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BIOTECH EXPRESS

Editorial:
Who is Rajesh Sudhir Gokhale,the new DBT, India Secretary

Editorial in News:
Prof. Ashok Pandey 6th time in a row Top 0.1% Highest Cited Authors in the world and no. 1 from India

Editorial:
Legal Battles in Biotechnology: A Glimpse of Indian Bar Association Activities against COVID-19 Pandemic Measures by Govt. and Industries

Interview: Prof Rajeev Varshney,
The internationally renowned Agri Scientist on leading world's largest plant genome sequencing project (3300+ Chickpeas) from India

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BRSI Upcoming Event

18th BRSI Convention

The 18th Convention of the Biotech Research Society, India will be held as the International Conference on Biotechnology for Resource Efficiency, Energy, Environment, Chemicals and Health (BREEECH-2021) during December 1-4, 2021 at Dehradun.

The event will be jointly organized by the CSIR-Indian Institute of Petroleum, Dehradun, Uttarakhand, India in association with the International Bioprocessing Association, France; the Centre for Energy and Environmental Sustainability (CEES)-India; CDC Jaipur and International Solid Waste Association (India chapter).

The event will be held at IIP, Dehradun. Prof Sudhir Sopory, President of the BRSI is the conference chair and Prof Huu Hao Ngo, University of Technology Sydney, Australia; Prof Claude Gilles Dussap, Universite Clermont Auvergne, France and Prof Samir Khanal, University of Hawaii, USA are conference international chairs. Dr Debashish Ghosh is the convener of the conference, Dr T Bhaskar is the Chairman of the local organizing committee, and Dr P Binod, COE, BRSI, Dr Bhavya Balahurumurthy, CSIR-IIP, Dehradun and Dr Kamlesh Choure, AKS University, Satna are its co-convener.

Details can be found at https://www.bre3ch2021.in/

Important Dates

01 July, 2021
Abstract Submission Opens
31August, 2021
Abstract Submission Closes
10 September, 2021
Acceptance Notification
15 October, 2021
Registration at Normal Rates
31 October, 2021
Registration Cancellation

Booking of Accomodation Registration may close earlier if maximum numbers of participants have been reached

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BIOTECH EXPRESS

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Interview

Interview: Prof. Rajeev Varshney,

The internationally renowned Agri Scientist on leading world's largest plant genome sequencing project (3300+ Chickpeas) from India

by Kamal Pratap Singh

The Nature, a topmost science journal in the world has published a breakthrough research paper of Indian scienists recently, "A chickpea genetic variation map based on the sequencing of 3,366 genomes, led by Prof Rajeev Varshney, Research Program Director at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) on November 10, 2021. Since then, this research is making rounds in social media, newspapers, magazines, blogs, etc. Biotech Express has undertaken in-depth analysis of this research and interviewed Prof Varshney to know background, achievements and future plan of this work. To the best of our knowledge, in recent decades, this is the first time, that an agricultural biotechnology research led by an Indian scientist has found its place in Nature. Not only from India perspective, but this is also the largest genome sequencing study for any crop that reports whole genome sequencing of 3,366 genotypes on an average of 12X coverage.

Prof Varshney, a JC Bose National Fellow, is a recipient of the most coveted Shanti Swarup Bhatnagar Prize (honored by Hon'ble Prime Minister Narendra Modi), and ICAR-India's highest and most prestigious Rafi Ahmed Kidwai Award- 2019 from the Government of India. He is an elected fellow of all four national science and agriculture academies of India (INSA, NASI, IASc and NAAS) as well as of several foreign science academies including the German National Science Academy, The World Academy of Sciences, America Association for Advancement of Science, Crop Science Society of America, and American Society of Agronomy. He is a recipient of several prestigious awards including Professor Jayashankar Life Time Achievement Award, GD Birla Award for Scientific Research, Professor Lalji Singh Achievement Award, Career360 Outstanding Faculty Research Award- 2018, China's Qilu Friendship Award-2015, Illumina Agricultural Greater Good Initiative Award etc. It is also important to mention that the "Tropical legumes Project" led by Prof Varshney recently got Africa Food Prize for ICRISAT.

Prof Varshney, a highly prolific author, has published more than 500 high-quality research papers/articles including 19 papers in Nature journals and has h-index of 108 with more than 46,00 citations. Thomson Reuters (Clarivate Analytics) has recognized him as a highly cited researcher for the last 8 years in a row (2021, 2020, 2019, 2018, 2017, 2016, 2015, and 2014) and honored him with Research Excellence India Citation Award-2015.

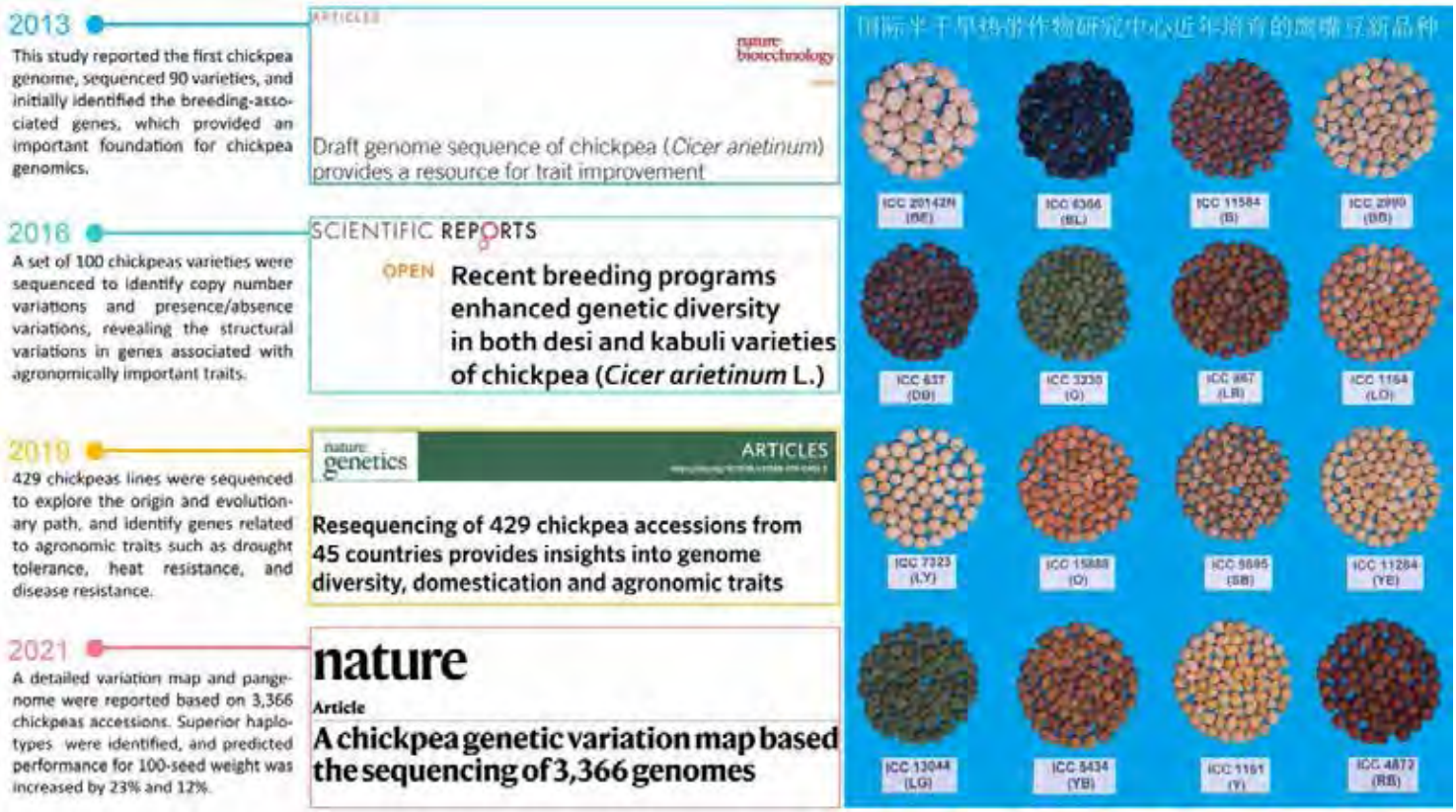

Figure 1: The timeline of sequencing projects conducted under the leadership of Prof Varshney in chickpea. Photo *credit: Liu Xin, BGI*

Chickpea (*Cicer arientinum* L.), commonly called "chana" or "bengal gram" is one of the oldest grain legume crops that is grown over 50 countries worldwide. Due to its rich protein and nutrient content, chickpea provides an affordable dietary resource to meet the nutrition security demands of growing population, particularly in India and several other countries of Asia and sub-Saharan Africa. Although crop improvement programmes in India and elsewhere have delivered superior varieties in past, it is imperative to use biotechnology approaches for bringing revolution in crop improvement in chickpea. Genomics- assisted breeding approach is a key approach in this direction. However until 2005, there were very limited genomic resources available in the crop. Therefore, the crop often used to be called 'orphan crop' and genomics- assisted breeding was like a dream in this crop.

The timeline of sequencing projects conducted under the leadership of Prof Varshney is provided in Figure 1.

Prof Rajeev Varshney, an Indian scientist, popularly known as "genomics guru", after completing his post-doctoral tenure at Leibniz Institute of Plant Genetics & Crops Plant Research (IPK), Gatersleben, Germany and joining ICRISAT in 2005 took it as a challenge for bringing genomics revolution. In 2007, after establishing the Centre of Excellence in Genomics (now called Centre of Excellence in Genomics & Systems Biology) at ICRISAT, and working with a range of partners across the world, Prof Varshney has been engaged in developing genomic resources and translating these genome information for crop improvement in tropical crops such as chickpea, pigeonpea, groundnut and pearl millet.

With an objective to bring genomic revolution, the first chickpea genome sequence was reported in **Nature Biotechnology** in 2013 (https://www.nature.com/articles/nbt.2491) by an international team led by Prof Rajeev K Varshney. This scientific breakthrough provided for the first time a much-required gene repertoire for chickpea. This genome se-

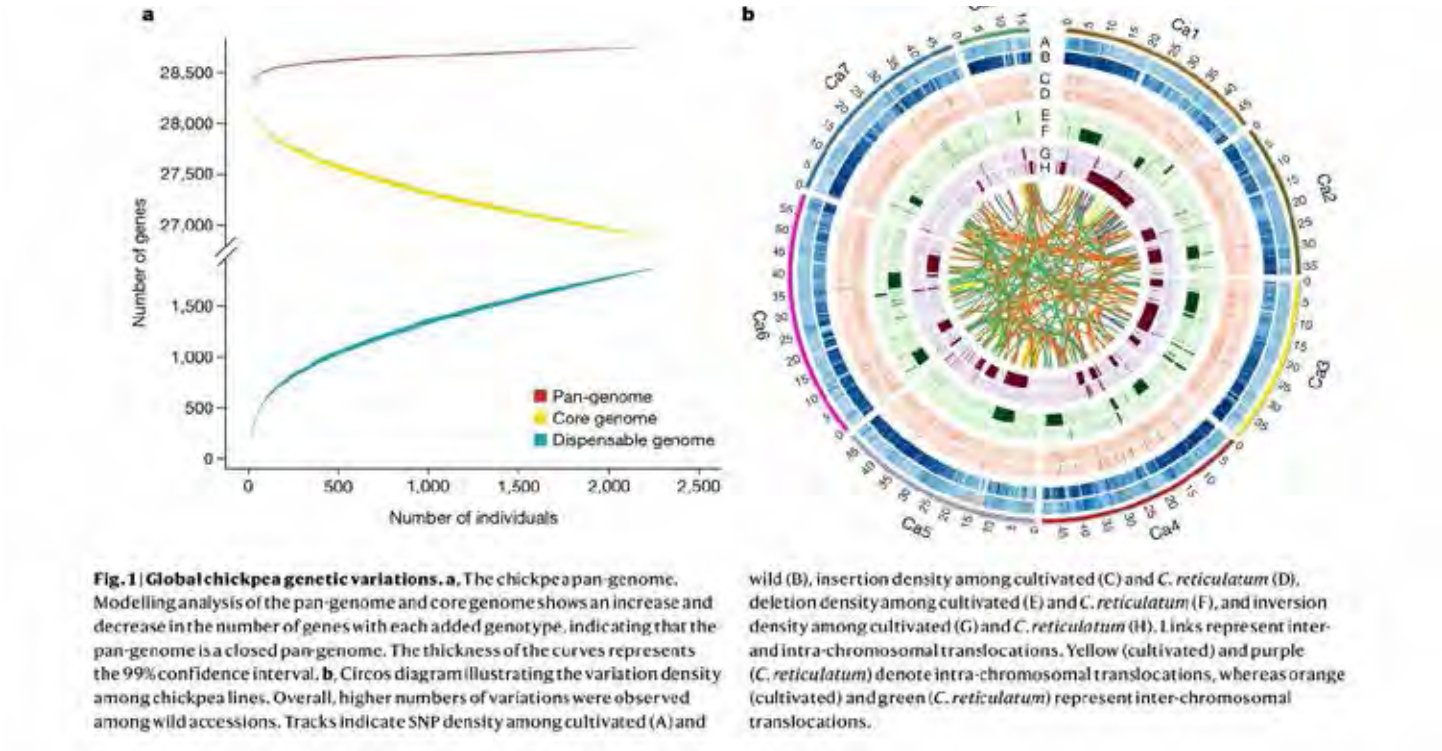

Fig. 1 | Global chickpea genetic variations. a, The chickpea pan-genome. Modelling analysis of the pan-genome and core genome shows an increase and decrease in the number of genes with each added genotype, indicating that the pan-genome is a closed pan-genome. The thickness of the curves represents the 99% confidence interval. **b**, Circos diagram illustrating the variation density among chickpea lines. Overall, higher numbers of variations were observed among wild accessions. Tracks indicate SNP density among cultivated (A) and wild (B), insertion density among cultivated (C) and *C. reticulatum* (D), deletion density among cultivated (E) and *C. reticulatum* (F), and inversion density among cultivated (G) and *C. reticulatum* (H). Links represent inter- and intra-chromosomal translocations. Yellow (cultivated) and purple (*C. reticulatum*) denote intra-chromosomal translocations, whereas orange (cultivated) and green (*C. reticulatum*) represent inter-chromosomal translocations.

Figure 2: A chickpea pagenome providing insights on genomic diversity in chickpea. (Source: Nature)

quence was used to understand the genetic base by sequencing of 100 elite varieties of chickpea released in 14 countries under the leadership of Prof Varshney. This study was published in 2016 in **Scientific Reports** (https://www.nature.com/articles/srep38636). Subsequently, Prof. Varshney's team embarked on the scientific journey to sequence 429 chickpea lines from 45 countries and the results of this study were published in **Nature Genetics** (https://www.nature.com/articles/s41588-019-0401-3). This study involving scientists from 21 research institutes globally identified genes for tolerance to drought and heat. This effort also provided key insights into the crop's genetic diversity, domestication and molecular basis of agronomic traits for chickpea improvement.

The new breakthrough study published in Nature on Nov 10, 2021, however, provided a deeper understanding of chickpea's genome based on the development of a detailed genetic variation map from 3,171 cultivated and 195 accessions of wild species of chickpea. Involving 57 researchers from 41 organizations across 10 countries, this study assembled chickpea's pan-genome based on genome sequencing data of 3,366 chickpea lines from 60 countries. This article provides: (a) genome variation map (pangenome) of chickpea, (b) origin and migration routes of chickpea to various parts of the world, (c) chickpea species divergence, (d) genetic load/burden responsible for lowering crop performance, (e) superior haplotypes for agronomic traits for undertaking haplotype-based breeding, (f) foundation for genomic prediction and optimal selection for developing superior varieties.

"By employing whole-genome sequencing, we have been able to affirm the history of chickpea's origin in the Fertile Crescent and identify two paths of diffusion or migration of chickpea to the rest of the world. One path indicates diffusion to South Asia and East Africa, and the other suggests diffusion to the Mediterranean region (probably through Turkey) as well as to the Black Sea and Central Asia (up to Afghanistan)," said Prof Varshney. He added, "The team, by developing pangenome, identified 29,870 genes that includes 1,582 previously unreported novel genes and by employing whole genome sequencing".

A pangenome highlighting genome diversity in chickpea is given in Figure 2.

Interview Questions

Brief background of the group leader

Leader of this study, Prof. Rajeev Varshney is an agricultural research scientist specializing in genomics and molecular breeding with 20+ years of service in developing countries in sub-Saharan Africa and Asia. He is currently serving as Research Program Director- Accelerated Crop Improvement; and Director, Center of Excellence in Genomics & Systems Biology at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). He is an Honorary and/or Adjunct Professor in 10 universities/institutes in Australia, China, Ghana and India including Murdoch University, The University of Western Australia and The University of Queensland, Australia. He is a globally recognized leader for his work on genome sequencing, genomics-assisted breeding and translational genomics in legume and cereal crops and capacity building in developing countries.

Prof. Varshney has made centrally important contributions to improving food security in India and Africa by creating genomic resources of ten major "orphan" tropical crops including pigeonpea, chickpea, groundnut and pearl millet. He has developed and deployed DNA marker technologies for the identification of useful genetic variation in these key crops. He has used these resources to identify genetic loci and candidate genes for drought and pest tolerance in key staple crops for sub-Saharan Africa and India. He has initiated and led major international programmes that are creating and already delivering 11 superior crop varieties through genomics-assisted breeding to some of the world's poorest farmers.

Prof. Varshney, a highly prolific author and Highly Cited Researcher for 8 consecutive years (2014-2021) in a row has published >500 papers in high impact factor journals including 19 papers in Nature journals. Based on his publications, he has h-Index of 108 with >46,000 citations. He is the youngest and the only Indian agricultural/plant scientist and the 4th Indian to achieve an h-index of 100 as per Google Scholar. He is editor of 17 books from Springer, CRC Publishers, etc.

