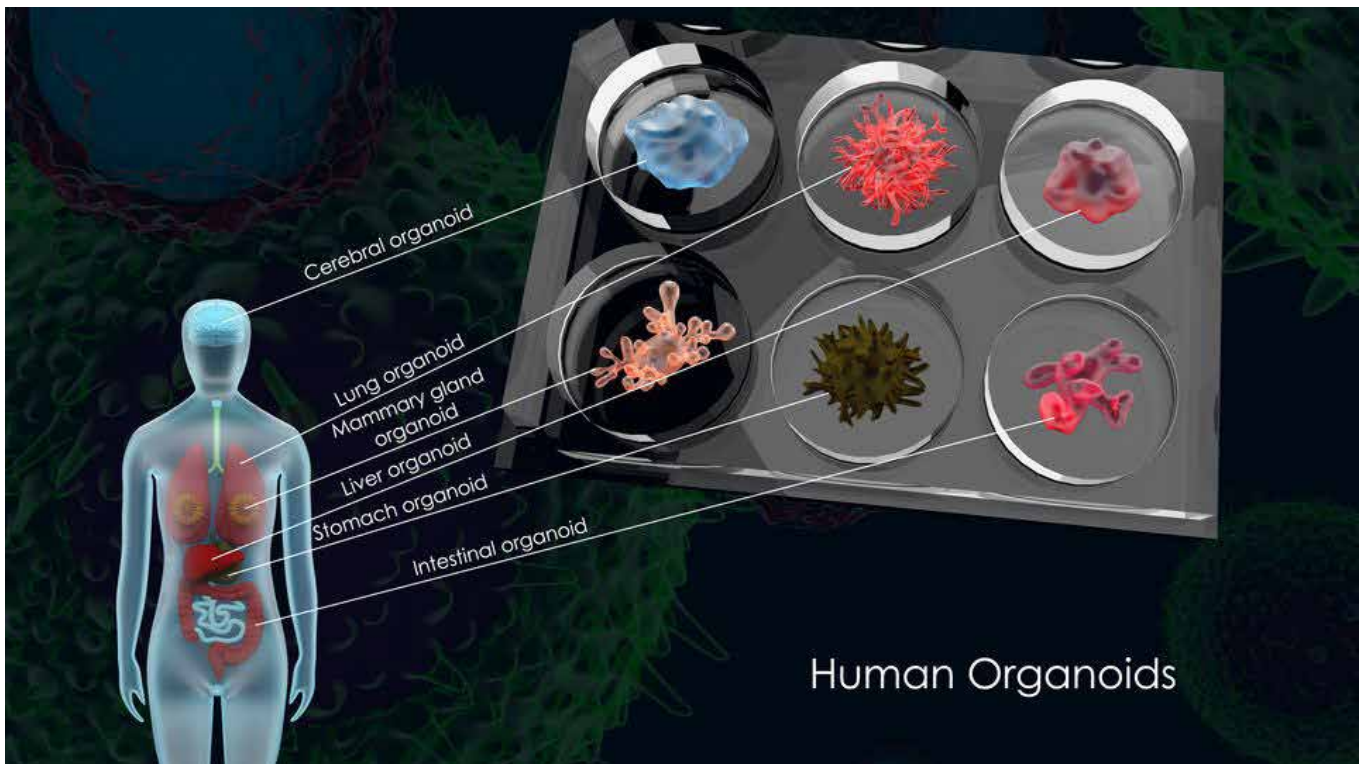
During her journey She got following awards –
- “Author Award 2023” by Indian women in Dubai IWD, largest women community with 60,000 members
- “Nav Durga Award 2022” by MPFS, Dubai

- was nominated for Kalpana Chawla Women Achiever’s Award (2022) by Science India Forum, UAE.

Besides writing work, she speaks on stage on various occasions, She has passion for singing, composing her husband Dr Nitin’s poetry and doing painting for last 3 years.

Guestorial

Global Human Organoids Market to Grow with a CAGR of 18 % During 2023-2035



Increasing Occurrence of Infectious Diseases to Drive the Market Growth

Research Nester released a report titled “Human Organoids Market: Global Demand Analysis & Opportunity Outlook 2035” which delivers detailed overview of the global human organoids market in terms of market segmentation by product, end-user, and by region.

Further, for the in-depth analysis, the report encompasses the industry growth indicators, restraints,

supply and demand risk, along with detailed discussion on current and future market trends that are associated with the growth of the market.

The global [human organoids market](#) is projected to grow with a CAGR of 18% during the forecast period, i.e., 2023-2035 on account of the increasing occurrence of infectious diseases thereby entailing the need for organ transplants and the increasing expenditure in the advancement of technologies. Moreover, the rapid advancement in cellular technologies allows the use of organoid models in var-

ious genetic and infectious medical conditions along with its increasing use in personalized medicine. This fact is expected to contribute significantly to the market growth of human organoids. Furthermore, these can be used for extensive research and development of treatment methods in laboratories, which is further estimated to boost the market growth.

The market is segmented by product into pancreas, kidney, lungs, heart, liver models, and others. Among these segments, the kidney segment is anticipated to hold the largest share by the end of 2035 in the human organoids market as a result of growth in number of kidney transplants.

As per the statistics by the National Kidney Foundation, 100,791 individuals waited for kidney transplants in 2020.

On the basis of end-user, the market is segmented into biotech & pharma industry, academic & research institutes, hospitals & diagnostic centers, & others, out of which the biotech & pharma industry segment is expected to grow with the highest CAGR during the forecast period owing to the increasing emphasis of biotech & pharma industry on research associated with new drug discovery for the treatment of various diseases. The technological developments in the field of 3D bio printing are also projected to contribute to the market segment growth.