Prof. Varshney is an elected fellow to about 10 science and agriculture academies/ societies in India, Germany, USA, etc. and recipient of several noted awards including the most coveted science award, Shanti Swarup Bhatnagar Prize, and the most prestigious agricultural science award, Rafi Ahmed Kidwai Award from Government of India. Recently ICRISAT won the 2021- Africa Food Prize for the outputs and impact of Tropical Legume projects, led by Prof Varshney as Principal Investigator for 7 years.

In an interview with Mr K P Singh, Professor Varshney told, "Our Nature paper added knowledge on both fronts- basic biology, and agriculture related applications. While the study provides insights on genetic diversity, species divergence, domestication, migration routes, the study also identifies "good" genes and "bad" genes in chickpea genome. We propose not only accumulating good genes to develop better varieties, but also purge bad genes during breeding so that we have high performing crop varieties".

While recollecting the history of the project, Prof Varshney mentioned that after we published the chickpea reference genome, we were encouraged by the then Secretary, Department of of Agriculture and Cooperation, Shri Ashish Bahuguna, and the then Deputy Director General of ICAR, Dr Swapan Datta, and the then Director General of ICRISAT, Dr William Dar to develop a road map for genomics- assisted breeding in chickpea.

Subsequently, we worked with the then Director, ICAR- IIPR, Dr NP Singh and chickpea breeders and researchers from ICRISAT, ICAR-IIPR, International Centre for Agricultural Research in Dryland Areas, and state agricultural universities in Madhya Pradesh, Rajasthan,

Who are other prominent members in the group

This is one of the largest study of its kind involving 57 researchers from 41 organizations across 10 countries. From ICRISAT, members from the team included Dr Manish Roorkiwal, Mr Prasad Bajaj, Ms Anu Chitikineni, Dr Mahendar Thudi, Dr Hari D Upadhyaya, Dr Aamir W. Khan, Dr Vanika Garg, Mr Vinod Kumar Valluri, Dr Pallavi Sinha, Dr Vikas K. Singh, Dr Abhishek Rathore, Dr Muneendra K. Singh & Dr Himabindu Kudapa.

For contributions of each member, please refer the nature paper:https://www.nature.com/articles/s41586-021-04066-1#author-information.

Why Chickpea only, why it is found important for this study?

Chickpea is one of the important legume crops, cultivated in more than 50 countries and is a rich source of protein. With high nutritional values, chickpea is a key crop towards nutritional security, especially in developing countries of Asia and sub-Saharan Africa. Having chickpea in its basket of mandate crops, ICRISAT embarked on this ambitious initiative of the "3000 chickpea genome sequencing" project in 2014.

Gujarat, West Bengal, New Delhi. With the initial funding support from DAC, Ministry of Agriculture, "The 3000 Chickpea Genome-Sequencing Initiative" was launched in 2014 (Figure 3). Subsequently several partners, funding agencies joined the project and we enhanced the scope of the project.

Large-scale sequencing data were generated on HiSeq 2500 sequencing machine at ICRISAT (India) following "Make In India" initiative of Government of India.

It took about 3 years to generate all data at ICRISAT and partners in India, and then about 3-4 years for data analysis and interpretation together with partners around the world and about one and half years with the manuscript preparation, submission, revision and acceptance. "In summary, though it has been a long journey with many ups and downs (excitements and disappointments), we have successfully completed this project and published its outputs in Nature, the world's topmost science journal", said Prof Varshney.

Figure 3: The 3000 chickpea genome sequencing initiative launched at ICRISAT in 2014. Photo: PS Rao

When and how did you come up with the idea of this study?

An international team of researchers led by me published the first chickpea genome in Nature Biotechnology in 2013. After we published the chickpea reference genome, we were encouraged by the then Secretary, Department of Agriculture and Cooperation, Shri Ashish Bahuguna, and the then Deputy Director General of ICAR, Dr Swapan Datta, and the then Director General of ICRISAT, Dr William Dar to develop a road map for genomics-assisted breeding in chickpea. Subsequently, we worked with the then Director, ICAR- IIPR, Dr NP Singh and chickpea breeders and researchers from ICRISAT, ICAR-IIPR, International Centre for Agricultural Research in Dryland Areas, and state agricultural universities in Madhya Pradesh, Rajasthan, Gujarat, West Bengal, New Delhi. With the initial funding support from DAC, Ministry of Agriculture, and encouragement from the then Management of ICRISAT, "The 3000 Chickpea Genome-Sequencing Initiative" was launched in 2014

Any preliminary studies by your group or lab?

Yes, our group together with partners from across the globe have undertaken several projects on chickpea crop. The key selected ones that played significant role in transforming chickpea crop breeding programs for development and delivery of improved varieties includes:

1. Draft genome sequence of chickpea (*Cicer arietinum*) provides a resource for trait improvement - Nature Biotechnology 2013(https://www.nature.com/articles/nbt.2491)
2. Recent breeding programs enhanced genetic diversity in both desi and kabuli varieties of chickpea (*Cicer arietinum L.*)- Scientific Reports 2016(https://www.nature.com/articles/srep38636)
3. Resequencing of 429 chickpea accessions from 45 countries provides insights into genome diversity, domestication and agronomic traits- Nature Genetics 2019(https://www.nature.com/articles/s41588-019-0401-3)
4. A chickpea genetic variation map based on the sequencing of 3,366 genomes- Nature, 2021 (https://www.nature.com/articles/s41586-021-04066-1)

From where you get the fund for this project?

Theproject launched with initial funding from Ministry of Agriculture, Government of India. However, over the years several partners alongwith their donors and funding agencies contributed in this study. Some key funders include Department of Biotechnology, Ministry of Science and Technology under the Indo- Australian Biotechnology Fund, Government of India and the Bill & Melinda Gates Foundation.

How many different types of novel genes are uncovered through this project?

This study identified 29,870 genes that includes 1,582 previously unreported novel genes. Furthermore, the study identified blocks of genes in landraces (domesticated varieties developed by farmers) that can significantly enhance performance of the crop by improving traits like yield, climate resilience and seed characteristics. Called haplotypes, these blocks of genes are what crop breeders strive to bring into cultivars. Using historical data of all chickpea varieties released between 1948 and 2012, the research sheds light on the deployment of these haplotypes in the varieties. We examined 129 varieties released in the past. Though a few superior haplotypes were detected in some of these varieties, we found that most varieties lacked many beneficial haplotypes. We have arrived at 56 promising lines that can bring these haplotypes into breeding programs to develop enhanced varieties.

What various accessions are included in the study?

In this study, we have sequenced 3,366 chickpea germplasm accessions including 3,171 cultivated and 195 wild types.

What other crops you think are important for such kind of studies and why?

Most of the crops, including legumes, grown in the dryland regions of the world are important from this point of view. As roughly 2.5 billion people – 30 percent of the world's population – live in the dry areas, which cover more than 40 percent of the world's land surface. Scarce natural resources, land degradation and frequent droughts severely challenge food production in these areas. Productivity in dryland regions face a multitude of challenges – persistent water scarcity, frequent droughts, high climatic variability, various forms of land degradation, including desertification, and loss of biodiversity.

What are future implications of this study on hunger index and/or to combat world hunger?

Reports suggest that global efforts to end world hunger and malnutrition in all its forms by 2030 are not on track, due to several drivers including the recent COVID-19 pandemic. In fact, the latest FAO report estimates that between 720 and 811 million people in the world faced hunger in 2020 – as many as 161 million more than in 2019. The world needs to realize this urgency and put together all possible efforts to address global hunger and malnutrition, in best possible manner. Such kind of advanced genomic research has the potential to revitalize the agricultural landscape by advancing and accelerating the crop breeding efforts. It has the potential to provide a complete picture of genetic variation within any crop with a validated roadmap for using the knowledge and genomic resources for crop improvement programs.

We have already suggested some novel approaches such as haplotype based breeding, genomic prediction, optimal contributions selection for redefining the chickpea breeding etc. These approaches are expected to deliver high-yielding, climate resilient and nutrition rich crop varieties to provide food and nutrition.

Figure 4: Prof Varshney with the Tropical Projects team comprising of scientists from sub-Saharan Africa and Asia in Livingstone in Zambia. The Tropical Projects, under the PIship of Prof Varshney, won Africa Food Prize 2021 for ICRISAT.

Translating genome information for developing better varieties

Based on genome information from earlier studies, ICRISAT together with its national partners in Asia and sub-Saharan Africa, mapped around 30-50 agronomic traits. Notably a genomic region (referred as "QTL-hotspot") containing genes for drought tolerance traits was identified by Prof Varshney and his team. He together with researchers from ICRISAT and other institutes from India and other countries introgressed this "QTL-hotspot" for drought tolerance, and also genes for Fusarium wilt (a serious disease responsible for yield reduction) in several elite varieties. As a result, several improved varieties were developed together with national partner Indian Council of Agricultural Research (ICAR) - Indian Agricultural Research Institute (IARI), Indian Institute of Pulses Research (IIPR), University of Agricultural Sciences, Raichur (UAS-R) and others in last 3 years. These varieties include three drought tolerant varieties: 'Pusa 10216' (with ICAR- IARI, Figure 5), 'Pusa Chickpea 4005' or 'BG 4005' (with ICAR- IARI) and 'IPCL4-14' (with ICAR- IIPR), and three Fusarium wilt resistant varieties: 'MABC-WR-SA-1' alias 'Super Annigeri-1' (with UAS-R), 'Pusa Chickpea 20211' alias 'Pusa Chickpea Manav' and 'IPCMB 19-3'. Drought tolerantPusa Chickpea 4005 and IPCMB 19-3 were among 35 crop varieties dedicated by Hon'ble PM Narendra Modi to the nation on 28 September2021.

Taking improved varieties to small-holder farmers

While crop improvement teams around the world has been delivering improved varieties, in many countries they don't reach to farmers in real time. Secondly, even if the varieties reach to farmers, without availability of information and practicing proper agronomy, farmers are not able to harness the full potential of genetics. To overcome the above mentioned issues, Prof Varshney highlighted two examples- one on Tropical Legumes project funded by Bill & Melinda Gates Foundation, and the other one on delivering more produce and income to small-holder farmers funded by Ministry of Agriculture & Farmers Welfare, that were led by him as Principal Investigator. He said, "Tropical Legumes projects through collaborative efforts of ICRISAT, IITA, CIAT and national programmes in 13 countries in Africa and two countries (India and Bangladesh) in Asia, facilitated release of 266varieties, production of 498,034 tons seeds, adoption of improved varieties of legumes under in 5 million ha area and creation of 52 next generation scientists (Figure 4). By assuming 0.2 ha land per farmer, the Tropical Legume projects is benefitting 25 million lives in 15 countries of SSA and Asia". For this outstanding work and positive impact on livelihood of small-holder farmers in 13 African countries through TL projects led by Varshney, ICRISAT has been awarded Africa Food Prize-2021 on 8th Sept 2021.

Regarding delivering more produce and income to small-holder farmers project, Prof Varshney mentioned, "In collaboration with scientists from ICRISAT, ICAR-IIPR and 7 agricultural research stations/ state agricultural universities in 6 states (Madhya Pradesh, Maharashtra, Andhra Pradesh, Telangana, Karnataka and Uttar Pradesh), we had an outreach of 32 varieties/hybrids of pulse crops to about 1,822 farmers from 158 villages of 25 districts from above mentioned 6 states. Farmers- preferred varieties and hybrids are being promoted for production at large scale in these states.

Figure 5: Prof Rajeev Varshney, with Dr Chelapilla Bhardwaj from ICAR-IARI in chickpea field with Pusa Chickpea 10216 variety at ICAR- IARI New Delhi.

BOX 1: Major News Platforms that covers current work of Prof Varshney on chickpea genomics in Nature

All news are published in November 2021

	Title of the Article	Publishing House	Region	Links	Date
1	A Tool Kit to Help Scientists Find the Ultimate Chickpea	The New York Times	International	https://www.nytimes.com/2021/11/20/science/chickpea-breeding-climate-change.html	20
2	Genetic variation map to enhance chickpea breeding	FOOD & BEVARAGE	International	https://www.foodmag.com.au/genetic-variation-map-to-enhance-chickpea-breeding/	17
3	Chickpea gene collection a boon for world agriculture	COSMOS	International	https://cosmosmagazine.com/earth/agriculture/chickpea-gene-collection-a-boon-for-world-agriculture/	11
4	Scientists stumble upon traits that boost chickpea production, make it climate-smart	THE FEDERAL	International	https://thefederal.com/science/scientists-stumble-upon-traits-that-boost-chickpea-production-make-it-climate-smart/	17
5	ICRISAT Leads Largest Plant Genome Sequencing Effort, Yields Chickpea Pan-Genome	ISAAA	International	https://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=19113#.YZTLYpaXBDQ.twitter	17
6	Chickpea's genome map developed through largest effort of its kind	GEN: GENETIC ENGINEERING & BIOTECHNOLOGY NEWS	International	https://www.genengnews.com/news/chickpeas-genome-map-developed-through-largest-effort-of-its-kind/	15
7	A variation map	Nature Plants	International	https://www.nature.com/articles/s41477-021-01023-8	10
8	Targeted breeding for chickpea improvement	NATURE MIDDLE EAST	International	https://www.natureasia.com/en/nmiddleeast/article/10.1038/nmiddleeast.2021.91	12
9	Variations in chickpea genomes mapped	Nature India	National	https://www.nature.com/articles/d44151-021-00070-6	17
10	Largest plant genome sequencing effort yields pan-genome for chickpea	MIRAGE	International	https://www.miragenews.com/largest-plant-genome-sequencing-effort-yields-670766/	10
11	New discoveries accelerate breeding of climate change proofed chickpeas	Murdoch	International	https://www.murdoch.edu.au/news/articles/new-discoveries-accelerate-breeding-of-climate-change-proofed-chickpeas	11
12	Easy Peasy: Huge Genome Study Set To Boost Chickpea Yields	Birmingham Times	International	https://www.birminghamtimes.com/2021/11/easy-peasy-huge-genome-study-set-to-boost-chickpea-yields/	11
13	AI helps design the perfect chickpea	Science Daily	International	https://www.sciencedaily.com/releases/2021/11/211111154306.htm	11
14	Chickpea genes catalogued in unprecedented detail to secure food supply despite climate warming	ScienMag	International	https://scienmag.com/chickpea-genes-catalogued-in-unprecedented-detail-to-secure-food-supply-despite-climate-warming/	10
15	Largest plant genome sequencing yields a pan-genome for chickpea	The Hindu	National	https://www.thehindu.com/news/national/telangana/largest-plant-genome-sequencing-yields-a-pan-genome-for-chickpea/article37430618.ece	11
16	Field Notes: Increasing Chana's 'good karma' through genetics	THE HINDU BUSINESS LINE	National	https://www.youtube.com/watch?v=hu2hr2MyQiI	10
17	ICRISAT conducts the largest genome sequencing for chickpeas	News Meter	Regional	https://newsmeter.in/must-read/icrisat-conducts-the-largest-genome-sequencing-for-chickpeas-685946	10
18	Indian scientists help identify 'good','bad' genes in chickpea	The Telegraph Online	Regional	https://www.telegraphindia.com/india/indian-scientists-help-identifying-good-bad-genes-in-chickpea/cid/1838462	12
19	इक्रीसेट के अनुसंधानकर्ताओं ने चने के जीनोम का सेट तैयार कयिा	NAVBHARAT TIMES	Regional	https://navbharattimes.indiatimes.com/state/other-states/hyderabad/icrisat-researchers-set-up-gram-genome/articleshow/87652721.cms	11
20	ఇక్రిశాట్: శనగ వయసు ఏకంగా 12,600 ఏళ్లు	Sakshi News	Regional	https://www.sakshi.com/telugu-news/telangana/icrisat-genome-study-opens-doors-chickpea-revolution-1411148	11

BOX 2: Testimonials to Prof Varshney by Stalwarts of Agribiotechnology

GurdevKhush, World Food Prize Laureate, University of California- Davis, USA

"Congratulations Rajeev and your team for this outstanding achievement. I am so proud that this breakthrough research has been published in the high impact journal Nature. I am sure this paper will be read and appreciated by agricultural scientists world over."

Rajendra S Paroda, Padama Bhushan Awardee & President, Trust for Advancing of Agricultural Sciences, India

"I am extremely happy to see this chickpea genomics paper published in Nature, which is not easy yet you have done it Rajeev. Let me congratulate you and all the co-authors for this. I am sure the findings of this study will help in accelerating pre-breeding and genomics-assisted breeding for needed genetic improvement in chickpea."

Partha P Majumder, National Science Chair, Government of India

"This is awesome work! Very elegant and deep, with significant translational implications. I am very proud of you, Rajeev. Especially because you are making these contributions from India".

Shobha Sivasankar, Section Head- Plant Breeding and Genetics, International Atomic Energy Agency, Austria

"Congratulations, Rajeev, on this excellent work!!! Great to see your leadership for this massive effort, and a wonderful achievement and contribution to the chickpea community! Well done!!"

Arvind Kumar, Deputy Director General- Research, ICRISAT, India

"Rajeev and Team, Heartiest congratulations to you all. A proud moment for all of us. The outputs from this article are expected to help chickpea improvement programmes around the world and will contribute to enhance crop productivity, resilience and nutrition. Great work and keep it up".

David Morrison, Deputy Vice Chancellor, Murdoch University, Australia

"It is wonderful to see this international collaboration delivering impact oriented outputs to improve international agriculture. Congratulations, Rajeev and thanks for working with us at Murdoch University."

Yemi Akinbamijo, Executive Director, Forum for Agricultural Research in Africa, Ghana

Congratulations, to you Rajeev and your team for this outstanding feat. It is great to see so-called orphan crops like chickpea joining the elite group of crops- thanks to your leadership and contributions. I am sure that the outputs of this article will be contributing to enhance crop productivity and deliver higher produce to small-holder farmers in Asia and sub-Saharan Africa and further help to raise livelihoods.".