On the basis of region, the market is segmented into North America, Europe, Asia Pacific, Latin America, and the Middle East & Africa, out of which, the human organoids market in the Asia Pacific region is projected to grow at the highest CAGR throughout the forecast period owing to rising prevalence of infectious diseases, and the increase in per capita healthcare expenditure in the region. Currently, the market in North America holds the largest share. This can be attributed to the early adoption of transplantation technology in the region, especially in the United States, along with the increasing availability of human organoid products on account of the presence of well-established distribution channels.

Rising Occurrence of Chronic Diseases and the Need

for Organ Transplants to Drive Market Growth

According to the National Center for Biotechnology Information, human organoids provide numerous applications for tissue engineering, drug discovery and regenerative medicine. There were 121,678 people on the waiting list for organ transplant in 2020.

The global count of organ transplants has increased significantly over the years. This can be attributed to the rise in occurrence of infectious disease and outbreak of epidemics globally. Additionally, the increasing expenditure in the advancement of technology, is also expected to boost the market growth in upcoming years.

However, the lack of skilled professionals to conduct diagnostic tests and insufficient funding for research are some of the factors that are estimated to restrain market growth in the near future.

This report also provides the existing competitive scenario of some of the key players of the global human organoids market which includes company profiling of BioIVT LLC, Thermo Fisher Scientific Inc., Corning Incorporated, Emulate Bio, Organovo Holdings Inc., Zen-Bio Inc., Hurel Corporation, Cellink AB, and Biopredic International. The profiling unfolds key information of the companies which encompasses business overview, products and services, key financials and recent news and developments. On the whole, the report depicts detailed overview of the global human organoids market that will help industry consultants, equipment manufacturers, existing players searching for expansion opportunities, new players searching possibilities and other stakeholders to align their market centric strategies according to the ongoing and expected trends in the future.

More Info: <https://www.researchnester.com/reports/human-organoids-market/3240>



Featured Biotech News

Indian-origin lab owner gets 27 years jail for \$463 million biotech fraud in US



Aug 19, 2023

An Indian-origin laboratory owner from the US state of Georgia was sentenced to 27 years in prison for his involvement in a USD 463 million genetic testing scam spanning over three years to defraud Medicare.

The 44-year-old conspired with patient brokers, telemedicine companies and call centres to target Medicare beneficiaries.(HT_PRINT)

The 44-year-old conspired with patient brokers, telemedicine companies and call centres to target Medicare beneficiaries.(HT_PRINT) Minal Patel, who owned LabSolutions LLC, was sentenced on Friday to 27 years in prison for his role in the scheme to defraud Medicare by submitting over USD 463 million in genetic and other laboratory tests that patients did not need and were procured through the payment of kickbacks and bribes.

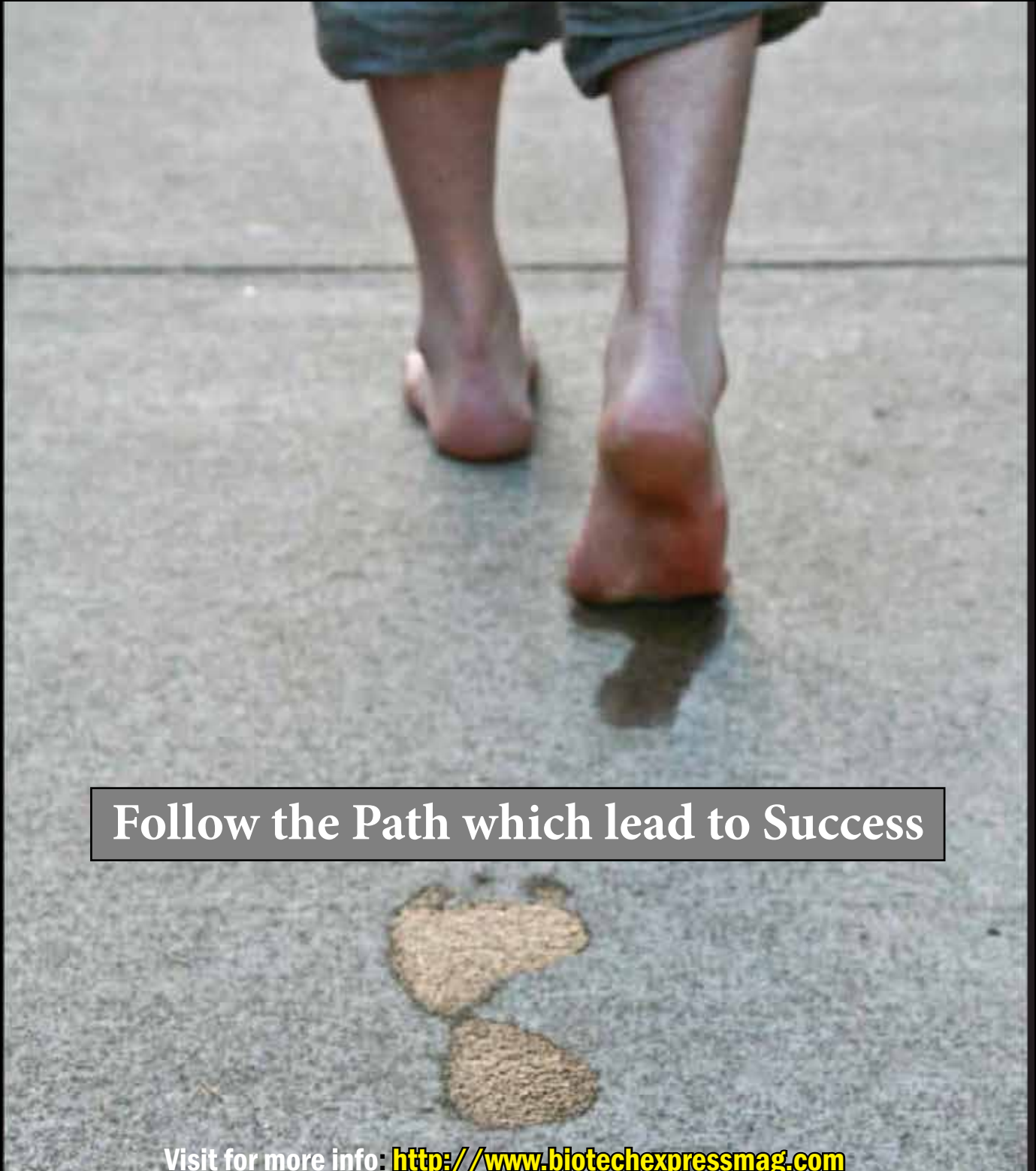
The 44-year-old conspired with patient brokers, telemedicine companies and call centres to target Medicare beneficiaries with telemarketing calls falsely stating that their package covered expensive cancer genetic tests, the Department of Justice said.