BOX 2: Continue - Testimonials to Prof Varshney by Stalwarts of Agribiotechnology

Andreas Graner, Executive Director & Head of Genebank, IPK-Gatersleben, Germany

"Many many congratulations to Rajeev and team for this landmark paper in crop genomics published in Nature. This is indeed a largest plant genome sequencing study at the whole genome level. Pan genome, species divergence, and domestication and migration routes are providing insights in the area of basic plant science. At the same, superior haplotypes, genomic prediction approach and genetic load reported in this article will turbocharge chickpea improvement. Further, the outputs of this article will also help in germplasm management. Great work, indeed, Rajeev!"

Peter Davies, Pro-Vice Chancellor and Director, Food Futures Institute, Murdoch University, Australia

"Here at Murdoch, we're working hard in pursuit of the UN's Sustainable Development Goals of eliminating hunger and poverty and promoting sustainable production. Rajeev's research is important in this pursuit and we're really pleased to be collaborating with him on a global scale."

Chike Mba, Team Leader, Seeds and Plant Genetic Resources, Plant Production and Protection Division, Food and Agriculture Organization of the United Nations, Italy.

"I have read with keen interest the recent publication on the chickpea genome variation in the esteemed scientific journal, Nature. The seminal article, which chronicles a massive amount of work on whole genome sequencing of chickpea at a large scale,

is a most timely contribution to the efforts to understand and exploit the heredity of the crop's traits. In particular, the information contained in the paper will be extremely important for enhancing use of genomics-assisted breeding in the genetic improvement of this food security crop. I look forward therefore to a greater ease in breeding more productive and nutritious varieties of chickpea that are also climate resilient in support of the low input production systems of small-holder farmers in developing countries. My sincere congratulations and appreciation to you, Rajeev, for establishing and leading this international consortium and for the successful completion of this herculean task! Well done, Rajeev and team!"

Prof Rajeev Varshney Once again appears among the Top 1% of the Highly Cited Researcher in world

Last but not the least, Prof. Varshney has been included (again) 8th time in a row in #HighlyCitedResearchers list for 2021 https://bit.ly/3cdpgyq. This list recognizes the true pioneers in their fields over the last decade, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for field and year in the Web of Science™. Of the world's scientists and social scientists, Highly Cited Researchers truly are one in 1,000.

As per one study at Stanford University (USA) published in PLoS Biology on 16 Oct 2021, Prof. Varshney was included again in Top 2% World's Scientists. He is ranked at 2nd in Plant Biology & Botany section among Indian scientists.

Prof. Ashok Pandey continue to be in Top 1% Highest Cited Authors in the world and no. 1 from India

November 2, 2021

- Prof Pandey is No.1 from India among 21 scientists.
- 6,602 researchers from more than 70 countries and regions have been recognized this year.
- Clarivate Identifies the One in 1,000 Citation Elite with Annual Highly Cited Researchers List.

Cited by		VIEW ALL
	All	Since 2016
Citations	56249	30806
h-index	114	85
i10-index	533	449

Clarivate Plc, a global leader in providing trusted information and insights to accelerate the pace of innovation, unveiled its 2021 list of Highly Cited Researchers™. The annual list identifies some 6,600 researchers from across the globe who demonstrated significant influence in their chosen field or fields through the publication of multiple highly cited papers during the last decade. The Highly Cited Researchers' names are drawn from the publications that rank in the top 1% by citations for field and publication year in the Web of Science™ citation index.

About Professor Ashok Pandey

Professor Ashok Pandey is currently Distinguished Scientist at the Centre for Innovation and Translational Research, CSIR-Indian Institute of Toxicology Research, Lucknow, India and Executive Director (Honorary) at the Centre for Energy and Environmental Sustainability – India. His major research and technological development interests are industrial & environmental biotechnology and energy biosciences, focusing on biomass to biofuels & chemicals, waste to wealth & energy, industrial enzymes, etc. He has ~1450 publications/communications, which include 16 patents, 95 books, >700 papers and book chapters, etc. with h index of 114 and >54,000 citations (Goggle scholar).

Prof Pandey is Editor-in-chief of Bioresource Technology, Honorary Executive Advisors of Journal of Water Sustainability and Journal of Energy and Environmental Sustainability, Subject editor of Proceedings of National Academy of Sciences (India) and editorial board member of several international and Indian journals including Indian Journal of Biotechnology.

Prof. P. Reddanna, validated the 12R-LOX as the target for the development of anti-psoriasis drugs

November 2, 2021

A team of researchers from the School of Life Sciences, University of Hyderabad comprising Prof. P. Reddanna, Advisory Board Member of Biotech Express, Dr. Kumar Reddy and Dr. Nooruddin Khan and from Dr. Reddy's Institute of Life Sciences comprising Mr. Harshavardhan Bhuktar, Mr. Sharda Shukla and Prof. Manojit Pal have validated the 12R-LOX as the target for the development of anti-psoriasis drugs through a series of in vitro and in vivo experiments, including generation of 12R-LOX overexpressing transgenic mice and efficacy of 12R-LOX inhibitors.

A recognized feature of psoriasis and other proliferative dermatoses is the accumulation in the skin of the unusual arachidonic acid metabolite, 12R-hydroxyeicosatetraenoic acid (12R-HETE), a product of 12R-Lipoxygenase (12R-LOX). Microarray studies, in humans, reveal that 12R-LOX was pathologically over-expressed during the Psoriasis and other proliferative skin dermatoses. Deletion of 12R-LOX in mice results in impaired development of skin, which accounts for post-natal lethality. Conversely, overexpression of 12R-LOX has been implicated in Psoriasis, while deleterious mutations resulting in inactivation of 12R-LOX results in ichthyosis (skin disorder) characterized by disruption of cell-barrier functions. Thus, 12R-LOX forms a potential target for the development of proliferative skin disorders, including psoriasis.

A team of researchers from the School of Life Sciences, University of Hyderabad (Prof. P. Reddanna, Dr. Kumar Reddy and Dr. Nooruddin Khan) and from Dr. Reddy's Institute of Life Sciences (Mr. Harshavardhan Bhuktar, Mr. Sharda Shukla and Prof. Manojit Pal) have validated the 12R-LOX as the target for the development of anti-psoriasis drugs through a series of in vitro and in vivo experiments, including generation of 12R-LOX overexpressing transgenic mice and efficacy of 12R-LOX inhibitors. The lead compounds showing efficacy in vitro on the target enzyme and in vivo on animal models have been granted Indian Patent No. 377565 || Title: HETEROCYCLIC COMPOUNDS AS LIPOXYGENASE INHIBITORS, date of grant: 22/9/2021). A PCT has also been filed for this invention (International Publication number WO 2020/255156 A1, 24 Dec 2020).

This invention is the outcome of a collaborative project between the two institutions funded jointly by the Department of Science and Technology (DST) and Dr Reddy's Laboratories Ltd (DRL), for a project on "12-R-Lipoxygenase as Target for Discovery and Development of Drugs Against Psoriasis".

Editorial

Who is Rajesh Sudhir Gokhale, the new DBT, India Secretary

by Seema Pavgi Upadhye

Dr Rajesh S. Gokhale, a scientist of the National Institute of Immunology (NII), New Delhi, has been appointed as the new secretary of the Department of Biotechnology (DBT), Government of India effective from Nov. 1 2021. Biotech Express magazine congratulate Prof Gokhale on this new role and wishes more promotion of Indian Biotech sector through his efforts.

Here are some facts about Dr Gokhale:

Education

Dr Gokhale (born 16/01/1967) did his graduation in B.Sc. Chemistry from Delhi University and M.Sc. in Biotechnology from Indian Institute of Technology (IIT) - Bombay, Mumbai, India in 1990. He then obtained his PhD from Indian Institute of Science (IISc) Bangalore in the area of Protein Folding and Stability and Postdoctoral studies in Polyketide Synthases and secondary Metabolite Biosynthesis from Stanford University, USA. He moved back to India to join faculty of National Institute of Immunology (NII), Delhi in the year 1999 as Staff Scientist-IV. He subsequently served as the director of the CSIR Institute of Genomics and Integrative Biology from 2009 to 2016, before returning to the NII in 2017. He also briefly served as the director-in-charge of the NII in 2021, and in September moved on deputation to the Indian Institute of Science Education and Research (IISER) Pune, as a professor.

Research Interest

Dr Gokhale is recognized in his field for his research work in the area of Chemical Biology. Gokhale is a leading scientist on the study of tuberculosis. He is credited with the discovery of a family of Long-chain Fatty acyl-AMP ligases (FAAL) and his studies assisted in the elucidation of biochemical crosstalk between fatty acid synthases and polyketide synthases in Mycobacterium tuberculosis.

The present focus of Prof. Rajesh Gokhale's laboratory is to elucidate interplay between metabolic reprogramming and immunity in the context of infectious disease tuberculosis (TB). Clinical treatment of infectious diseases has often focussed on efficient pathogen elimination and disease severity has been assumed to be a direct function of pathogen burden. This perspective has failed to explain several complexities of TB pathogenesis, such as wasting syndrome cachexia (a condition associated with progressive loss of muscle mass and functions). Infection by pathogens can trigger variety of responses in host that as a consequence could result in multisystem dysfunction and

pathology. Future intervention strategies developed based on these considerations are likely to maximize patient's survival and also their health-related quality of life.

He has also made important contributions towards understanding the interplay between metabolic reprogramming and immunity vis-à-vis the autoimmune skin disorder known as vitiligo.

Awards

He has received several awards, including:

1. Sun Pharma Research Award
2. IIT Bombay Distinguished Alumnus Award
3. Infosys Prize in Life Sciences
4. National Bioscience Award for Career Development
5. Tata Innovative Fellowships, DBT, India (2007)
6. Shanti Swaroop Bhatnagar Prize in Biological Sciences
7. Scopus Young Scientist Award, Elsevier India (2006)
8. Swarnajayanti Fellowships, DST
9. HHMI International Research Scholar, USA
10. B.M. Birla Science Prize in Biology
11. Wellcome Trust International SRF India

Professional Membership

Dr Gokhale is member of many professional and academic bodies and societies. He is a Fellow of three major Science Academies of India viz. the Indian National Science Academy, Delhi; the National Academy of Sciences, Allahabad and the India Academy of Sciences, Bangalore.

He also served as a member of the editorial board of some of the prestigious journals like Journal of Biological Chemistry (2014-2017), as section editor of the journal Tuberculosis (2007-2017) and with the Indian Journal of Biochemistry & Biophysics (2013-present). He was elected to the Guha Research Conference in 2005.

Dr Gokhale as Scientist-Entrepreneur

He started M/s Vyome Bio Sciences Pvt. Ltd. under the Government of India approved policy allowed through an Office Memorandum in 2009, by DSIR, formulating a Scheme for 'Encouraging Development and Commercialization of Inventions and Innovations. The Scheme was implemented in CSIR, permitting Scientific Researchers to hold equity stakes in scientific enterprises /spin offs while in professional employment with their Research and Academic Institutions and also provided exemptions from some rules applicable to the scientists.

Selected Publications of Dr Gokhale

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Editorial

Legal Battles In Biotechnology: A Glimpse of Indian Bar Association Activities against COVID-19 Pandemic Measures by Govt. and Industries

by Kamal Pratap Singh

Indian Bar Association (IBA) is an association of lawyers who are united in the cause of bringing in transparency and accountability in Indian judiciary. The members of IBA share the common zeal of working towards maintaining the Rule of Law, in which the judiciary has a pivotal role to replay.

IBA works relentlessly in its pursuit of preserving the sanctity of justice delivery system and to achieve this, IBA is actively involved in dissemination of legal knowledge and providing guidance and support to advocates and common men in their fight for justice.At the same time, IBA keeps a strict watch on various judgments in its realm, which are likely to have an impact on society by setting judicial precedents for future cases.

The observations are shared and widely circulated in the media, to spread awareness in society and enable even a common man to decipher the supposedly complex procedures of law.

Website: https://indianbarassociation.in/

This article discusses the acttivities of IBA and AIM which are undertaken w.r.t. legal aspects toward various measures that were taken by Indian govt. The article is articulated under following headings:

IBA petition found that Vaccination is not mandatory as per central govt guidelines

Reported by IBA on October 23, 2021, according to the latest affidavit filed by Ministry Of Health And Family Welfare, In a new exposure of malafides of State Government, unravelled by the Central Government, it is

made clear that the Central Government has never issued any directions for mandatory vaccination. However, the State Government authorities have started pressurizing and harassing teachers and the common man to take vaccines. The affidavit is filed in a Writ Petition No. 1820 of 2021 filed by teaches (Mr. Nelson Fernandes&AnrVs. State of Goa).

The relevant paras of the affidavit dated 08.10.2021 filed by the Under Secretary of Ministry of Health & Family Welfare reads thus;

"9. that the directions and guidelines released by Government of India and Ministry of Health and Family Welfare, do not entail compulsory or forcible vaccination against COVID 19 disease implying that COVID-19 vaccination is completely voluntary for all citizens of India. Ministry of Health and Family Welfare, Government of India has not formulated or suggested any policies for discrimination between citizens of India on the basis of their vaccination Status.

"10. That, it is duly advised, advertised, and communicated by MoHFW through various print and social media platforms that all citizens should get vaccinated, but this in no way implies that any person can be forced to be vaccinated against her/his wishes.

"11 That, as per the existing guidelines, there is no provisions for forcing any citizen to book appointment for COVID Vaccination

IBA also served notice to Dr. Samiran Panda, Scientist G & Director, ICMR-NARI, Pune for making a false and misleading statement that the person having natural immunity should take vaccine. IBA argued that studies have shown that the natural immunity is more robust and 13 times better than the fully vaccinated people. The notice added that it is clear that the vaccination is not a guarantee of protection either from Covid-19 or from death due to Covid19.

Complaint before CBI to arrest Srinath Reddy and other fraudsters at PHFI for misallotment of funds

According to a news report by IBA on October 23, 2021, Awaken India Movement (AIM) with IBA files a Complaint before CBI to arrest Srinath Reddy and other fraudsters at PHFI for misappropriation of Rs. 82 Crores of public money. CBI has already registered an FIR. Indian Bar Association demands that the PHFI's accused trustees should be added as co-accused and to be arrested soon. The accused have misappropriated the public money and are therefore liable for offences under section 409,120(B) & 34 etc. of IPC. Indian Bar Association shall be sending representation to CBI to add all the trustees of PHFI as accused. In a Complaint given by Adv. Ashwini Upadhyay, the Intelligence Bureau has also initiated enquiry against PHFI

There is another objectionable issue of payment of high salaries of around Rs. 1 Crore to trustees which should also be investigated.

The PFHI is getting funds from tainted foundations like 'Bill &Milinda Gates Foundation. The Parliamentary Committee's 72nd enquiry report has already exposed the conspiracy of Bill Gates and their entity PATH.

Dr. Soumya Swaminathan deletes her controversial Ivermectin tweet after sent IBA legal notice

IBA celebrated it as a thumping victory after Dr. Soumya Swaminathan (from WHO) went on the back foot and deleted her controversial tweet after IBA served a legal notice upon her for her disinformation campaign against Ivermectin.

After IBA filed a petition, The High Court of Bombay at Goa has refused to stop the use of Ivermectin for treatment of COVID-19 patients. The Bombay High Court has upheld the stand of Goa Government, who submitted that the WHO Advisory against the use of Ivermectin for COVID19 is flawed. The sponsored agenda to prevent the use of Ivermectin and to put the life of citizens in danger was stopped in its tracks, due to firm stand taken by Goa Government and the Bombay High Court, said IBA.

Earlier, some of the petitioners have flagged the issue of the approval by the State of Goa of Ivermectin for its therapeutic or prophylactic uses. It is submitted that this particular medicine does not have the approval of either our DCGI or international regulatory authorities. It is submitted that in fact WHO has issued an advisory against the use of Ivermectin for COVID related treatment."

The main Respondent i.e. State Government of Goa, in their reply, pointed out to the Court that the advisory of WHO against Ivermectin is not reliable and is flawed.

IBA has issued legal notice on May 25, 2021 to Dr. Soumya Swaminathan, the Chief Scientist at the WHO, for her tweet against the use of Ivermectin. In the said notice, IBA has exposed

the malafides of Dr. Soumya Swaminathan for suppressing the authentic data of front Line COVID-19 Critical Care Alliance (FLCCC) and the British Ivermectin Recommendation Development Panel (BIRD).

The Indian Bar Association has warned action under section 302 etc. of the Indian Penal Code against Dr. Soumya Swaminathan & others, for murder of each person dying due to obstruction in treatment of COVID-19 patient effectively by Ivermectin. Punishment under section 302 of the Indian Penal Code is death penalty or life imprisonment.

After receiving the said notice, Dr. Soumya Swaminathanwent on the back foot and deleted her tweet on Ivermectin.

The dishonesty of WHO and the act of Dr. Soumya Swaminathan deleting her contentious tweet was witnessed by netizens across the world, as the news got a wide coverage on social media. By deleting the tweet, Dr. Soumya Swaminathan has proved her malafide intentions, added IBA.

The action of IBA serving a legal notice upon Dr. Soumya Swaminathan, has garnered immense appreciation and widespread support from several netizens including doctors, activists, journalists, political leaders and media groups, IBA wrote on its website.

Moreover, the judgment of Bombay High Court at Goa dated May 28, 2021 proved to be icing on the cake for Ivermectin. While the matter came up for hearing before the Bombay High Court at Goa, the Court refused to accept the advisory of WHO. The Court has upheld the Guidelines of Indian Council of Medical Research (ICMR). Ivermectin has been allowed for treatment of COVID-19.