After the Medicare beneficiaries agreed to take tests, Patel paid kickbacks and bribes to patient brokers to obtain signed doctors' orders authorising the tests from telemedicine companies, the department said in a press release. To conceal the kickbacks, Patel required the patient brokers to sign contracts that falsely stated that they were performing legitimate advertising services for LabSolutions.

From July 2016 through August 2019, LabSolutions submitted more than USD 463 million in claims to Medicare, including for thousands of medically unnecessary genetic tests, of which the national health insurance programme paid over USD 187 million.

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EU regulator backs AstraZeneca and Daiichi's lung cancer drug



September 15, 2023

AstraZeneca and Daiichi Sankyo's (trastuzumab deruxtecan) has been recommended for approval in the European Union (EU) as monotherapy for the treatment of adult patients with advanced non-small cell lung cancer (NSCLC) whose tumours have an activating HER2 (ERBB2) mutation and who require systemic therapy following platinum-based chemotherapy with or without immunotherapy.

Enhertu is a specifically engineered HER2-directed antibody drug conjugate (ADC) being jointly developed and commercialised by AstraZeneca and Daiichi Sankyo.

The Committee for Medicinal

Products for Human Use (CHMP) of the European Medicines Agency based its positive opinion on the primary results from the DESTINY-Lung02 Phase II trial, which were presented at the IASLC 2023 World Conference on Lung Cancer and simultaneously published in the Journal of Clinical Oncology.

In the trial, Enhertu (5.4mg/kg) demonstrated a confirmed objective response rate (ORR) of 49.0% (95% confidence interval [CI] 39.0-59.1) and a disease control rate (DCR) of 93.1% (95% CI 86.4-97.2), as assessed by blinded independent central review (BICR), in patients with previously treated advanced or metastatic HER2-mutant (HER2m) NSCLC. One (1.0%) complete response (CR) and 49

(48.0%) partial responses (PR) were observed. The median duration of response (DoR) was 16.8 months (95% CI 6.4-not estimated [NE]). Median follow-up was 11.5 months at time of data cut-off of 23 December 2022.

Susan Galbraith, Executive Vice President, Oncology R&D, AstraZeneca, said: "HER2-mutant non-small cell lung cancer is an aggressive form of lung cancer that often affects younger patients and has a poor prognosis, with limited approved therapies. This milestone recognises the unmet need in the European Union and if approved, Enhertu will provide the first targeted treatment option for these patients."

Ken Takeshita, Global Head, R&D, Daiichi Sankyo, said: "Enhertu is the first therapy to demonstrate a strong and durable tumour response in patients with previously treated HER2-mutant advanced non-small cell lung cancer, validating HER2 as an actionable target in lung cancer and supporting the potential to provide a much-needed option for these patients. This CHMP opinion is a positive step forward in advancing this HER2-directed antibody drug conjugate for these patients and we look forward to the European Commission decision."

Philippines Approves Bt Cotton for Commercial Propagation



September 6, 2023

The Philippine Bureau of Plant Industry issued a Biosafety Permit for the Commercial Propagation of Bt cotton (GFM cry1A) developed by the Philippine Fiber Industry Development Authority (PhilFIDA). The permit was granted to PhilFIDA after completion of the biosafety evaluation and the requirements for commercial propagation based on the DOST-DA-DENR-DOH-

DILG Joint Department Circular (JDC) No. 1, Series of 2021. BPI issued the permit on August 24, 2023, and announced the approval on their website.

Bt cotton contains the Bt fusion gene, GFM cry1A, produced based on the protein template of Cry1Ab and Cry1Ac proteins from *Bacillus thuringiensis*. The Bt fusion gene confers resistance to bollworm infestation. Field trials have shown

that this transformation leads to more harvestable bolls and reduces the use of pesticides. The increased cotton yield is projected to enhance the income of cotton farmers and provide more job opportunities, particularly the additional need for cotton pickers.

Visit the BPI website for more information.

Retraction Watch Crossref joining forces to spot scientific retractions easily



September 12, 2023

Retraction Watch, the influential website and database that tracks retractions in scholarly literature, is joining forces with another publishing nonprofit, Crossref, in hopes of helping researchers and journals flag articles that have been retracted and sustain the literature's veracity. The deal announced today will link information about the 42,000 retractions in Retraction Watch's database to Crossref's digital object identifier system in return for \$775,000 over 5 years.

The arrangement "is huge and like a dream come true for what I'd want in retraction information," says Jodi Schneider, an information scientist at the University of Illinois Urbana-Champaign. She led a project in 2020 involving publishers and researchers about how

to reduce scholars' inadvertent citing of "zombie papers," which live on in scholarly works even after retraction. The group's recommendations included maintaining a public, regularly updated database.

Founded by two biomedical reporters in 2018, the Retraction Watch database includes the reason for retraction and is believed to be the largest of its kind. It is the best source of such data because it is expertly curated and covers multiple disciplines, Schneider says. Creating such databases using automated methods has been difficult because retraction notices contain nuances and inconsistencies. "Retraction Watch is the ideal group to be maintaining this database because they are journalist watchdogs who are interested in understanding what's getting retracted," Schneider says.

Until now, Retraction Watch has funded this work by collecting licensing fees from developers who use the database to assist readers. For example, the website Zotero, which allows scientists to store information about papers for future reference, flags retracted papers based on Retraction Watch's data. Retraction Watch will no longer collect those fees. Now that publishers can get the same data for free, this could incentivize them to expand their own methods to catch retracted papers in citation lists and remove them before the citing paper is published, Schneider says. The move also frees scholars from having to sign data-access agreements for research on patterns in retractions (for which Retraction Watch didn't charge).

Zydus gets EIR for injectables manufacturing facility at Zydus Biotech Park



Sep 13, 2023

The EIR report for the inspection conducted at the injectables production plant at the Zydus Biotech Park in Changodar, Ahmedabad, from June 5–13, 2023, has been received by Zydus Lifesciences.

It was a cGMP inspection, and there had been NIL observations at the end of it.

The Zydus Group is a cutting-edge, international life sciences firm that develops, produces, and promotes a wide range of healthcare solutions with the overall goal of giving people the freedom to live healthier and more fulfilling lives.

The organization, which has around 24000 employees globally, is driven by

its purpose to open up new avenues in the life sciences by providing superior healthcare solutions that have a positive influence on people's lives. Through ground-breaking discoveries, the group hopes to alter lives.

Zydus Lifesciences Limited (Formerly known as Cadila Healthcare Limited), a leading Indian Pharmaceutical company is a fully integrated, global healthcare provider. With in-depth domain expertise in the field of healthcare, it has strong capabilities across the spectrum of the pharmaceutical value chain. From formulations to active pharmaceutical ingredients and animal healthcare products to wellness products, Zydus has earned a reputation amongst Indian pharmaceutical companies for providing comprehensive and complete healthcare solutions.

One of the salient features of Zydus is its rich history and lineage. The origin of the company dates all the way back to the 1950s. The company was founded in the year 1952 by Mr. Ramanbhai B. Patel (late), a first-generation entrepreneur and a doyen in the field of Indian Pharmaceuticals.

In 1995, the group was restructured and thus was formed Cadila Healthcare under the aegis of the Zydus group. From a humble turnover Rs. 250 crores in 1995 the group witnessed a significant financial growth and registered a turnover of over Rs. 17,000 crores in FY-21.



Latest Research

Researchers grow embryonic humanized kidneys inside pigs for 28 days

September 7, 2023

Guangzhou Institutes of Biomedicine and Health researchers have successfully created chimeric embryos containing a combination of human and pig cells. When transferred into surrogate pig mothers, the developing humanized kidneys had normal structure and tubule formation after 28 days. This is the first time that scientists have been able to grow a solid humanized organ inside another species, though previous studies have used similar methods to generate human tissues such as blood or skeletal muscle in pigs. The work appears September 7 in the journal *Cell Stem Cell*.

The researchers focused on kidneys because they are one of the first organs to develop, and they're also the most commonly transplanted organ in human medicine.

“Rat organs have been produced



in mice, and mouse organs have been produced in rats, but previous attempts to grow human organs in pigs have not succeeded,” says senior author Liangxue of the Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences, and Wuyi University. “Our approach improves the integration of human cells into recipient tissues and allows us to grow human organs in pigs.”

Integrating human stem cells into pig embryos has been a challenge because pig cells outcompete human cells and pig and human cells have different physiological needs. “We have been working on mechanisms to overcome the extremely low efficiency in interspecies chimera,” says senior author Guangjin Pan of the Guangzhou Institutes of Biomedicine and Health. “We

identified a couple of critical factors that enhance the formation of interspecies chimera by facilitating cell competition.”

Altogether, the researchers transferred 1,820 embryos to 13 surrogate mothers. After either 25 or 28 days, they terminated gestation and extracted the embryos to assess whether the chimeras had successfully produced humanized kidneys.

The researchers collected five chimeric embryos for analysis (two at 25 days and three at 28 days post-implantation) and found that they had structurally normal kidneys for their stage of development and were composed of 50-60% human cells. At 25-28 days, the kidneys were in the mesonephros stage (the second stage of kidney

development); they had formed tubules and buds of cells that would eventually become ureters connecting the kidney to the bladder.

Researchers discover genes behind antibiotic resistance in deadly superbug infections

September 12, 2023

Australian researchers have uncovered new genetic insights into *Staphylococcus aureus*, revealing what makes the bacterium so dangerous when it enters the blood.

While common, *Staphylococcus aureus* infections -- known as Golden staph -- can be life-threatening if the bacteria enter the

bloodstream, causing sepsis. Golden staph is notorious for its ability to become resistant to antibiotics, making it hard to treat, which can lead to adverse health outcomes for patients infected with a drug-resistant form of the bacteria.

In one of the most comprehensive studies of its kind, published in *Cell Reports*, researchers, led by the Peter Doherty Institute for Infection and Immunity (Doherty Institute), analysed the unique genetic profiles of more than 1,300 Golden staph strains.

By combining this data with patient and antibiotic information, the researchers found that, while patient factors are critical in determining mortality risks, specific genes are linked to antibiotic resistance, along with the bacteria's ability to linger in the blood, evading antibiotics and the immune system.

"In GWAS, scientists scan the genome of a big collection of bacteria to look for tiny changes (mutations) that show up more often in

strains with a certain characteristic, such as antibiotic resistance. Mutations with a strong statistical link are precious clues to figure out how bacteria acquire attributes that are important for patient outcomes.