The Health Minister of Goa has expressed their gratitude to the High Court by posting the following message on Facebook on May 28, 2021:

"We are grateful to the Hon'ble High Court for accepting Govt. of Goa's decision to use Ivermectin for treating Covid-19.This is a crucial step taken by the Govt. of Goa on advice of our expert team of doctors with an aim to help us in reducing the infectivity rate and control surge of COVID-19 cases. Our team is working hard to ensure we are efficiently able to battle the pandemic."

All those who were opposing the use of Ivermectin on the basis of Dr. Soumya Swaminathan's tweet have fallen flat on their face after she deleted her tweet. However, deleting the tweet will not save Dr. Soumya Swaminathan and her associates from the criminal prosecution which is to be launched by the citizens with active support from the Indian Bar Association.

Court orders registration of FIR against six doctors after Corona scandal exposure and death of a woman

According to IBA, one woman had lost her life in a minor operation and the doctors had refused to give her dead body to her family, based on a bogus corona positive RT-PCR test. The truth unravel because her husband had already done five tests – one RAT and four RT-PCR tests and all were negative, which proved the forgery and dishonesty of the Doctors.

Upon complaint, the Court directed the police for registration of FIR under offences of conspiracy, forgery, causing death by negligence and destroying evidence. The Police Station at Panvel City has already registered an FIR against six Doctors u. sec 304-A, 465,471,120(B), 201, r/w 34 of IPC.

The court order reads like this;

Now coming to the merits of the present application, it could be seen that, a woman has lost her life over a minor operation of abortion. As the operation was conducted in the high tide of the ongoing pandemic, therefore, the concerned doctors ought to have scrupulously followed the guidelines of the ICMR regarding testing of the patients before conducting any operation.

From the allegations set forth in the present application, it could be seen that, there are about 6 reports for COVID19, out of which one is positive and the others are negative. Shockingly, the sample for these tests were taken in a short span of 3 days. Therefore, the present case appears to be case study material to find out how a person can come negative for COVID19 in just one day. The allegations that, the Gandhi hospital was not releasing the dead body on the guise of the deceased being tested positive for COVID19 and then eventually allowing postmortem to be conducted raises further suspicion. Therefore, whether these tests were really conducted or it was used as an excuse to not allow the applicant and his family to know the real cause of death is to be investigated which can be done only by the police machinery.

Further, if this allegation has any truth to it then the next thing to discern is why this route was adopted by the non applicants. Was it to hide

any medical negligence that resulted in the death of the deceased Ashwini? These things can be brought before the Court which can only be done after a thorough investigation by the police machinery. Therefore, this Court is convinced that, the present application deserves directions under section 156(3) of the Cr.P.C. for registering an offence under section 304A, 465, 471, 201, 120B r/w 34 of the I.P.C.

The Officer in charge of Panvel City police station is directed as per section 156(3) of the Cr.P.C. to register the first information report against the non applicants for offence p.u.s. 304-A, 465, 471, 120B, 201 r/w 34 of the I.P.C. and investigate in accordance with law."

Bombay sessions court issued notice to jail authority directing them to investigate and prosecute doctors and police officers involved in forced vaccination of victim in judicial custody

In a Petition, vaccinated Victim has prayed for prosecution of doctor and concerned Police officer under section 336, 323, 319, 321, 307, 166, 109, 120(B) & 34 of Indian Penal Code, under Atrocities Act, section 145(2) of Maharashtra Police Act, section 51, 54, 55, 56, 58 of Disaster Management Act, 2005.

The victim belonging to Scheduled Caste Community was vaccinated against his will and without informing him of the dangerous side effects of the vaccines. He has claimed Rs. 5 Crores interim compensation. If the victim dies after vaccination then concerned doctor and other officers will also charged for murder as per section 302 of IPC.

Health Minister Mansukh Mandaviya served with the contempt notice to remove members from the decision-making board, Task Force, etc.

As per IBA website article posted on September 27, 2021, Health Minister Mansukh Mandaviya has been called upon to immediately remove the members from the decision-making board, Task Force, etc. who are associated directly or indirectly with the vaccine and pharma mafia or getting funds from black listed entities such as Program for Appropriate Technology in Health (PATH), Bill &Melinda Gates Foundation(BMGF), Public Health Foundation of India (PHFI) etc.

As per law laid down by the Supreme Court, any person sitting in a Government body and who is authorized to take a decision should not have any direct or indirect relations with the beneficiary companies.

If any decision was taken by the committee of such members then the said decision stands vitiated because of pecuniary bias. The persons spotted are:

(i) Prof. K. Shrinath Reddy,
(ii) Dr. Cherry Gagandeep Kang,
(iii) Dr. Balram Bhargava,
(iv) Shri. V.K. Paul,
(v) Dr. Soumya Swaminathan ,
(vi) Dr. Randeep Guleria,
(vii) Dr. K. Vijay Raghvan,
(viii) Dr. N.K. Arora ;

and others as mentioning in para 14 of this notice.

The notice also asked Shri. Mansukh Mandaviya to recall, withdraw, quash and set aside all recommendations, suggestions, rules, mask mandates et al. given by such disqualified members and lodge F.I.R. against the accused members who provided wrong and nonsensical recommendations for ulterior purposes of giving wrongful profits to vaccine and pharma companies and loss to 135 crore Indians.

The subject of the Notice reads thus;

To forthwith stop the contempt of law laid down by Hon'ble Supreme Court and follow the law and binding precedents of Constitution Bench of Hon'ble Supreme Court, and Hon'ble High Courts more particularly in the case of ;

(i) Mineral Development Ltd. Vs State (1960) 2 SCR 609.

(ii) A.K. Kraipak Vs. Union of India (1969) 2 SCC 262,

(iii) State of Punjab Vs. Davinder Pal Singh Bhullar (2011) 14 SCC 770,

(iv) Suresh PalandeVs. Govt. of Maharashtra 2015 SCC OnLineBom 6775.

AND TO FORTHWITH;

1.1 Remove the persons/bureaucrats, members of the Task Force etc.

from any decision-making process related with remedies and solutions regarding COVID-19 pandemic, who are directly or indirectly connected with any entity, NGO or Board that receives funds from Bill & Melinda Gates Foundation, Rockefeller Foundation, PATH, PHFI, where sole agenda is to reap profits for the vaccine manufacturers;

1.2 Issue immediate direction as per law laid down by the Constitution Bench of Hon'ble Supreme Court in the case of Mineral Development Ltd. Vs State (1960) 2 SCR 609,there by directing to all authorities not to follow, the illegal, unconstitutional, unscientific and nonsensical circulars and orders based on the recommendations and suggestions regarding vaccination, masks, RT-PCR test etc., issued by these disqualified members;

1.3 Issue directions for forthwith removal and withdrawl of all the false, misleading and illegal advertisements, caller tunes, Questions and Answers (FAQs) published by the Ministry of Health and Family Welfare on the basis of recommendations given by members who are in the disqualified category as per law laid down by Hon'ble Supreme Court.

1.4 Immediate direction to protect the rights of COVID cured citizens who are safest person as their immunity is proved to be 13 times better than fully vaccinated people and the citizen who are COVID cured or having natural immunity developed due to contact with corona are entitled for relief from COVID appropriate behavior before vaccinated people.

1.5 Direction to prohibit the members of ICMR, PATH, PHFI, BMGF etc., who found prima facie guilty by the Parliamentary Committee in 72ndReport and based on the evidences given in this notice from participating any board or body dealing with the corona management.

1.6 Direct prosecution u/s 51(b) of Disaster Management Act, 2005 against all the entities and all the persons who are directly or indirectly forcing the people to take vaccines or restricting their entries on the ground of non-vaccination.

1.6 Directions to authorities to not to publish misleading advertisements, slogans and publish correct fact that vaccines are not completely safe but having many side effects and vaccines are not solution or there is no guarantee that citizens will not get COVID and the person taking vaccine may die due to corona.

1.7 Directions to authorities to issue circulars to all State Governments and Central Government entities to not to conduct RTPCR/RAT Test of asymptotic and healthy persons.

1.8 Direction to authorities to not to draw any conclusions or not to take any policy decisions of lockdown or quarantine on the basis of RTPCR/RAT Test and only use the Gold Standard test of 'Virus Culture' for taking any policy decisions or recommendations etc.

Alongwith the notice give directions to all authorities to issue circulars, advertisements et al to make public aware that:

(a) Natural immunity caused due to Contact with COVID-19 is more than13 times better than the person fully vaccinated and such people are most safest persons. They will not get corona again and they cannot spread infection.

(b) Wearing mask is voluntary and there is no scientific proof that masks can prevent infection. And the healthy or asymptomatic people need not to wear mask. Also publish the scientific studies regarding damage caused to the lungs and also other side effects of wearing masks.

(c) Give wide publicity and proper support to the following result oriented remedies and treatments which are having far more efficacy than vaccines and not having no side effects with zero deaths as compared with many side effects and deaths due to vaccines:-

i) Naturopathy's – Three step Fluid Diet as formulated by Dr. Biswaroop Roy Choudhary and verified by National Institute of Naturopathy, Pune.

ii) 'K' medicine as verified & approved by the State Government of Andhra Pradesh and confirmed by the Hon'ble Andhra Pradesh High Court.

iii) Ayurvedic & yoga treatment as suggested by Baba Ramdev.

The point wise frauds and issues with proofs exposed by the sender of Notice are as under;

2.1. Duty of every citizen under Article 51 (a) of the Constitution of India.

2.2. ICMR survey exposed the non-efficacy of vaccines and also falsity of Health Ministry's claim.

2.3. Any person including Ministers, who are receiving salary is public servant and he is bound to act fairly, impartially and only for the welfare of the nation. Any deviation and misappropriation of public funds by misuse of power is punishable under Section 409 of IPC having punishment up to life imprisonment.

2.4. Law of disqualification of any person from taking part in process, who is interested in someone's profit and their agenda.

2.5. Even if there is a single member

who is partial and interested and there are other members who are impartial then also it vitiates and invalidate their recommendations, suggestions and all actions.

2.6. Failure to follow the law of disqualification and taking interested person makes such authority and Ministers liable for action under section 166, 218, 219,511, 120 (B) & 34 etc. of IPC and contempt of Supreme Court and various High Courts in India.

2.7. The Person/Minister joining the unlawful acts subsequently is also liable for same offences as that of principal offender.

2.8. Proofs exposing links of members of National Task Force with vaccine mafia Bill Gates and Others.

2.9. Conflicts of Interest and also criminal conspiracy in India's Public Health System.

2.10. Unlawful & unconstitutional partnership or collaboration with LLP or any private entity like PHFI, PATH et al.

2.11. As per Supreme Court judgment the honest members of body or Task Force who opposed the wrong, illogical and irrational decisions of the Task Force should not be prosecuted. But the members who did not opposed the unlawful activities should be arrested and don't deserve bail.

2.12. Misuse and fraud on power by corrupt, intellectually dishonest members of task force in giving recommendations, suggestion and in formulating rules which will cause wrongful gain to vaccine companies and having dangerous impact of various losses to citizen including loss of life and life time disabilities, loss of business and livelihood.

2.13. Dishonesty and fraud in bringing mask mandate.

2.14. Fraud and dishonest decisions of RT-PCR Test of asymptomatic persons.

2.15. Intentionally & deliberately suppressing the result of Sero survey which proved that around 70% of Indians have got natural immunity due to contact with Covid Sars-2 and they are the safest person and they cannot be asked to follow restrictions or to take vaccines because the immunity developed due to contact with corona (Covid-19) is more than 13 times better than the immunity developed due to vaccines.

2.16. Fraudulently, corruptly & malafidely running the false narratives and conspiracy theories of asymptomatic patients without any scientific data and proofs.

2.17. Study and reasoning on dangerous viruses found in healthy people.

2.18. Conspiracy and fraud to suppress the economical and highly effective medicines and remedies such as Ivermectin, Vitamin-D, Hydroxychloroquine, Naturopathy, Ayurveda et al. to show that there is no remedy and medicines to cure corona and this was done to serve their ulterior purposes of getting emergency use authorization (EUA) to the vaccines whose clinical trials are not completed and there were no proofs of its efficacy and its side effects were not studied properly as mandated in medical science.

2.19. Attempt to violate fundamental rights of citizens by forcing them to take vaccines and committing offences under section 323, 336, 115, 302, 304 etc., of I.P.C.

2.20. Misappropriation of around thousands of crores on vaccines and RTPCR tests.

2.21. Conspiracy to bring vaccine mandate for children's to give wrongful profit of thousands of crores to vaccine companies.

2.22. All the report and recommendation of the ICMR and other bodies cannot be the basis for any conclusion or recommendations because they are based on the result of test of RT-PCR at 35 Cycle Threshold (CT) which is having false positive rate of 97%. Therefore, any recommendation about efficacy of vaccines or lockdown or anything is not permissible on the basis of the results of RT-PCR Test.

2.23. Parliamentary Committee's 72nd report exposing corruption by ICMR and other officials involved in conspiracy to help vaccine syndicate sponsored by Bill and Melinda Gates Foundation and also responsible for offences of murder of female children. Supreme Court judgment upholds the evidentiary value of Parliamentary Committee Report.

2.24. Recommendation of the Parliamentary Committee asking for investigation and legal action against Bill Gates and officials of ICMR.

2.25. [a] Earlier attempt by accused WHO official to declare false pandemic:

[b] The H1N1 swine flu pandemic was "fake," and its threat to human health was hyped, and that World Health Organisation's (WHO) policies were influenced by vaccine manufacturers who benefited from the pandemic virus. Swine flu, Bird flu 'never happened': Probe into H1N1 'false pandemic'.

2.26. Fake Epidemics Created in the Past due to RT-PCR Misuse.

2.27. [A] National Technical Advisory Group on Immunization (NTAGI) recommendations vitiated in view of law laid down by Hon'ble Supreme Court in A. K. Kraipak's case (supra) because of having disqualified members.

[B] Dishonesty and falsity in NTAGI's declaration on conflict of interest.

2.28. Direction for enquiry as to under what provision of law the government had given a funding of Rs. 100 crores to PHFI and enquiry as to where and how the said funds were utilized.

2.29. Deliberate attempt to suppress the most effective Three Step Fluid Diet given by world's renowned naturopath Dr. Biswaroop Roy Chaudhary which is verified by Government of India's AYUSH Ministry's National Institute of Naturopathy Pune and having far better result than vaccines and having no side effects and Zero deaths.

2.30. Co- Conspirator, Social & main stream media's role to help the accused to complete their sinister plan.

2.31. In addition to above said offences, the accused 'print and social media' persons stopping, prohibiting or deleting the information are also liable for punishment under section 12 of Contempt of Courts Act, 1971 r/w Article 129 and 215 of Constitution of India for acting in willful disregard and defiance of binding precedent of Hon'ble Supreme Court and various High Courts in India.

2.32. Act of stopping, hiding, removing, suppressing, concealing and twisting material facts from any patient/citizen and leaving him no option but to adopt the option of dangerous vaccines is a preparation of offence mass murder of the people at large as defined under section 115, 511 of IPC.

2.33. Chronology of offences committed by accused as per their conspiracy to commit mass murders i.e. genocide for creating market for unapproved vaccines by accused Bill And Melinda Gates Foundation and other vaccine syndicates.

Legal notice for contempt of court against Dr. Tedros Adhanom Ghebreyesus, Dr. Soumya Swaminathan and the Directorate General Of Health Services (DGHS) to undermine the authority of the Bombay High Court and obstruct the use of Ivermectin for Covid-19 treatment

On 13th June 2021, Indian Bar Association has served a notice upon Dr.Tedros Adhanom Ghebreyesus, Director General, World Health Organisation, Dr.Soumya Swaminathan, the Chief Scientist at WHO and Prof. (Dr.) Sunil Kumar, Director General of Health Services for contempt of judgment of Bombay High Court MENTIONED ABOVE.

The Bombay High Court vide its judgment dated 28th May 2021 has already given a green signal for use of Ivermectin for treatment of COVID-19. Despite this, all the three contemnors have hatched a conspiracy and by spreading misinformation through media, are fuelling confusion amongst doctors by introducing Guidelines allegedly published on 27th May 2021 by DGHS, which are in fact not mandatory and are overruled by the judgment of Bombay High Court dated 28thMay 2021.

Thereafter, a detailed and impactful article was published by the leading newspaper 'Free Press Journal' on 6th June 2021 (updated on 14th June 2021) wherein the author has articulated very well as to how the advisories of WHO are dubious. https://www.freepressjournal.in/india/covid-19-are-whos-directives-being-taken-seriously-on-the-ground

Surprisingly, in its first, the Directorate of Health Services (DGHS) on 27th May, 2021 announced 'Comprehensive Guidelines for Management of COVID-19 patients' which excludes Ivermectin and several popular drugs. It is worthwhile to note that DGHS is a repository of technical knowledge and is an attached organization of the Ministry of Health & Family Welfare. The Guidelines/National Protocol have always been issued by the Joint Task Force of All India Institute of Medical Science (AIIMS) and Indian Council for Medical Research (ICMR) under the aegis of Government of India.

Moreover, the document containing these impugned Guidelines does mention version/date and does not carry logos of Government of India, ICMR and AIIMS, suggesting lack of consensus between DGHS and the Joint Task Force.

Now, in order to diminish the impact of the article published on 6th June, 2021, the main accused Dr. Soumya Swaminathan hatched a conspiracy and managed some media houses to publish news on 7th June, 2021 for appreciating the overruled guidelines dated 27th May, 2021. Some of these media houses have showed astounding alacrity in publishing news hailing removal of Ivermectin and other drugs, thereby deliberately ignoring the mountains of clinical data on effectiveness of Ivermectin in treatment of COVID-19.

These impugned Guidelines issued by DGHS were circulated first on 7th June

2021, without any mention of the judgment of Bombay High Court dated 28thMay, 2021, which in fact is against the said guidelines, rendering these guidelines as null and void.