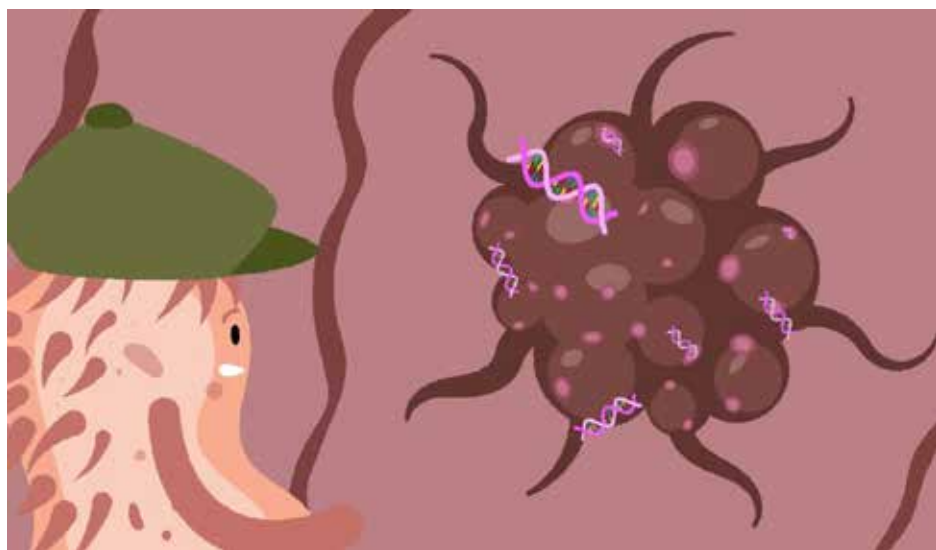
"By revealing the genes responsible for antibiotic resistance in Golden staph, our GWAS is pointing the scientific community to clearer targets for the development of effective solutions to treat Golden staph bloodstream infections," said Professor Howden.

According to the researchers, this pilot study will be followed by more specific investigations of the potential biomarkers for identification of individuals at risk of mental health problems, opening a new avenue for advancements in adolescent mental health care.

New research signals a quantum leap for brain tumor treatment

September 14, 2023

Researchers have discovered a new way to target and kill cancer cells in hard-to-treat brain tumours using electrically charged molecules to trigger self-destruction, that could be developed into a spray treatment used during surgery.





A multidisciplinary team of researchers from the University of Nottingham, led by the School of Pharmacy found a new way to harness the extraordinary capabilities of bio-nanoantennae -- gold nanoparticles intricately coated with specialised redox active molecules to induce programmed cell death, or apoptosis, in cancer cells on electrical stimulation. The research has been published today in Nature Nanotechnology.

The research focuses on patient-derived Glioblastoma cells, an elusive and formidable form of brain cancer that has long evaded effective treatment. The five-year survival rate for glioblastoma is only 6.8% and the average length of survival for patients is estimated to be only 8 months from diagnosis.

The bio-nanoantennae were able

to specifically target glioblastoma cells, leaving healthy cells unscathed. This unprecedented level of precision opens up new possibilities for developing treatment for Glioblastoma during surgical resection of the tumour, when the bio-nanoantennae would be sprayed or injected.

Dr Frankie Rawson led the research and explains: “The team showed that cancer cells succumb to the intricate dance of electrons, orchestrated by the enchanting world of quantum biology. With the advent of bio-nanoantennae, this vision of real-world quantum therapies edge closer to reality. By precisely modulating quantum biological electron tunnelling, these ingenious nanoparticles create a symphony of electrical signals that trigger the cancer cells’ natural self-destruction mechanism.”

The team has now secured MRC impact acceleratory funding, have filed patent, to begin translating the technology to this eventual clinical application. Further rigorous research and validation are essential to ensure the safety and effectiveness of bio-nanoantennae for human use.

Dr Ruman Rahman from the School of Medicine and co-author of the study, adds: “Treating Glioblastoma tumours has long presented challenges for clinicians and prognosis for patients is still poor, which is why any research showing the promise of a new effective treatment is hugely exciting. This research has shown the possibilities presented by quantum therapeutics as a new technology to communicate with biology. The fusion of quantum bioelectronics and medicine brings us one step closer to a new treatment paradigm for disease.”

Scientists take next big step in understanding genetics of schizophrenia

September 15, 2023

Genetically speaking, we are individuals different from each other because of slight variations in our DNA sequences -- so-called genet-

ic variants -- some of which have dramatic effects we can see and comprehend, from the color of our eyes to our risk for developing schizophrenia -- a debilitating psychiatric condition affecting many millions worldwide. For several years, scientists have studied the entire genomes of thousands of people -- called genome-wide association studies, or GWAS -- to find approximately 5,000 genetic variants associated with schizophrenia.

Now, UNC School of Medicine scientists and colleagues are figuring out which of these variants have a causal effect in the development of the schizophrenia. They are finding that some of genetic variants regulate or alter the expression of genes involved in the condition.

Published in the journal *Cell Genomics*, this research marks a big step forward in our understanding of the genetic basis of schizophrenia.

For this study, Won and first authors Jessica McAfee and Sool Lee, both UNC-Chapel Hill graduate students, led a team of researchers from UCLA, Harvard, the University of Michigan, and Human Technopole in Italy to explore the genetic variants already linked to the risk of schizophrenia through GWAS research. Their goal was to figure out a way to tease apart meaningless variants from those with potential for biological activity important for developing schizophrenia. This isn't easy for a few reasons, one of which is that genetic variants are often inherit-

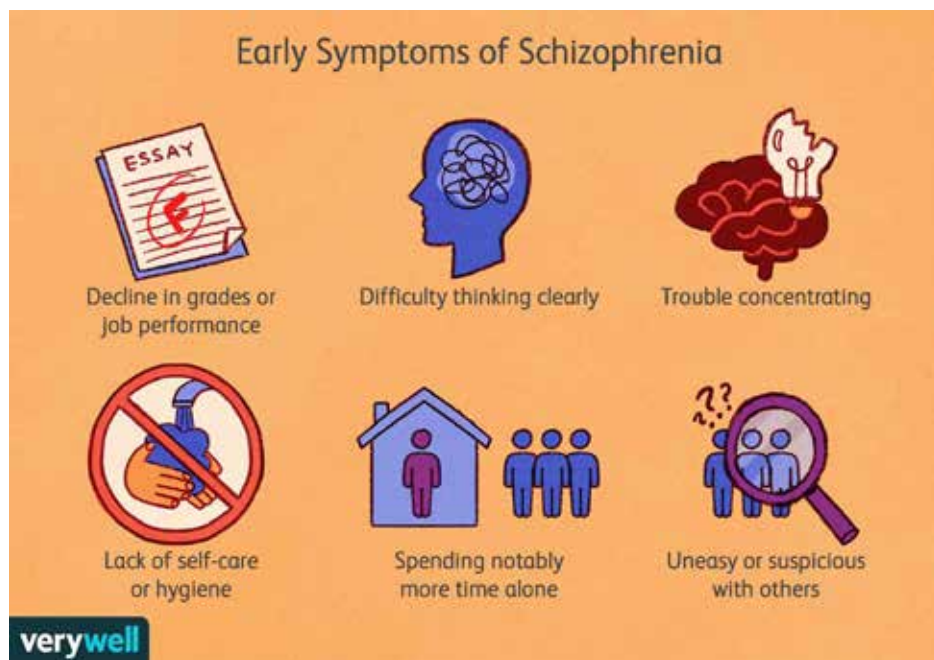
ed together from parents. So, right next to each other could be two genetic variants associated with the condition -- one might be important for gene expression that plays a major role in the condition, but the other variant might not have any role in the condition.

To tackle this problem, the researchers used a special technique called a massively parallel reporter assay (MPRA) -- essentially a genetic sequencing technique that can parse which variants trigger gene expression and which ones don't. To use this method, the researchers introduced the 5,000 variants into human brain cells in a dish, cells that are essential for early brain development. These variants may or may not cause the expression of their downstream gene and genetic barcode. The barcode, a 20bp DNA sequence, is unique to each variant. This is what the group uses to distinguish the variant sequences. The MPRA revealed 439 genetic variations with actual

biological effects, meaning they can alter expression of gene.

"Traditionally, scientists have used other epigenetic data, such as transcription factor binding and biochemically defined enhancers, to identify variants with biological effects," Won said. "However, these conventional methods failed to predict a large portion of variants we identified to have biological effects. Our work points to a wealth of unexplored variants with biological effects."

To understand how these variants work together to influence gene activity, Won and colleagues developed a new model that combines data from MPRA with chromatin architecture of brain cells -- that is, the genetic information important for how brain cell DNA is organized. By doing this, the researchers could connect these 439 variants to how genes are turned on or off.



Largest genetic study of epilepsy to date provides new insights on why epilepsy develops and potential treatments

August 31, 2023

The largest genetic study of its kind, coordinated by the International League Against Epilepsy, including scientists from FutureNeuro at RCSI University of Medicine and Health Sciences, has discovered specific changes in our DNA that increase the risk of developing epilepsy.

The research, published today in Nature Genetics, greatly advances our knowledge of why epilepsy develops and may inform the development of new treatments for the condition.

Epilepsy, a common brain disorder of which there are many different types, is known to have genetic component and to sometimes run in families. Here, researchers compared the DNA from diverse groups of almost 30,000 people with epilepsy to the DNA of 52,500 people without epilepsy. The differences highlighted areas of our



DNA that might be involved in the development of epilepsy.

The researchers identified 26 distinct areas in our DNA that appear to be involved in epilepsy. This included 19 which are specific to a particular form of epilepsy called 'genetic generalized epilepsy' (GGE). They were also able to point to 29 genes that are probably contributing to epilepsy within these DNA regions.

The scientists found that the genetic picture was quite different when comparing distinct types of epilepsy, in particular, when 'focal' and 'generalized' epilepsies were compared. The results also suggested that proteins that carry electrical impulse across the gaps between neurons in our brain make up some of the risk for generalized forms of epilepsy.

The researchers also showed that many of the current medications for epilepsy work by targeting the same epilepsy risk genes that were

highlighted in this study. However, based on their data, the researchers were able to propose some potentially effective alternative drugs. These will need to be clinically tested for use in epilepsy as they are normally used for other conditions, but they are known to target some of the other epilepsy risk genes uncovered.

Over 150 researchers, based across Europe, Australia, Asia, South America and North America, carried out the research. They worked together as part of the International League Against Epilepsy (ILAE) Consortium on Complex Epilepsies. The ILAE Consortium was formed by researchers in 2010, recognising that the complexity of genetic and environmental factors underlying epilepsy would require research across massive datasets, and therefore unprecedented collaboration on an international scale.





XVI AGRICULTURAL SCIENCE CONGRESS & ASC EXPO

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October
2023**

**Transformation of Agri-Food Systems for
Achieving Sustainable Development Goals**
At Hotel Le Méridien, Kochi, Kerala, India

Please see the website
www.16asc2023.in
for details and updates

Events

- Plenary, Special and Invited Lectures
- Technical Sessions on Thematic Areas
- Symposia and Panel Discussions
- Poster Presentations
- Farmer-Scientist Interaction
- Industry Interface
- Students Elocution Contest
- Agri-Expo
- NAAS Business Meeting

Last date for
submission of abstracts
**31
July
2023**

Acceptance of
abstracts
**15
August
2023**

Regular registration
closing
**31
August
2023**

Organised by National Academy of Agricultural Sciences, New Delhi
Hosted by ICAR-Central Marine Fisheries Research Institute, Kochi



Biotech Industry

Biotechnology Contract Manufacturing Market worth \$24.8 billion | Market-sandMarkets