As per the judgment of Supreme Court of India, the person responsible for spreading information with object of creating confusion and to obstruct and undermine the judgment of court is liable for punishment under contempt of Court. Sections like 505,192,302, 115,109,409,120(B) of the Indian Penal Code are also attracted against the accused in this case, as their intention was to kill several people to fulfil their ulterior purposes. The maximum punishment in above cases is death penalty.

The notice states that Dr. Soumya Swaminathan and the WHO are dishonest and have no scientific evidences to back their advisories and such loose statements are issued from time to time, to serve their ulterior purposes.

The legal notice also explains the law of damages in India citing recently cases where Court had ordered compensation of Rs. 100 Crores ((USD 13.5 mn) to the aggrieved party, for loss of his reputation. Since the present matter involves death caused due to denial of early treatment resulting in deterioration and death of person, the damages claimed would be much higher that Rs. 100 Crores.

The notice also explains the liability of Dr. Tedros Adhanom Ghebreyesus, Director General of WHO, for his act of commission and omission and also for his implied consent to the conspiracy.

In the similar manner, the DGHS Prof. (Dr.) Sunil Kumar is joined in as co-accused for his complicity in the conspiracy.

"As a generic, Ivermectin is cheap and widely available, which means there would be a lot less money to be made by Big Pharma if it became the go-to early-stage treatment against COVID.

Other pharmaceutical companies are developing their own novel treatments for COVID-19 which would have to compete directly with Ivermectin. If approved as a COVID-19 treatment, Ivermectin could even threaten the Emergency Use Authorization granted to COVID-19 vaccines.

It's worth noting that while India's DGHS has dumped most cheap off-patent treatment options against COVID, including even multivitamins, more expensive patented medicines continue to get the green light. They include Gilead's prohibitively expensive antiviral Remdesivir, which DGHS continues to recommend for "select moderate/ severe hospitalized COVID-19 patients", even though "it is only an experimental drug with potential to harm." It has also authorized the use of the anti-inflammatory medicine to Cilizumab, which costs hundreds of dollars a dose."

The three possible explanations for such an intense opposition to the use of highly promising, well-tolerated off-label medicine as Ivermectin are explained very well in following article: WHO Celebrates As Indian Health Regulator Removes Ivermectin from Its Covid-19 Protocol | naked capitalism (https://www.nakedcapitalism.com/2021/06/indias-health-ministry-just-removed-ivermectin-from-its-covid-19-protocol-no-questions-asked-no-explanations-given.html)

Youtube & Google slapped with Rs. 1000 crores compensation and contempt notice, for acting against the law and the constitution in order to help the vaccine syndicate.

The present notice sent by Adv. Abhishek Mishra renowned Social Activist and Awaken India Movement's member Shri. Virendra Singh says that the act of YouTube is not only against the Constitution of India and binding judgment of Supreme Court and High Court but also against the **United Nation's Universal Declaration of Bioethics and Human Rights, 2005 and International Covenant on Civil & Political Rights.**

YouTube has deleted videos of many researchers, doctors, activists and citizens which were regarding the frauds, malpractices and illegalities by the vaccine syndicate. Also, the videos were regarding awareness of public about the fatal side effects.

Recently German High Court fined YouTube with 1,00,000 Euros. In another case of misinformation campaign, the U.S. Court recorded the guilt of Glaxo Smith Kline where the company agreed to pay $ 3 Billion (around Rs. 2278 Crore).

YouTube and Google are said to have joined the conspiracy to remove the information exposing malpractices of vaccine syndicate and additionally running a misinformation campaign

to promote the vaccine as safe and the 'only solution' to cure COVID-19 infection.

That, YouTube involved in a conspiracy to suppress the data and run only one false narrative that vaccines are safe and only solution.

In furtherance of the said sinister plan, YouTube at their own have uploaded many videos of several 'captured' doctors to spread misinformation that 'vaccines are completely safe and the only available complete solution against the Covid-19.

Falsity of its advertisements, interviews, false narratives and conspiracy theories have been exposed from the following;

(i) Vaccine is not a solution against corona since people who are getting two doses of vaccine are also infected with corona and some of them have died. (https://drive.google.com/file/d/1gFR9YyJnjxTu3-Q-D2uG-PmF7uAG4cDp/view?usp=sharing,

https://theprint.in/health/at-least-60-delhi-doctors-have-died-in-2nd-covid-wave-families-are-left-to-pick-up-pieces/661353/, https://www.ndtv.com/india-news/dr-kk-aggarwal-ex-chief-of-india-medical-association-ima-dies-of-covid-19-coronavirus-2443827)

(ii) Vaccines are not safe at all and vaccines are having several side effects including death.

(https://drive.google.com/file/d/1uikc1a6_KDzUx7HNLrfwaI1NJRt0D_YP/view?usp=sharing,

https://u.pcloud.link/publink/show?code=kZ03dwXZcrC28I-987y41sJlCLpBSUbgJHz07)

(iii) The immunity developed in the person due to his/her coming in contact of SARS-CoV-2 i.e. Natural immunity is far superior to the vaccines. It is at least 13 times superior to the immunity developed due to vaccines. (https://youtu.be/6v5VrpgXPm4)

However, YouTube runs unilateral and false narrative and have always tried its level best to suppress and conceal the true information from common people. This is in fact an offence of luring the people to take medicine by misrepresenting the public at large. It is an offence punishable under section 420 r/w 120(B) & 340 of I.P.C.

Citing the judgement, IBA wrote, that Hon'ble Meghalaya High Court in Registrar General, High Court of Meghalaya Vs. State of Meghalaya 2021 SCC OnLineMegh 130, ruled by High Court as under;

"Thus, by use of force or through deception if an unwilling capable adult is made to have the „flu vaccine would be considered both a crime and tort or civil" wrong."

In the notice sent by Social Activist Virendra Singh the YouTube, Google are called upon to;

That the offences committed by You Noticee *are* continuing ones and my client's defamation is still going on. Hence, you are hereby called upon to;

*(*i) Publish an apology on Facebook / Youtube / Twitter. (ii) Pay my client a compensation f Rs. 1000 Crores for defamation through Demand Draft(DD) within 7 days of receipt of this notice. (iii) Remove restriction and restore the videos forthwith. (iv) Immediately stopping the misinformation campaign run by you with ulterior motives to help the vaccine mafias and cheat the public and thereby putting citizens' life into jeopardy. (v) Immediately stopping the Contempt of Hon'ble Supreme Court and Hon'ble various High Courts in India. (vi) To immediately start respecting & following the Constitution of India and our country's domestic laws and also to act as per United Nations Universal Declaration on Bioethics, 2005 & International Covenant on Civil & Political Rights.

The notice also states that, the notice is independent of and given by reserving the issuer's rights to initiate criminal prosecutions under sec. 499, 500, 501, r/w 120(B), 34 etc. of Indian Penal Code and under Section 12 of Contempt of Courts Act, 1971 r/w Article 129, 215 of the Constitution of India in the competent courts and even if YouTube pays compensation amount of Rs. 1,000 Crores will not permit them in law, for claiming discharge or exoneration from prosecution.

Legal notice served upon facebook claiming compensation of Rs. 500 crores for its act of deleting the posts regarding adverse effects of corona vaccines

In Sptember 2021, the notice was issued by Adv. Tanveer Nizam to facebook on behalf of renowned Activist and Naturopath Smt. Nisha Koiri mentions that the deleted posts were based on correct facts and as a part of his client's duty under article 51 A of the Constitution of India. Therefore, deleting the post is violative of Article 14,19 and 21 of the Constitution of India.

As per the Constitution of India and as per specific laws laid down by the Supreme Court and Delhi High Court, every Indian has freedom of speech

and expression. The citizens also have the fundamental rights to know the correct information. As per article 18 of the Universal Declaration on Bioethics and Human Rights 2005 and the International Covenant on Civil and Political Rights (ICCPR) the discussion and opinions from all parts of the society need to be welcomed and promoted.

The said article reads thus; Article 18 – Decision-making and addressing bioethical issues

Professionalism, honesty, integrity and transparency in decision-making should be promoted, in particular declarations of all conflicts of interest and appropriate sharing of knowledge. Every endeavor should be made to use the best available scientific knowledge and methodology in addressing and periodically reviewing bioethical issues.

Persons and professionals concerned and society as a whole should be engaged in dialogue on a regular basis.

Opportunities for informed pluralistic public debate, seeking the expression of all relevant opinions, should be promoted.

Article 19 of the ICCPR Convention reads as follows:

(1) Everyone shall have the right to hold opinions without interference;

(2) Everyone shall have the right to freedom of expression, this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art or through any other media of his choice."

India has ratified the ICCPR. Section 2(d) read with 2(f) of the Protection of Human Rights Act, 1993 clarifies 'human rights' to include the rights guaranteed by the ICCPR.

Supreme Court of India had time and now ruled that freedom of expression is meant to include the right of all citizens to speak, publish and express their views. The freedom of the press embodies the right of the people to read.

Noncompliance with the law laid down by the Supreme Court makes the Facebook head Mark Zuckerberg and other office bearers of the Facebook liable for action under the Contempt of Courts Act where the punishment is up to six months imprisonment.

Deleting a post without lawful reason amounts to defamation as per Indian laws and it is punishable under section 500, 501 of Indian Penal Code where punishment is two years imprisonment.

The Facebook cannot act like a Judge of a Court and decide as to whose information is correct or wrong. The act of running only one narratives in favor of vaccines and compelling citizens to take these vaccines, also makes the Facebook liable to face the charges of attempt to commit murder, if the side effects of vaccines are suppressed and if the person is compelled to take vaccines by suppressing data to mislead the said person and if the said person dies due to side effects of vaccines, then Mark Zuckerberg and other office bearers of the Facebook are liable for action under sections 302, 115, 52, 120(B), 34 of Indian Penal Code and they may face the death penalty for mass murders and genocide.

Recently, in a case against YouTube, the German Higher Regional Court fined YouTube with 1,00,000 Euros after it wrongly deleted a user's video which showed massive pandemic lockdown protests in Switzerland – and then failed to reinstate the video 'immediately' after the court ordered it to do so.

Meanwhile, a so-called independent fact-checker website FactCheck.org was exposed to be funded by the same $1.9 billion vaccine lobby group that it is supposed to check. The site is a Facebook partner whose articles are used to censor critical voices on the social media platform. It is headed by the former CDC director, which is again a conflict of interest.

In a shocking revelation came to light that Google and USAID funded research conducted by Peter Daszak's EcoHealth Alliance – a controversial group which has openly collaborated with the Wuhan Institute of Virology on "killer" bat coronavirus research – for over a decade. In a move against this Big Tech censorship of free speech, Poland is planning to make censoring of social media accounts illegal.

Letter of Representation to PM toward Urgent need to rectify the utter disregard for science regarding children's corona vaccines

Indian Bar Association (IBA) has also sought prosecution of Dr. V.G. Somani, Dr.Randeep Guleria and others for misuse of their position to create a false alarm of emergency in children, while there is no emergency.

'Doctors for Truth' and Concerned Citizens of India have written to Hon'ble Prime Minister of India on October 7, 2021 regarding urgent need to rectify

the utter disregard for Science while deciding corona related measures that have special worrying effects on children.

IBA has sent its Letter of Representation on October 8, 2021 endorsing the concerns expressed in above mentioned letter and in addition, IBA has called for CBI investigation against Dr. V.G. Somani, Randeep Guleria and others for misuse and fraud on power.

More than 100 doctors and more than 1000 members of civil society have signed a letter sent to Hon'ble Prime Minister of India on October 7, 2021 exhorting not to go ahead with vaccination of children as they have already developed immunity and are at no risk of severe Covid. The letter highlights that :

- The corona vaccines are not fully approved (approved for restricted use only) without any knowledge of long-term effects.
- Experts have confirmed that letting children catch Covid may be safer than giving them vaccines, our children have already acquired immunity post Covid infection and on the other hand, these experimental vaccines wherever they are rolled out, are not found to be safe enough.
- Worldwide a cascade of serious Adverse Effects have been seen in adults and children in 2021 after the 'Emergency Use Authorisation' was granted for restricted use of Covid-19 vaccines.
- As per a German Court verdict, that masks, distancing and regular testing of children for Covid-19 should not be done. These measures are not only not useful but are actually harmful.

The signatories of the letter demand that:

1. All Covid-19 vaccine clinical trials on children should be stopped.
2. The Covid-19 vaccination for children should not be rolled out even if vaccines are given EUA for restricted use, and no vaccines, currently under trial, to be given EUA.
3. Immediate reopening of schools and colleges without any delay or restrictions as advised by experts.
4. No testing of asymptomatic children at school or home.
5. No experimental and unapproved drugs should be used in the treatment of children who test positive and/or have Influenza Like Illness (ILI) rather children should be subject to standard of care using proven, tested and repurposed drugs and Ayush protocols under an Integrated Medicine Healthcare approach. It is our experience that experimental drugs have proved harmful for adults in the 1st and 2nd wave.
6. No testing, tracing, quarantine at mass level either routinely or as part of job, earning activity, entry to certain places or for travel as has been scientifically advised once community transmission has set in.

Indian Bar Association (IBA) has sent its Letter of Representation on October 8, 2021 to Hon'ble Prime Minister, Hon'ble Home Minister, Hon'ble Health Minister, Hon'ble Chief Ministers Hon'ble Health Ministers of all the states of India.

While IBA is in full agreement with the facts shared in the letter by Doctors for Truth and Civil Society, it has called for:

Immediate direction to C.B.I. for investigation and prosecution under Section 409, 420, 115, 109, 323, 511, 120(B) etc. of Indian Penal Code and provisions of Prevention of Corruption Act against Dr. Randeep Guleria, and others for misuse and fraud on power in: i) Giving Emergency Use Authorization for Children's Vaccines, when there is no emergency as there is no serious threat to children; ii) Running false narratives and conspiracy theories to create fear in the mind of parents, children and teachers about Covid-19, when children are most safe and not having any serious risk from infection from SARS-CoV-2.

iii) Immediately directing investigation about corruption being done to give undeserving advantage of around Rs. 80,000 Crores to children's Vaccine manufacturers.

iv) Immediate direction for stopping any process for including children's corona vaccines in National Immunization Programme.

Note: The article is compilation of news reported on website of IBA i.e. https://indianbarassociation.in/covid-19/. The author and Biotech Express takes no responsibility for any error in the article. For cross verification and more detailed news readers are suggested to visit IBA website.

Event

Biosafety and Biosecurity in Biotech: COVID 19 and Beyond!

FABA in collaboration with FABA Bangladesh Chapter, FABA Academy, and University of Hyderabad (UoH) Aspire BioNEST conducted the Workshop on "Biosafety and Biosecurity in Microbiological, Biomedical Research, Diagnosis and Clinical Care" virtually on weekends and spanned a total of 7 days (22nd October to 6th November, 2021). Nearly 128 participants, from Bangladesh, India, Malaysia, Morocco, and Nigeria participated in this workshop. Of these, 40 % were from various leading biopharma industries, including Indian Immunologicals Limited, Biological E. Limited, Curateq Biologics Private Limited, Integrated Cleanroom Technologies Private Limited, Hetero Biopharma Limited, Biosafe Lab India Private Limited, and Syngene International Limited. Altogether, 25 experts from the academy, industry and Government agencies participated as resource persons.

This training workshop constituted of 13 modules focusing on ensuring biosafety and biosecurity in human and animal health research and diagnostic and in production facilities and to protect the environment from biohazards. This training package has created a thorough understanding onbiosafetyand biosecurity while generatingknowledge andskillsand aiming to motivate the individuals to apply biosafety principles and practices in research, diagnostics, and biopharma industries. The workshop also providedin-depth knowledge on writing Standard Operating Procedures (SOPs) forhealthcare facilities, laboratory testing, operations, and management. At theend of each day, the knowledge gained by the participants was assessed through a mini quiz.

The 7-day workshop was opened on Oct 22 by the Executive President of FABA, Professor Pallu Reddanna and the keynote was presented by Ms Maureen Elis, Director of International Programs at MCE Biosafety Consulting, Canada and Executive Director of the International Federation of Biosafety Associations (IFBA) where Vice Chancellor of the Jessore University of Science and Technology, Professor Dr Anwar Hossain was present as the Chief Guest. The topics of the various modules included on the first day of the workshop covered History and development of biosafety and biosecurity principles, Biosafety and Biosecurity practices in Human health laboratories and in Pharmaceutical industries, under the theme of Biosafety and Biosafety in Human Health. Prof. Dr. Md Rakibul Islam, Dept. of Biochemistry and Molecular Biology, University of Dhaka; Prof. Dr. Lim Yang Mooi, Institute of Postgraduate Studies and Research, Universiti Tunku Abdul Rahman, Malaysia; and Dr. Md Asadulghani conducted the training modules and shared their knowledge with the audience on that day of the program.

October 23rd witnessed the proceedings of the second theme: Biosafety and Biosecurity in Animal Health. On that day, the topics covered were Biosafety and Biosecurity in Animal Health laboratories and Biosafety and Biosecurity Animal production and Veterinary Medicine. The session was proceeded by Dr. Girish S Kirimanjeswara, Dept. of Veterinary and Biomedical Sciences, The Pennsylvania State University; and Prof. Dr. Md Shahidul Islam, Dept. of Biotechnology, Bangladesh Agricultural University. On October 24th, the lectures were delivered on Biological Safety Cabinet Selection, Installation and Certification and Biohazardous Waste Management, by Dr Asadulghani and Prof. Dr. Lim Yang Mooi, respectively. Mr. Sunil Aggarwal, Deputy General Manager, Ramky Enviro Engineers Ltd gave a special lecture on "Safe transportation and disposal of the hospital or pharmaceutical waste in accordance with all regulatory and legal requirements as well as sustainable development goals" after the training sessions of that day.