14 August 2023

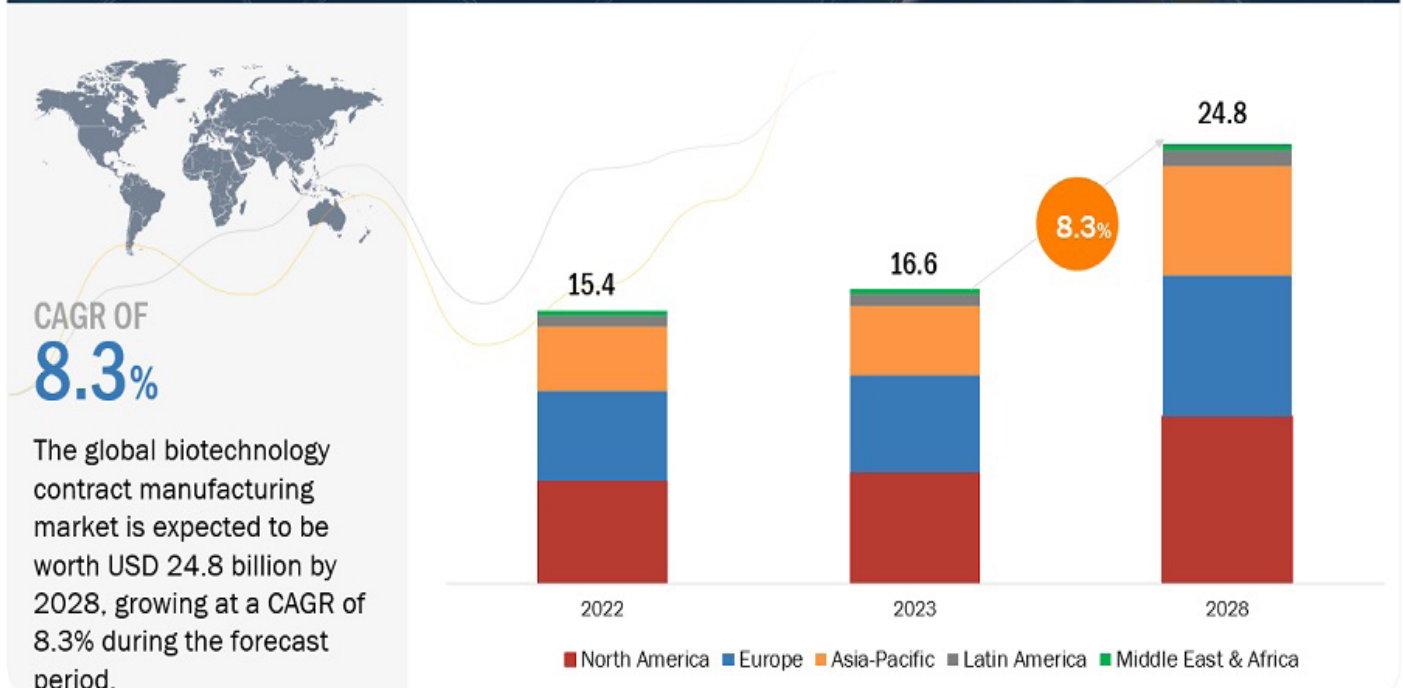
In the near future, the biotechnology contract manufacturing industry is poised for unprecedented growth and innovation. With a bur-

geoning demand for personalized medicines, advanced biologics, and cutting-edge therapies, contract manufacturing organizations (CMOs) will play a pivotal role in expediting drug development and production. This industry's landscape will witness the convergence of state-of-the-art bioprocessing technologies, such as continuous manufacturing and gene editing, allowing for more efficient and scalable production of biopharmaceuticals. Furthermore, the rise of sustainable and eco-friendly bioprocessing techniques will align with global environmental concerns. Collaborations between

CMOs, biotech startups, and pharmaceutical giants will become increasingly common, fostering a dynamic ecosystem that accelerates the delivery of life-saving therapies to patients worldwide. As regulatory frameworks adapt to accommodate these advancements, the biotechnology contract manufacturing sector is on the cusp of a transformative era, revolutionizing healthcare and shaping the future of medicine.

Biotechnology Contract Manufacturing Market in terms of revenue was estimated to be worth \$16.6 billion in 2023 and is poised to

BIOTECHNOLOGY CONTRACT MANUFACTURING MARKET GLOBAL FORECAST TO 2028 (USD BN)



reach \$24.8 billion by 2028, growing at a CAGR of 8.3% from 2023 to 2028 according to a new report by MarketsandMarkets™. The growth of this market is driven by the rising demand for biologics and biosimilars, increasing outsourcing of biologics manufacturing among biopharmaceutical companies, growing focus on personalized medicine, increasing collaborations between pharmaceutical companies and biologics contract manufacturers, and advancements in manufacturing technologies. Additionally, the rising demand for cell & gene therapies and the expansion of biologics manufacturing capacities by CMOs will provide growth opportunities in the biotechnology contract manufacturing market.

The monoclonal antibody segment accounted for the largest share by molecule type in the biotechnology contract manufacturing market in 2022.

By molecule type, the biotechnology contract manufacturing market has been further categorized as monoclonal antibodies, cell therapy & gene therapy, antibody-drug conjugates, vaccines, therapeutic peptides & proteins, and other molecule types. The monoclonal antibodies segment held the largest share of the global biotechnology contract manufacturing market in 2022. This can be attributed to the growing demand for targeted therapies in the treatment of chronic diseases, increasing government initiatives for the development of monoclonal antibody drugs, and the growing number of mAb prod-

uct candidates currently in development.

The mammalian expression segment accounted for the largest share of the biotechnology contract manufacturing market by source in 2022.

Based on the source, the global biotechnology contract manufacturing market has been segmented into mammalian expressions and non-mammalian expressions. The mammalian expression segment held the largest market share in 2022. The large share of this segment can be attributed to the high sensitivity of this system, its wide usage in the manufacturing of biopharmaceuticals, the growing number of approved biologics based on mammalian expression systems, and the expansion of mammalian-based cell culture capacity by CMOs.

North America region accounted for the dominant share of the biotechnology contract manufacturing market in 2022.

The biotechnology contract manufacturing market in North America has experienced significant growth in recent years. The strong pharmaceutical and biotech industry, the presence of a well-established pharmaceutical industry, the rising demand for biosimilars and biologics, and the increasing outsourcing of manufacturing services by pharmaceutical & biopharmaceutical companies contribute to the growth of the biotechnology contract manufacturing market in the North American region. Addi-

tionally, the presence of highly advanced manufacturing technologies makes this region an attractive market for contract manufacturing organizations (CMOs).



Hands-On workshop on “Molecular Cloning”



DNA amplification, AGE, Gel purification, Restriction Digestions, Ligation, transformation, colony PCR, Plasmid isolation

21st to 24th November 2023 at Agharkar Research Institute, Pune

Last Date of application

31st October 2023

Workshop Fees

Academia & Research

Rs. 5,000/-

Industry/Private

Rs. 10,000/-

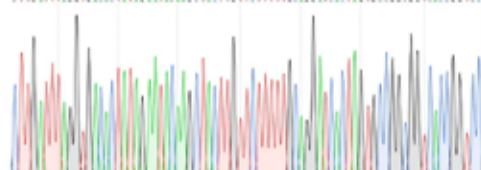
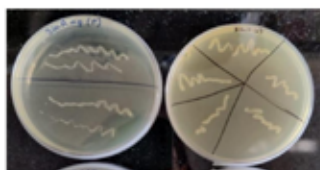
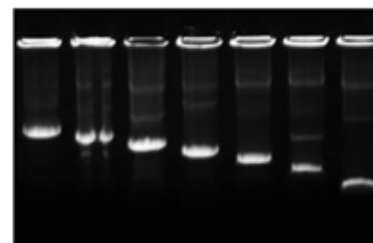
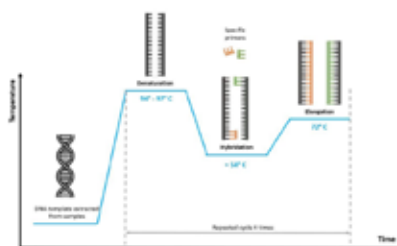
Inclusive of taxes

Lunch will be provided

Accommodation - on a payment basis upon request and subject to availability.

Who may Apply: Bachelor, Master and PhD students, Post-doctoral researchers, and college and university teachers.

Limited Seats!



Molecular cloning is a fundamental technique in molecular biology that has revolutionised the field by allowing researchers to manipulate and study DNA molecules precisely. It involves the creation of recombinant DNA molecules by combining DNA fragments from different sources, resulting in the replication and amplification of specific genes or DNA sequences.

Please apply using the given Google Form Link:

<https://forms.gle/1FgE82pzKHsyNErP6>

Organised by

Dr Bhupendra V. Shravage, Dr. Yogesh Karpe, Dr. Sumit S Dagar, ARI, Pune

Contact: molecular.cloningari@gmail.com



University College of Medical Sciences (University of Delhi) & Guru Teg Bahadur Hospital Multi-disciplinary Research Unit (MRU)



"Hands-on Workshop on Cell Culture Techniques"

Organizer: MRU-UCMS

Date: 26th-27th September 2023

Time: 9:00 AM – 4:00 PM

Venue: Multi-disciplinary Research Unit &
Central Research Lab
(First floor, College building Room no. 122)

Invited Speaker

Dr. Alok C. Bharti, Professor
(Dept. of Zoology, University of Delhi)

Workshop Highlights

- ✓ Peripheral Blood Mononuclear Cells (PBMCs) Isolation
- ✓ Cell viability
- ✓ PBMCs Culture (Treatment with Antigens)
- ✓ Cell Line Revival & Passaging
- ✓ Cell confluency



Who can attend:

PGs, PhDs, Young Faculty

Max. Participation : 10
First Come First Serve

Registration link


<https://forms.gle/1Ywc6HAfD11LUQMh7>



Registration ends on: 10.09.2023

Registration fee: Rs. 1000

(Payment details will be send to
selected candidates)

Contact:

 nodalofficermru@gmail.com

  +91- 9013031624



SKILL DEVELOPMENT CENTRE

School of Life Sciences
University of Hyderabad, Hyderabad



Training program on Research Methodology in Molecular Biology and Biotechnology
(20th October to 30th November, 2023)

Background

School of Life Sciences (SLS), University of Hyderabad (UoH), internationally recognized for its excellence in teaching and research, has initiated this program to train graduate / post graduate students in cutting edge areas of biology. SLS wishes to share its rich expertise with the students to empower them with required skill sets to take up demanding responsibilities in Biotech Industry and academic establishments. The training program will be conducted periodically by SLS-Skill Development Centre. The SLS faculty members, known for their outstanding research contributions, will train the participants for a period of six weeks. This enables the trainees to gain first-hand knowledge, especially working skills with sophisticated instruments frequently used in research setup and biotech industry.

Eligibility

- Post graduate biology students (currently in second year of their course) studying in **Government funded Colleges / Universities that are located in rural areas.**
- Passed all the subjects in the first year of the course enrolled in; without taking supplementary exams,
- Have a CGPA of > 8.0 in the first year of the course studying (relaxation of 5 % in the CGPA is allowed for SC, ST, and PWD category applicants).

Application procedure

Fill the application at the following link <https://forms.gle/1EMsuWiYnvC51em2A> and upload the following documents

- Curriculum vitae; Statement of purpose; Category certificate; Endorsement from the Head of the Institution (in the format available at <https://www.sdclsuoh.com/blog>)
- **APPLICATION DEADLINE:**
30TH SEPTEMBER, 2023; 5:30 p.m.

Stipendiary benefits

- **Full waiver of registration fee, accommodation and food charges.**

Selection procedure

- Maximum intake is limited to 30 participants.
- Based on eligibility criteria fulfilled in all aspects.
- Strength of statement of purpose.
- Reservation policy, as per the Government of India norms will be applied.

For details, contact

Dr. Suresh Yenugu,
Coordinator, Skill Development Centre
Email: sdcs.sls.uoh@gmail.com
www.sdclsuoh.com

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INSTITUTION OF EMINENCE, UNIVERSITY OF HYDERABAD





IBBAC

International Conference on Biochemical and Biotechnological Approaches for Crop Improvement

30th October to 01st November, 2023

Venue

National Agricultural Science Complex
New Delhi, India



Organized by



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