Biosafety and Biosecurity practices in clinical care was the theme on October 29th. Dr. Chandan Kumar Roy from Bangabandhu Sheikh Mujib Medical University conducted the session on the given topic which was followed by the special lecture on "Growing importance of infection control and biosafety in post-covid world, by Dr. Ranga Reddy Burri, President Infection Control Academy of India. The participants were then enlightened on the topic "Biosafety and biosecurity for hospital, clinics and laboratories: Tips to practitioners" with the second special lecture on that day by Prof. T V Rao, formerly professor of microbiology, TMC Kollam Kerala.

On October 30th, the theme was "Biosafety and Biosecurity on High Containment Laboratories." The first session of the day witnessed talks by Dr. Vikram Saini, Dept. of Biotechnology, AIIMS on the topic "Requirements for laboratory Diagnosis

Speakers

Chief Guest

Dr. Anwar Nasim
Secretary General, Pakistan Academy of Sciences

Prof. Pallu Reddanna
School of Life Sciences, University of Hyderabad Executive President, FABA

Ms. Maureen Elis
Executive Director, International Federation of Biosafety Associations

Prof. Dr. Md Anwar Hossain
Vice-Chancellor, Jessore University of Science and Technology, Bangladesh

Dr. Md. Asadulghani
President, FABA & BBBS Initiator President, FABA Bangladesh Chapter

Prof. Dr. Md. Rakibul Islam
Department of Biochemistry and Molecular Biology, University of Dhaka, Bangladesh

Prof. Dr. Lim Yang Mooi
Deputy Director, Institute of Postgraduate Studies and Research, Universiti Tunku Abdul Rahman, Malaysia

Dr. Girish S Kirimanjeswara
Department of Veterinary and Biomedical Sciences, The Pennsylvania State University , USA

Prof. Dr. Md. Shahidul Islam
Department of Biotechnology, Bangladesh Agricultural University, Bangladesh

Mr. Sunil Aggarwal
Deputy General manager, Ramky Enviro Engineers Ltd

Dr. Chandan Kumar Roy
Bangabandhu Sheikh Mujib Medical University, Bangladesh

Dr. Ranga Reddy Burri
President, Infection Control Academy of India & Honorary Professor, School of Medical Sciences, University of Hyderabad

Prof. Dr T V Rao
Formerly Professor of Microbiology, TMC Kerala

Dr. Vikram Saini
Department of Biotechnology, AIIMS

Dr. Pragya Yadav
ICMR-National Institute of Virology Department of Health Research, MoHFW

Dr. Ravisekhar Gadepalli
Department of Microbiology, AIIMS, Jodhpur

Dr. Harinarayana Rao
Scientific Advisor, BSL-3 Laboratory, University of Hyderabad

Prof. Dr. Shailendra K Saxena
Professor and Head, Centre for Advance Research, King George's Medical University, Lucknow

Dr. Rajeev Jha
Strategic Research and Technical Timeline Coordinator, PT. Central Proteina Prima, Indonesia

Dr. Ranjan Chakrabarti
Former Vice-President - Biologics, United States Pharmacopeia India Pvt. Ltd.

Dr. Natasha K Griffith
Associate Director of Operations, High Containment Core, Georgia State University Atlanta, USA

Dr. Md. Giasuddin
Former Director, National Reference Laboratory of Avian Influenza & Consultant and Head of Animal Health Division, BLRI

Prof. Dr. Md Aftab Ali Sheikh
Chairman, BCSIR & Member, Board of Advisors, FABA Bangladesh Chapter

Dr. Md Salimullah
Director General, National Institute of Biotechnology, Bangladesh & Chairman, FABA Bangladesh Chapter

Dr. Suresh Pothani
Executive Secretary, FABA

and Research with RG3 agents. The subsequent sessions were on implementing biosafety and biosecurity in microbiological and biomedical research and developing high containment facilities and biosafety and biosecurity program by Prof. Dr. Shailendra K Saxena, Professor and Head, Center for advanced research, King Georges Medical University, Lucknow and Dr. Harinarayana Rao, BSL-3 laboratory, University of Hyderabad, respectively. On this day also there was a special lecture on history and development of high containment laboratories in India by Dr. Ravisekhar Gadepalli, Dept. of Microbiology, AIIMS Jodhpur. The day ended with learning on the cost effective and sustainable solutions for high containment facility operations and maintenance by Ms. Maureen Elis, Executive Director, international Federation of Biosafety Associations.

The theme on October 31st was Biosafety and Biosecurity in Biotechnology Applications. Prof. Dr. Md. Rakibul Islam introduced viral vectors in biotechnology from the perspective of Biosafety and Biosecurity to the audience. Biosafety and biosecurity aspects in animal health industry was put forth by Dr. Rajeev Jha, Strategic research and technical timeline coordinator, PT, Central Proteina Prima, Indonesia. Dr. Ranjan Chakrabarti, Former VP- Biologics, United States Pharmacopeia India Pvt. Ltd. ended the day's discussion with cleanroom consideration and microbial testing for developing quality medicinal product.

On November 6th, the session started with understanding standard operating procedures (SOP) and Hands on training on writing SOP with Dr. Natasha K Griffith, Associate Director of Operations, High containment zone at Georgia State University. The panel discussion on the topic "Issues and Challenges in Handling Emerging and Re-emerging Infectious Agents Like SARS Cov2" was the highlight of the closing ceremony. The panel was moderated by Prof. Dr. Lim Yang Mooi. Among the panelists were Dr. Pragya Yadav from ICMR-National Institute of Virology Dept, of Health Research, MoHFW; Dr. Harinarayana Rao, Dr. Ranjan Chakrabarti, Dr. Ravisekhar Gadeapalli, Dr. Md Giasuddin, Former Director, National Reference Laboratory of Avian Influenza and Consultant Bangladesh Livestock Research Institute, One Health Poultry Hub; Dr. Natasha K Griffith and Dr. Md Asadulghani.

The unique feature of the workshop includes pre- and post- assessment of the knowledge of the participants every day. Overall, there was an improvement of 30-80% in the knowledge of the participants at the end of the workshop.

The workshop ended with an address by the Chief Guest Dr. Anwar Nasim, former President of Pakistan Academy of Sciences and Founder President of FABA, who congratulated the entire cohort for the success of the workshop. The closing remarks were made by Prof. Dr. Md Aftab Ali Sheikh, Chairman, Bangladesh Council of Scientific and Industrial Research; Dr. Md Salimullah, Director-General, National Institute of Biotechnology/ Chairman, FABA Bangladesh Chapter; Dr. Suresh Pothani, Executive secretary, FABA and Prof. Pallu Reddanna, Executive President. The workshop concluded with a vote of thanks from Dr. Asadulghani.

The Federation of Asian Biotech Associations (FABA) (biofaba.org.in)

Featured Biotech News

Whistleblower raises concern on data integrity issues in Pfizer's COVID vaccine trial: a vaccine fraud uncovered?

NOVEMBER 2, 2021

Revelations of poor practices at a contract research company helping to carry out Pfizer's pivotal covid-19 vaccine trial raise questions about data integrity and regulatory oversight. Paul D Thacker reports in BMJ.

For researchers who were testing Pfizer's vaccine at several sites in Texas during that autumn, speed may have come at the cost of data integrity and patient safety. A regional director who was employed at the research organisation Ventavia Research Group has told *The BMJ* that the company falsified data, unblinded patients, employed inadequately trained

vaccinators, and was slow to follow up on adverse events reported in Pfizer's pivotal phase III trial. Staff who conducted quality control checks were overwhelmed by the volume of problems they were finding. After repeatedly notifying Ventavia of these problems, the regional director, Brook Jackson, emailed a complaint to the US Food and Drug Administration (FDA). Ventavia fired her later the same day. Jackson has provided *The BMJ* with dozens of internal company documents, photos, audio recordings, and emails.

Jackson has told The BMJ that, during the two weeks she was employed at Ventavia in September 2020, she repeatedly informed her superiors of poor laboratory management, patient safety concerns, and data integrity issues.

Jackson was a trained clinical trial auditor who previously held a director of operations position and came to Ventavia with more than 15 years' experience in clinical research coordination and management. Exasperated that Ventavia was not dealing with the problems, Jackson documented several matters late one night, taking photos on her mobile phone. One photo, provided to The BMJ, showed needles discarded in a plastic biohazard bag instead of a sharps container box. Another showed vaccine packaging materials with trial participants' identification numbers written on them left out in the open, potentially unblinding participants. Ventavia executives later questioned Jackson for taking the photos.

Early and inadvertent unblinding may have occurred on a far wider scale. According to the trial's design, unblinded staff were responsible for preparing and administering the study drug (Pfizer's vaccine or a placebo). This was to be done to preserve the blinding of trial participants and all other site staff, including the principal investigator. However, at Ventavia, Jackson told The BMJ that drug assignment confirmation printouts were being left in participants' charts, accessible to blinded personnel. As a corrective action taken in September, two months into trial recruitment and with around 1000 participants already enrolled, quality assurance checklists were updated with instructions for staff to remove drug assignments from charts.

It seems that pharma profiteering is the main motive of making this pandemic when Fauci flipped his medical statements many a times, forced people to believe that foto avidya exists but not for powerful people who roamed without masks when thousands of people died not because of virus but due to unemployment created by lockdown. Now the layers of hoaxes are uncovering bringing into centre the most trusted organizations like FDA, WHO etc. Which not only allow these companies to sell products without any proper assessment but also mandating inoculation.

In her 25 September email to the FDA Jackson wrote that Ventavia had enrolled more than 1000 participants at three sites. The full trial (registered under NCT04368728) enrolled around 44 000 participants across 153 sites that included numerous commercial companies and academic centres.

She then listed a dozen concerns she had witnessed, including:

-Participants placed in a hallway after injection and not being monitored by clinical staff
-Lack of timely follow-up of patients who experienced adverse events
-Protocol deviations not being reported
-Vaccines not being stored at proper temperatures
-Mislabelled laboratory specimens, and
-Targeting of Ventavia staff for reporting these types of problems.

Lately but Covaxin gets WHO approval after huge criticism of regulatory body

NOVEMBER 3, 2021

The World Health Organization on Wednesday granted Covaxin an emergency use listing, or EUL, which means the 'made-in-India' vaccine will finally be recognised by other countries and Indians who received the shot need not self-quarantine or face restrictions when travelling abroad.

Covaxin is the only vaccine which has shown best results against COVID-19 particularly delta variant in pioneer studies but it had to wait for a long time because of political turmoil that move around western countries. US, European and even Chinese vaccines were given approval as soon they submitted data but Bharat Biotech was enquired several times on small points even when it submitted data in June 2021. Now more than 100 crore doses have been given in India in total with no adverse event reporting.

It is also noted that COVAXIN is the only vaccine which did not show any severe side effects unlike Pfizer and Astrazeneca which were widely criticized but given EUA. Now, when people have started questioning WHO approval process it is bound to give approval to Covaxin.

Today, Covaxin has been cleared for use in all age groups (18+) over two doses spaced four weeks apart. However, no recommendation has been made for use on children, and available data for use on pregnant women is insufficient to assess safety or efficacy, WHO said.

"The Technical Advisory Group (an independent panel that provides the WHO with vaccine recommendations) has determined Covaxin meets standards for protection against COVID-19… the benefit of the vaccine far outweighs risks (and) the vaccine can be used," the global health body said.

"Covaxin was also reviewed by WHO's Strategic Advisory Group of Experts on Immunization (SAGE), and recommended use of this vaccine (is) in two doses, with an interval of four weeks, in all age groups 18+," the WHO tweeted.

The WHO confirmed Covaxin had been found to be "78 per cent effective against COVID-19 of any severity, 14 or more days after the second dose, and is extremely suitable for low- and middle-income countries due to easy storage requirements".

The EUL comes after a lengthy and rigorous review period – Bharat Biotech provided the first batch of data in July – that involves assurances about the vaccine's safety, efficacy and stability, as well as checks of production facilities.

The delay left millions in limbo; in particular it was a huge problem for Indian students studying

EU drug regulator to add brain blood clot warning to AstraZeneca COVID vaccine

NOVEMBER 13, 2021

The EU drug regulator advised on Thursday listing blood clots in the brain as a rare side effect of AstraZeneca's COVID-19 after observing cases that were not linked to a low platelet count. "Events of cerebrovascular venous and sinus thrombosis (CVST) without thrombocytopenia have been observed very rarely following vaccination with Vaxzevria," an update read.

The European Medicines Agency said 458 cases of vaccinated people developing a stroke followed by a brain bleed were observed up to September 30. The majority of cases occurred within the first four weeks of vaccination. Some cases had a fatal outcome.

The agency said that CVST should be added to the product information as a side effect of "unknown frequency." Blood clots forming in the brain while the blood platelet count is low was listed as a "very rare" side effect of the vaccine in April.

Lancet study proves the vaccine does not fully prevent COVID transmission

NOVEMBER 14, 2021

Fully vaccinated people can contract and pass on Delta variant of SARS-CoV-2, the virus that causes COVID-19 , in household settings, but at lower rates than unvaccinated people, according to a study published in *The Lancet Infectious Diseases* journal.

Researchers led by Imperial College London, UK, found that vaccinated people clear the infection more quickly, but the peak viral load among them is similar to that seen in unvaccinated individuals, which may explain why they can still readily pass on the virus at home.

The researchers noted that most COVID-19 transmission is known to occur in households yet there is limited data on the risk of transmission of the Delta variant from vaccinated people with asymptomatic or mild infections in the community.

Reference: https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(21)00648-4/fulltext

One lakh COVID Genome, contributions made by Autonomous Institutions of the DBT and Vaccine Testing and Research Facility at RGCB

NOVEMBER 12, 2021

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today informed that one lakh Genome and DNA sequencing has been done for COVID-19 so far by the Department of Bio-Technology (DBT) and 5 COVID-19 Biorepositories with 57,000 samples were made available to academia and industry for R&D and Product development.

The Minister was presiding over a high level meeting to review the current status of COVID-19 research, development of vaccines and other protocols as well as the contribution made in this direction by each of the Autonomous Institutions of the Department of Biotechnology located in different parts of the country.

Dr Jitendra Singh announced that "A Vaccine Testing and Research Facility will come up at the second campus of the Rajiv Gandhi Centre for Biotechnology (RGCB) and this center will also have a BSL 3 facility which is capable of handling airborne viruses like Covid-19. This facility will be the first of its kind in South India. The Minister also said that RGCB will be developed as a hub for research and testing of multiple vaccines such as cancer vaccine and those for infectious diseases, including Covid-19. "This will bring huge recognition for RGCB in the specific area of vaccine research and development." The Minister also lauded the RGCB's model of supporting both innovative research and Biotechnology incubation facilities.

Secretary, Department of Biotechnology, Dr Rajesh Gokhale informed that taking note of the unprecedented scenario of the COVID19 pandemic, DBT prepared a roadmap early on with a focus on diagnosis, treatment and most importantly, prevention. It has supported 100 projects in the thematic areas of vaccines, diagnostics and therapeutics, besides enabling 7 vaccine candidates by industry and 8 candidates by academia. DBT under Mission COVID Suraksha also supported 5 vaccine candidates, 19clinical trial sites, 6 facilities for immunogenicity assays and animal challenge models and facility augmentation for Covaxin production.

WHO calls distribution of COVID boosters a 'scandal' as poor nations struggle to get first shots

NOVEMBER 14, 2021

The disparity between the global distribution of Covid-19 boosters and first shots to people in developing nations is a "scandal," World Health Organization Director-General Tedros Adhanom Ghebreyesus said at a briefing Friday.

Inequitable vaccine distribution has hit Africa particularly hard, where just 6% of the continent's population is fully vaccinated against Covid, the WHO's Regional Office for Africa reported as of Oct. 28. WHO officials have for weeks criticized the distribution of boosters to healthy adults, calling on high-income countries to reallocate their surplus doses to immunize health-care personnel, the elderly and other high-risk adults across poorer nations.

"Every day, there are six times more boosters administered globally than primary doses in low-income countries," Tedros said. "This is a scandal that must stop now."

The WHO chief criticised the distribution of boosters to healthy adults saying that "it makes no sense to give boosters to healthy adults, or to vaccinate children, when health workers, older people and other high-risk groups around the world are still waiting for their first dose." However, he said that there is an exception — immunocompromised individuals.

Swaminathan added that the WHO would likely miss that goal unless COVAX, the WHO's initiative for providing Covid shots for at least 20 per cent of countries' populations, received approximately 500 million more doses to distribute.

US Appeals court upholds order freezing Biden vaccine rule for employers

NOVEMBER 13, 2021

A federal appeals court on Friday upheld its previous order temporarily blocking President Joe Biden's vaccine and testing mandate for large companies, rejecting a Justice Department request to lift the freeze.

A three-judge panel for the Louisiana-based Fifth Circuit said in a 24-page ruling that the Biden administration's order exposes companies to "severe financial risk if they refuse or fail to comply, and threatens to decimate their workforces."

"On the dubious assumption that the mandate does pass constitutional muster, which we need not decide today, it is nonetheless fatally flawed on its own terms," the court wrote, signaling the uphill legal battle facing the administration.

In its order, a three-judge panel rejected the Justice Department's arguments for lifting a previous order temporarily blocking the administration's rule. The judges said the court's earlier stay was reaffirmed pending a full judicial review.

The vaccine rule was announced by the Occupational Safety and Health Administration, or OSHA, earlier this month and scheduled to take effect Jan. 4. It requires businesses with 100 or more employees to ensure their workforces are fully vaccinated or require workers who aren't vaccinated to wear masks and show negative Covid-19 test results at least once a week. Employers can face fines for not complying.

A group of companies and individuals, including churches, restaurants and grocers, filed the suit shortly the rule was announced, seeking a permanent injunction. They were joined by Louisiana, Mississippi, South Carolina, Texas and Utah. The groups argued that OSHA usurped its authority by issuing the sweeping mandate, and that Covid-19 is not a workplace hazard. In addition, they argued the rule will make it harder to maintain enough workers in a tight labor market.

Biotech Research and Govt.

Deepa Mohanan's Hunger protest ends, Biological Professor and mentor Nandakumar removed as IIUCNN director of MGU, Kerala

NOVEMBER 8, 2021

Seven days after the hunger strike by Deepa P Mohanan, the Dalit scholar at Mahatma Gandhi University, Nandakumar Kalarickal, who served as the director of the International and Inter University Centre for Nanoscience and Nanotechnology (IIUCNN), has been removed from the centre. A notice issued by the MG University Vice Chancellor Sabu Thomas mentioned that the post will be taken over by the Vice Chancellor himself. However, Deepa has questioned why the University order does not mention Nandkumar's removal explicitly, and simply mentions that the VC will take over responsibilities.

Deepa P Mohanan is 36-year-old scholar from MGU, who is building wound-healing scaffolds through nanoparticles in an effort to advance nanomedicine has alleged that the university authorities have deliberately delayed the completion of her degree. In opposition to the discrimination, she has been sitting on a hunger strike since October 29 outside the International and Inter-University Centre for Nanoscience and Nanotechnology (IIUCNN). The scientist joined this university in 2011 to pursue an M. Phil degree. She has done her masters in Medical Microbiology.

Deepa has been on a strike outside the university asking that Nandakumar Kalarickal be removed from the institute. She had alleged that it is because of caste discrimination by Nandakumar that her PhD, which was supposed to be completed in 2015, got extended till now. From preventing her from accessing the lab to denying her a seat at the workplace and even going to the extent of blocking her stipend, Nandakumar has made life really hard for her, Deepa alleged. Apart from this, Nandukumar had been rude and abusive towards her, Deepa said, and she believes it is because she was the only Dalit scholar in her batch.

Deepa alleged that he caused disruption in her education since the first year of her joining. She also alleged that he stopped her from accessing labs, chemicals and polymers. Not just that, he al-

legedly denied her seating at the workplace and blocked her stipend as well. In one instance, as reported by The News Minute, he had deliberately locked her inside the lab.

The university's decision came after state Higher Education Minister R Bindu on November 6, Saturday promised Deepa that all measures to remove the professor from the centre will be taken. The Minister had said that if the university delays the procedure, the government will directly intervene to remove Nandakumar.

This is not the first time that Mohanan has gone public with her complaints against Kalarickal. She had filed a case of discrimination against him in 2015 too. At the time, an investigative committee confirmed Mohanan's allegations and asked the university to provide her with facilities regarding research work. Then in 2016, she filed a police complaint against the same person under the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act. Not just complaints, she has even tried to meet the Governor of Kerala with regards to the issue but was detained by the police and kept in custody for two days.

COVID-19 increase rate of suicides among Indian businessmen

NOVEMBER 8, 2021

As per recent report by the wire, In 2020, when COVID-19 halted trade and ravaged businesses across the country, as many as 11,716 businesspersons died by suicide. The latest 'Accidental Deaths and Suicides in India' report said that of these over 11,000 deaths, suicides among "tradesmen" increased by 50% – from 2,906 in 2019 to 4,356 in 2020 – the highest across categories of business community. As many as 4,226 "vendors" died by suicide last year, with the rest being accounted for in the category of "other businesses".

The Print also, however, pointed out that the number of death by suicides among businesspersons is far lower than that of the unemployed (15,652) and daily-wage earners (37,666).

As per the NCRB data, shared by *The Indian Express*:

10,677 farmers and 11,716 businessmen died by suicide in 2020

Among the tragic suicide of businessmen, 4,356 were that of "tradesmen" and 4,226 were of "vendors"

Suicides among the business community shot up by 29 percent between 2019 and 2020

Suicides among tradesmen shot up by 49.9 percent between 2019 and 2020

Karnataka recorded the maximum number (1,772) of deaths by suicides of businesspersons in 2020 – a 103% increase from 2019, when 875 businesspersons had taken their own lives in the state.

As many as 1,610 businesspersons died by suicide in Maharashtra, a 25% jump from the previous year, and 1,447 died in Tamil Nadu, a 36% jump from 2019. (Maharashtra has the highest number of MSMEs in the country with 28.38 lakh MSMEs registered, followed by Tamil Nadu with 15.4 lakh MSMEs.)

"The major share of India's businessperson community belongs to the micro small and medium enterprises (MSMEs) who are extremely vulnerable to shocks and COVID-19 has hurt them the most," professor Praveen Jha of JNU's Centre for Economic Studies and Planning told *The Print*. "These small businessmen are not assured of support during the crisis and the government of India helped them with too little, and too late — that too mostly monetary in nature (in the form of loans) and not fiscal support (stimulus cheques)," he further said.

An EY survey amongst 1,000 MSME entrepreneurs highlighted that more than 70% of the respondents were impacted during COVID-19 because of reduced orders, loss in business, availability of raw material, and liquidity issues, the *Economic Times* had reported.

In India, MSMEs account for about 99% of all enterprises, comprising 63 million MSMEs across various industries. These small firms contribute 29% of India's gross domestic product (GDP) and comprise almost half of its exports.

What happened in Federal court during early hearing of Biden administration's vaccination mandate

NOVEMBER 7, 2021

A federal court in Louisiana has blocked the Biden administration's mandate that millions of workers get vaccinated against Covid-19 or be tested weekly, ruling in a suit filed by several states, companies and conservative religious groups.

"Because the petitions give cause to believe there are grave statutory and constitutional issues with the Mandate, the Mandate is hereby STAYED pending further action by this court," a panel of judges for the New Orleans-based Fifth Circuit Court of Appeals ruled on Saturday.

The states of Texas, Louisiana, Mississippi, South Carolina and Utah are among the plaintiffs.

More than two dozen states have filed multiple legal challenges in federal court against the Biden administration's vaccinate-or-test mandate for private businesses, arguing that the Occupational Safety and Health Administration doesn't have the authority to issue the requirements.

The four lawsuits were filed by groups of 26 states in the 8th Circuit, 11th Circuit, 6th Circuit and 5th Circuit over the past few days. They seek to nullify an emergency rule released Thursday that requires companies with more than 100 employees to verify their workers are vaccinated or have unvaccinated workers wear masks

and submit to weekly Covid-19 testing.

The small business group Job Creators Network, as well as the Republican National Committee, have also said they plan to file lawsuits.

The suit led by Florida, Georgia and Alabama in the 11th Circuit also argues the requirements conflict with the First Amendment and the Religious Freedom Restoration Act.

"This unlawful mandate is yet another example of the Biden administration's complete disregard for the Constitutional rights afforded to our state and our citizens," said Georgia Attorney General Chris Carr in a statement. "The federal government has no authority to force healthcare decisions on Georgia's companies and its employees under the guise of workplace safety. We are fighting back against this unprecedented abuse of power to stop this mandate before it causes irreparable harm to our state and its economy."

The court gave the government until 5 p.m. Monday to respond to the plaintiffs' request for a permanent injunction.

In a statement, Justice Dept. spokesman Anthoney Colley said: "The OSHA emergency temporary standard is a critical tool to keep America's workplaces safe as we fight our way out of this pandemic. The Justice Department will vigorously defend this rule in court."

The White House referred comment to the Department of Labor. Sen. Ben Sasse called vaccine mandates like the Biden administration's "unconstitutional slop" in a statement following the decision, saying the "Fifth Circuit got this one right."

"The vaccines themselves are miracles of modern medicine and American ingenuity," the Nebraska Republican said. "But we're not going to beat this awful virus with extreme partisanship or unconstitutional executive orders. The OSHA mandate is unconstitutional, and at the end of the day will only increase vaccine hesitancy. The President should take a long look at this decision and reverse course before the courts embarrass him again."

Pfizer CEO Albert Bourla arrested?

NOVEMBER 6, 2021

Not in mainstream media but many websites are reporting that Pfizer CEO Albert Bourla was arrested by FBI today Friday Morning after fake vaccine trial controversy erupted.

Recently, an article published in The British Medical Journal by journalist Paul D Thacker raises questions about data integrity, regulatory oversight and patient safety, citing activities at a company that carried out trials for Pfizer's COVID-19 vaccines.

According to the article, "A regional director who was employed at the research organisation Ventavia Research Group has told The BMJ that the company falsified data, unblinded patients, employed inadequately trained vaccinators, and was slow to follow up on adverse events reported in Pfizer's pivotal phase III trial. Staff who conducted quality control checks were overwhelmed by the volume of problems they were finding. After repeatedly notifying Ventavia of these problems, the regional director, Brook Jackson, emailed a complaint to the US Food and Drug Administration (FDA). Ventavia fired her later the same day."

Ventavia laboratory is an American company specialising in clinical trials and commissioned by Pfizer to test the effectiveness of the vaccine to a small extent.

The article about arrest of CEO read like this:

Pfizer CEO Albert Bourla was arrested at his home in the affluent suburb of Scarsdale, New York Friday morning by the FBI and charged with multiple counts of fraud. Bourla is being held while he awaits a bail hearing. Federal agents are in the process of ex-

ecuting a search warrant at his home and at multiple other properties he owns across the country.

Albert Bourla faces fraud charges for his role in deceiving customers on the effectiveness of the COVID-19 "vaccine." Pfizer is accused of falsifying data, and paying out large bribes. According to an FBI agent that spoke to the Conservative Beaver, Pfizer lied about the effectiveness of the vaccines, and mislead customers about the serious side effects the vaccines can produce. Pfizer is accused of paying off governments and the mainstream media to stay silent.

Albert Bourla was already in hot water after it was revealed Pfizer, and a research partner, "falsified data, un-blinded patients, employed inadequately trained vaccinators, and was slow to follow up on adverse events." The whistleblower Brook Jackson was fired as a result of her attempts to stop the fraud that was being committed, BMJ reported.

In October, Project Veritas released a series of leaks dubbed "PfizerLeaks." In the video, another Pfizer whistleblower reveals how the company uses aborted fetal cells in the COVID-19 "vaccine." Pfizer tried to keep this fact hidden from the public.

If convicted, Albert Bourla could spend the rest of his life in prison. Bourla is considered innocent until proven guilty.

USA cancels contaminated Johnson & Johnson vaccine maker's multimillion dollar deal, says report

NOVEMBER 6, 2021

The US federal government has canceled a multimillion dollar deal with Emergent BioSolutions, a Maryland-based vaccine manufacturer with facilities in Baltimore that were found to have produced millions of contaminated Johnson & Johnson vaccine doses this spring, the Washington Post reported.

Emergent said it will forgo about $180 million due to the contract's termination, according to the Post.

Emergent BioSolutions played a role in the Trump administration's effort to speed up vaccine development and distribution. But after winning a contract from the previous administration, Emergent quickly ran into production problems.

In March, ingredients intended for use in producing the Oxford-AstraZeneca vaccine shots contaminated 15 million doses of the Johnson & Johnson vaccine. The problems with the vaccines caused a months-long delay in production.

After that, the Biden administration put Johnson & Johnson in direct control of vaccine production there.

In June, the Food and Drug Administration decided to discard at least another 60 million additional doses of the Johnson & Johnson vaccine produced at the plant.

The FDA repeatedly cited Emergent in the past for problems such as poorly trained employees, cracked vials and problems managing mold and other contamination around one of its facilities, according to records obtained by The Associated Press.

Molnupiravir beomes First pill to treat Covid gets approval in UK

NOVEMBER 5, 2021

Molnupiravir, developed by the US drug companies Merck, Sharp and Dohme (MSD) and Ridgeback Biotherapeutics, is the first antiviral medication for Covid which can be taken as a pill rather than injected or given intravenously.

The UK has agreed to purchase 480,000 courses with the first deliveries expected in November.

Initially it will be given to both vaccinated and unvaccinated patients through a national study, with extra data on its effectiveness collected before any decision to order more.

The drug needs to be given within five days of symptoms developing to be most effective.

It's not immediately clear how it will be distributed so quickly by the NHS. It's thought some care homes may be offered supplies while other elderly or vulnerable patients may be prescribed it by their GP after testing positive for Covid.

The UK regulator, the MHRA, said the tablet had been authorised for use in people who have mild to moderate Covid and at least one risk factor for developing severe illness such as obesity, old age, diabetes or heart disease.

The organisation's chief executive, June Raine, described it as "another therapeutic to add to our armoury against Covid-19".

Earlier clinical trials of molnupiravir on 775 patients who had recently caught Covid found:

7.3% of those given the drug were hospitalized that compares with 14.1% of patients who were given a placebo or dummy pill, there were no deaths in the molnupiravir group, but eight patients who were given a placebo in the trial later died of Covid. The results were published in a press release and have not yet been peer-reviewed.

Brazil senators back criminal charges against Bolsonaro over Covid handling

OCTOBER 29, 2021

Brazilian senators have voted to recommend charging President Jair Bolsonaro over his handling of the devastating Covid pandemic.

A Senate panel backed a report calling for charges against Mr Bolsonaro including crimes against humanity, after 600,000 deaths from coronavirus. The report has been handed to the chief prosecutor, a Bolsonaro appointee. The president has maintained he is "guilty of absolutely nothing" but the crisis has dented his popularity.

Brazil's death toll is second only to that of the United States.

There is no guarantee this vote will lead to actual criminal charges, as the report's recommendations must now be assessed by Prosecutor-General Augusto Aras, who is expected to protect the president.

The report alleges that Mr Bolsonaro's government pursued a policy of allowing coronavirus to rip through the country in the hope of achieving herd immunity.

It describes the president as "the main person responsible for the errors committed by the federal government during the pandemic".

The report's lead author, centrist Senator Renan Calheiros, called for the panel's recommendation to charge President Bolsonaro with crimes against humanity to be submitted to the International Criminal Court (ICC).

Brazil is a party to the Rome Statute, which created the ICC, so the international court could take up the case.

In addition to crimes against humanity, the Senate committee has recommended eight further charges be brought against Mr Bolsonaro in Brazilian courts, including incitement to crime, falsification of documents and the violation of social rights.

Mr Bolsonaro is also accused of misusing public funds and spreading fake news about the pandemic.

The 1,300-page report also recommended bringing charges against two corporations and 77 other people, including three of the president's adult sons.

We have faced more scrutiny from WHO', says Bharat Biotech's Krishna Ella, WHO refutes claim

OCTOBER 25, 2021

Homegrown Covid-19 vaccine, Covaxin has been under scrutiny since day 1 with many raising questions on transparency in data of clinical trials. Dr Krishna Ella, founder of Bharat Biotech that makes Covaxin believes the criticism is unfair. "Some people think Indian companies are soft targets and aything done in other parts of the world is gold standard", he says.

When asked by *ET Now* whether he thought the WHO was putting Covaxin under more scrutiny than others, Dr Ella said, "Perhaps, Yes. Earlier they had a one stage committee for clinical trials, we had two stage committee. If they ask more questions, it is good for us".

Ella said it was not about the process but the WHO might have got influenced by a lot of what was said by negativists in the country about the vaccine. He said the criticism that it was a "Modi vaccine" also got the process delayed.

Covaxin was assessed on exactly the same criteria as other vaccines, the World Health Organisation told ET, refuting the claims of Bharat Biotech's chief Krishna Ella that Covaxin faced an intensive scrutiny by the WHO. The WHO said that the Emergency Use Listing (EUL) is "a neutral, technically rigorous and non-political process, with independent regulatory experts contributing to

evaluations and advising WHO".

According to the UN health agency, Covaxin was assessed according to the exact same criteria as other vaccines, which includes review of data on quality, safety, efficacy, a risk management plan and programmatic suitability.

NIH admits US funded gain-of-function in Wuhan, now what? is it enough to put Fauci behind bars

OCTOBER 22, 2021

The National Institutes of Health has stunningly admitted to funding gain-of-function research on bat coronaviruses at China's Wuhan lab — despite Dr. Anthony Fauci repeatedly insisting to Congress that no such thing happened. The letter revealed that Dr. Anthony Fauci was wrong — and Senator Rand Paul was right.

Last month, NIH Director Francis Collins a close aid of Fauci resigned from the post amid growing controversies about funding of research and COVID pandemic.

In a letter to Rep. James Comer (R-Ky.) on Wednesday, a top NIH official blamed EcoHealth Alliance — the New York City-based nonprofit that has funneled US funds to the Wuhan lab — for not being transparent about the work it was doing. NIH's principal deputy director, Lawrence A. Tabak, wrote in the letter that EcoHealth's "limited experiment" tested whether "spike proteins from naturally occurring bat coronaviruses circulating in China were capable of binding to the human ACE2 receptor in a mouse model." The lab mice infected with the modified virus "became sicker" than those that were given the unmodified virus, according to Tabak. "As sometimes occurs in science, this was an unexpected result of the research, as opposed to something that the researchers set out to do," Tabak said.

The admission from the NIH official directly contradicts Fauci's testimony to Congress in May and July, when he denied the US had funded gain-of-function projects in Wuhan. Fauci has repeatedly clashed with Republican senators, including Rand Paul of Kentucky, who have accused him of lying about the gain-of-function research.

Tabak, who did not use the term gain-of-function in his letter but alluded to it, said EcoHealth — which is run by British scientist Peter Daszak — failed to comply with the terms of the grant, which required it to "report immediately a one log increase in growth." "EcoHealth failed to report this finding right away, as was required by the terms of the grant. EcoHealth is being notified that they have five days from today to submit to NIH any and all unpublished data from the experiments and work conducted under this award," Tabak said. Tabak said if EcoHealth had alerted NIH to the growth, it would have prompted a review to determine if the research plan should be re-evaluated.

Rand Paul blasts Anthony Fauci after NIH admits gain-of-function funding. Earlier this year, Paul accused Fauci of "obfuscating the truth" and at one point asked if he wished to rescind prior remarks given that it is a felony to lie to

Congress.

Paul told host Will Cain the story should not be about him, but about America's health and national security: "Five million people died from a virus that came out of a lab — wouldn't we want to know, wouldn't we want to prevent this from happening again? This virus is very deadly, what if we had a virus that had a 15% mortality rate?"

"Scientists working in this field might say – as indeed I have said – that the benefits of such experiments and the resulting knowledge outweigh the risks," he continued, according to the New York Post.

Paul said Fauci has been intentionally "never fully explain[ing] why the experiments are not gain-of-function. His declination is this: it's inadvertent, we didn't know they were going to gain function. That is what a gain of function experiment is. You don't know when you combine two viruses that they will be more deadly but it might be if you have half a brain you know if you combine two viruses it might be more deadly."

Paul said he and other lawmakers have already referred Fauci to the Justice Department for investigation – but noted that he is not expecting much given the inordinate resources being allocated by Attorney General Merrick B. Garland.

"I don't know if they have time to go after Dr. Fauci for lying. He should be held accountable because what we have developed as a system of health care in our country where doctors are afraid to speak out because they will cut out their research funding, doctors who have talked about innovative treatment to try to help people survive COVID are being lectured and told we will take your license. This is the kind of thing, this top-down centralization of medical authority, it's not good for our country and it's not good for innovation."

Paul said he fears that an apolitical doctor will stumble across a life-saving treatment to another disease or virus – but instead discard or not publicize his work for fear of retribution from the medical establishment and people like Fauci, whose office allocates millions of dollars in grant monies.

Fauci must be arrested and prosecuted for perjury. Any reasonable adult knows whether they are lying under oath, and Fauci definitely intentionally lied under oath!, an anonymous wrote on the Fox News post.

Dr. Fauci is still the top-paid federal employee earning $434,312 in 2020. Fauci out-earned the U.S. president ($400,000); four-star generals in the military ($282,000); and roughly 4.3 million other federal employees.

As Jim Jordan and Rand Paul have said many media houses have also misrepresented the information about COVID, it is now time to scrutinize media houses if they are right or wrong and it is time to condemn the wrong ones for the sake of health of people. In this pandemic even non science people like news reporters have become scientific gods without any domain knowledge giving their views about testing, tracing, wave forecasting etc.

If no measure will be taken then this will repeat again and again, where leaders and wealthy people will move without masks independently but common people will be forced to live under lockdown with no job and money and will be forced to die without oxygen, beds and other life saving amenities.

100 crore doses of COVID vaccine shows the strength of Biotech Industry of India

OCTOBER 21, 2021

Today on October 21, 2021 just in 9 months since vaccination drive was started, India crossed the 1 billion mark in covid-19 vaccinations, with Uttar Pradesh, followed by Maharashtra, West Bengal, Gujarat and Madhya Pradesh being the top five states administering the highest number of doses. According to the Union health ministry, about 75% people above 18 years have been vaccinated with the first dose and over 31% pop-

ulation has been completely vaccinated with both doses.

The countrywide vaccination drive was rolled out on 16 January 2021 with vaccination of healthcare workers (HCWs) and vaccination of the front line workers (FLWs) started from 2 February 2021.The second phase of covid-19 vaccination commenced from 1 March 2021 for those who are over 60 years of age and for people aged 45 and above with specified co-morbid conditions following which the third phase was rolled out from 1 April 2021 covering all persons above 45 years of age irrespective of co-morbidities. In a significant development, the government later also announced to provide free covid-19 vaccines to all adults from 21 June.

The number is twice the number of vaccines administered in the United States, five times that of Japan, nine times that of Germany and 10 times the number of vaccine doses administered in France, the government said in a presentation hailing the 'vaccine century'.

The achievements are possible because of made in India vaccines i.e. Covaxin – within 11 months of the discovery of the first case in the country and fastest ever approvals granted for the vaccines. Bharat Biotech had three manufacturing facilities in Hyderabad and one in Bengaluru. The company expanded its manufacturing capacities in Hyderabad by two-fold and in Bengaluru by five-fold.

Cumulatively, Indian vaccine manufacturers, including SII, Bharat Biotech, Panacea Biotech, Sanofi's Shanta Biotech, Biological E, Hester Biosciences and Zydus Cadila, had an installed capacity to manufacture 8.2 billion doses of different vaccines per year in April 2021, which has further increased many folds since then.

The accomplishment has special interest because western powers were raising questions whether India will be able to manufacture enough doses, and quality issues. On the top India's vaccine manufacturing was hit by raw material shortages earlier in the year 2021 when the Biden administration told US companies to prioritise domestic vaccine makers.

Along with national vaccination program, India was supplying vaccines to its immediate neighbours and to the global Covax scheme for poorer countries.

To mark the completion of administering of 100 crore COVID-19 vaccine doses, the largest khadi tricolour in the country, weighing around 1,400 kg, will be displayed at the Red Fort on Thursday, official sources said and also a series of events have been lined up. Mandaviya will launch a song by singer Kailash Kher and an audio-visual film at the Red Fort.

New biotech centre set up in Arunachal Pradesh, India

NOVEMBER 11, 2021

A new biotechnology centre has been set up in Kimin, a remote area of Arunachal Pradesh to

help improve the socio-economic status of the tribal people in the State. It will aim at conservation and sustainable utilization of the local bio-resources using biotechnological tools. It will be supported by the Department of Biotechnology, Ministry of Science and Technology, Government of India.

Inaugurating the facility – Centre for Bio-resources and Sustainable Development, Union Minister of State (Independent Charge) Science & Technology, Dr Jitendra Singh, noted that the Prime Minister, Mr. Narendra Modi has been providing special priority to the development of the North-Eastern region of the country and also to the upliftment of tribals.

The new Centre will have academic linkages with ICAR and CSIR Institutions for efficient implementation of these programmes and help create employment opportunities. The facilities for the implementation of these programmes will be established in four districts covering over 50 villages and benefit over 10,000 farmers in the next two years.

The Minister said the Centre will focus on three major programs: establishment of a state-of-the-art orchidarium at Kimin with satellite units in selected districts of Arunachal Pradesh for conservation and multiplication of priority orchid species, setting up of banana fibre extraction and processing units in selected districts of Arunachal Pradesh, and creation of an aroma unit for the promotion of cultivation of aromatic crops and entrepreneurship development.

The Centre has been set up by the State Council for Science and Technology, Department of Science & Technology, Government of Arunachal Pradesh. It was sanctioned on March 27, 2018, at a cost of Rs 54.23 Crores initially for a period of 3 years. The tenure of the project has now been extended till 26th September 2023.

India, World Bank ink agreement to strengthen health systems in Meghalaya

NOVEMBER 1, 2021

The Government of Meghalaya and the World Bank recently signed a $40 million health project for the state of Meghalaya. The project will improve the quality of health services and strengthen the state's capacity to handle future health emergencies, including the COVID-19 pandemic.

The Meghalaya Health Systems Strengthening Project will enhance the management and governance capabilities of the state and its health facilities; expand the design and coverage of the state's health insurance program; improve the quality of health services through certification and better human resource systems, and enable efficient access to medicines and diagnostics.

All 11 districts of the state will benefit from the project. It will also benefit health sector staff at the primary and secondary levels by strengthening their planning and management capabilities and building their clinical skills. The project will enable women to better utilise healthcare services at the community level.

The agreement was signed by Rajat Kumar Mishra, Additional Secretary, Department of Economic Affairs, Ministry of Finance on behalf of the Government of India; Ramkumar S, Joint Secretary, Department of Health and Family Welfare on behalf of the Government of Meghalaya; and Junaid Ahmad, Country Director, India on behalf of the World Bank.

Gates Foundation Pours $90 Million into Promising New Pneumococcal Vaccine

NOVEMBER 11, 2021

The Bill & Melinda Gates Foundation pours investment dollars into disease-fighting efforts, especially for those illnesses that inequitably impact developing nations. This week, the massive non-profit is taking up the cause for pneumococcal infection with a $90 million investment in Seattle area's Inventprise.

Inventprise is developing a pneumococcal conjugate vaccine against the highest number of strains of Streptococcus pneumoniae. This bacterium primarily causes meningitis and pneumonia. Pneumonia is the leading cause of death in children under the age of five globally. About 1 in 20 persons affected die from the illness.

Inventprise's linker technology has some big hopes for vaccines in multiple indications. First tested against Haemophilus influenza Type A, the company also has programs in the works for rotavirus, shigella, yellow fever, meningitis and other diseases. A pediatric COVD-19 vaccine is also in the early stages of development to offer protection against several of the main strains.

Chicken feathers turn poultry feed by Indian Startup

NOVEMBER 1, 2021

Chicken feather, a slowly-degrading waste that pervades the vicinity of a poultry farm for years, causes enormous pollution with no easy means of disposal. However, a project pursued by the Sri Padmavati Mahila Viswa Vidyalayam offers a solution with twin applications that not only gets rid of the menace, but also makes productive use of it by converting it into chicken feed and soil nutrients.

"Every keratinous waste can be treated to make fertilisers. In fact, from chicken feathers, we've been able to isolate a pure protein which can be consumed as supplement by human beings," said Professor A. B. Pandit, Vice-Chancellor, Institute of Chemical Technology Mumbai.

Professor Pandit, along with his students, has developed a technology to covert the keratin waste to food for pets and fertilisers for plants with the support from the 'Waste Management Technology' programme of the Department of Science and Technology, Government of India.

This novel technology is patented, easily scalable, environment-friendly, energy-efficient, and will make amino acid-rich liquid fertilisers more economical as compared to currently marketed products.

The time required for the process depends on the type of product needed.

"If the product required is either animal feed or fertilisers, it takes about six to eight hours. If you wish to isolate the specific protein out of it, then there are additional two-three steps involved. If you want to separate the amino acids from the protein, then there are other steps required to be followed… There is value addition in each of those steps," explained Professor Pandit.

Biotech Research News

Alzheimer's Research Shifts from Amyloid and Tau to Neuroinflammation, Other Causes

November 09, 2021

Research into Alzheimer's disease is shifting from amyloid plaque and tau protein to neuroinflammation, white matter changes and insulin resistance. The reasons include failures in amyloid and tau therapeutics and new findings that are helping to uncover the breadth of pathology in the onset and progression of this neurodegenerative condition.

For example, the University of Pittsburgh School of Medicine showed in August 2021 that inflammation in the brain drives the progression of Alzheimer's disease from its onset. The data is finding its way into an increasing number of company-sponsored research programs, "driven by some well-heeled companies and venture capitalists," Dr. R.J. Tesi, M.D., CEO, president, and acting CMO for INmune Bio, told.

Alzheimer's disease has long been associated with the brain's gray matter. Now, multiple research reports indicate that white matter abnormalities – and therefore, axonal integrity and neuronal signaling – also are important components of the disease. Research into the correlation between insulin resistance and Alzheimer's disease is coming to the fore, too. Tesi suggested that inhibitors like GLP-1, which Novo Nordisk is investigating to treat obesity, may be useful therapies.

Additionally, "a number of companies are interested in the role of lysosomal and mitochondrial dysfunctions," as well as lipid abnormalities in the onset and progression of Alzheimer's disease.

Epilepsy research reveals unknown trigger for seizures

October 20, 2021

Researchers at the University of Virginia School of Medicine have uncovered how problems in cortical microcircuits in the brain can trigger epileptic seizures. The researchers say that targeting the problem could lead to new treatments for a devastating form of the disease.

UVA epilepsy researchers Eric R. Wengert, PhD, and Manoj K. Patel, PhD, and their team determined that a particular type of brain cell called somatostatin interneurons can cause seizures when they go haywire. These interneurons are typically thought to function as a built-in brake system to safeguard against excessive activity in the brain and prevent seizures, but Wengert and colleagues found that, when dysfunctional, somatostatin interneurons actually drive excessive brain activity and seizures.

These malfunctions are triggered by mutations in a particular gene known to cause a rare epilepsy syndrome in human patients. These mutations are not inherited from the child's parents but instead occur shortly after conception.

The researchers examined the role of somatostatin interneurons as part of their investigation of a rare neurological condition called *SCN8A* epilepticencephalopathy. *SCN8A* refers to a mutation in the *SCN8A* gene that causes the condition. Children with *SCN8A* epilepsy often suffer from recurrent seizures that do not respond to medication as well as severe developmental delays and movement disorders. They are also at significant risk of Sudden Unexpected Death in Epilepsy, the No. 1 cause of epilepsy-related death.

To better understand what occurs in *SCN8A* epilepticencephalopathy, the researchers developed mouse models of two*SCN8A* mu-

tations discovered in patients. These models allowed them to determine which neurons are responsible for driving the neurological dysfunction. The researchers found that both *SCN8A* mutations caused harmful changes to sodium channels in a way that made somatostatin interneurons fizzle out and stop functioning when they normally would be highly active.

Based on their findings, the scientists believe that it may be possible to treat *SCN8A* epilepticencephalopathy by developing ways to fix the agitated interneurons. The results, they say, also help us better understand epilepsy more broadly.

Journal Reference: Somatostatin-positive Interneurons Contribute to Seizures in SCN8A Epileptic Encephalopathy**.** *The Journal of Neuroscience*, 2021; JN-RM-0718-21 DOI: 10.1523/JNEUROSCI.0718-21.2021

How two people controlled HIV after stopping treatment

October 28, 2021

Research led by scientists at the National Institutes of Health has identified two distinct ways that people with HIV can control the virus for an extended period after stopping antiretroviral therapy (ART) under medical supervision. This information could inform efforts to develop new tools to help people with HIV put the virus into remission without taking lifelong medication, which can have long-term side-effects.

The study involved two adults with HIV who began ART soon after acquiring the virus and continued with treatment for more than six years, successfully suppressing HIV. The individuals then joined an HIV clinical trial and stopped taking ART under medical supervision. The study team followed one of these people for four years and the other for more than five years, with study visits roughly every two to three weeks.

In the first participant but not the second, the scientists found high levels of HIV-specific immune cells called CD8+ T cells that can kill virus-infected cells, indicating that different mechanisms of control were at work in each person.

The researchers also found that the second participant, who had a weaker CD8+ T cell response against HIV, had a very strong neutralizing antibody response throughout the follow-up period until the sudden viral rebound. According to the scientists, this suggests that neutralizing antibodies may have played a significant role in facilitating near-complete HIV suppression in this individual until he newly acquired a different strain of the virus.

Journal Reference: Distinct mechanisms of long-term virologic control in two HIV-infected individuals after treatment interruption of anti-retroviral therapy. *Nature Medicine*, 2021; DOI: 10.1038/s41591-021-01503-6

Interferon does not improve outcomes for hospitalized adults with COVID-19, clinical trial finds

October 18, 2021

A clinical trial has found that treatment with the immunomodulator interferon beta-1a plus the antiviral remdesivir was not superior to treatment with remdesivir alone in hospitalized adults with COVID-19 pneumonia. In addition, in a subgroup of patients who required high-flow oxygen, investigators found that interferon beta-1a was associated with more adverse events and worse outcomes. These findings were published today in the journal *The Lancet Respiratory Medicine*.

Laboratory studies have shown that the normal type 1 interferon response is suppressed after infection with SARS-CoV-2, the virus that causes COVID-19. In addition, previous studies of hospitalized patients with COVID-19 demonstrated reduced production of interferon in response to SARS-CoV-2 infection in many patients, and this was associated with more severe disease. Other laboratory studies and clinical data supported the hypothesis that treatment with interferon beta-1a might improve health outcomes in people with COVID-19.

Ultimately, however, the ACTT-3 investigators found that interferon beta-1a plus remdesivir

was not associated with a clinical benefit compared to remdesivir alone in hospitalized adults with COVID-19. The primary outcome, time to recovery, was the same -- a median of 5 days -- for participants receiving interferon beta-1a plus remdesivir as for those receiving remdesivir alone. The likelihood of clinical improvement at day 15 also was similar for participants in the two treatment groups.

Journal Reference: Efficacy of interferon beta-1a plus remdesivir compared with remdesivir alone in hospitalized adults with COVID-19: a double-bind, randomised, placebo-controlled, phase 3 trial**.** *The Lancet Respiratory Medicine*, Oct. 18, 2021; DOI: 10.1016/S2213-2600(21)00384-2

Meningitis: Researchers find possible treatment strategy without antibiotics

October 18, 2021

Now, in a new study performed in rats, researchers from the University of Copenhagen and Lund University were able to utilize the body's own immune cells to kill the bacterial meningitis infection.

The researchers show that immune cells entering the brain's membrane, create a net that traps bacteria but also blocks the movement of cerebrospinal fluid. The brain is constantly cleaned by the cerebrospinal fluid that enters the tissue along blood vessels and is responsible for clearing out waste products made by the active brain cells.

The researchers theorized that if the nets were dissolved, leaving just the immune cells without their nets in the meninges, it would allow the cerebrospinal fluid to pass the brain freely.

The net-like structures consist mainly of DNA, so the research team applied drugs for cutting up DNA, so-called DNase. They gave DNase to the rats infected with pneumococcus bacteria, which causes bacterial meningitis.

"We administered DNase to rats infected with the bacteria, and we were able to show that the nets dissolved. The treatment reduced brain swelling and helped in removing metabolic waste production from the infected brain. In contrast, antibiotic treatment did not have an effect on brain swelling or waste clearance," says Maiken Nedergaard.

Based on their results, the research team now hopes to set up an international clinical study to investigate DNase in the treatment of patients with bacterial meningitis. Antibiotic resistant is increasing at an alarming rate and the drug the researchers use here is a promising alternative, and has already been approved for human use in other neurological diseases.

Journal Reference: DNase Treatment Prevents Cerebrospinal Fluid Block in Early Experimental Pneumococcal Meningitis**.** *Annals of Neurology*, 2021; 90 (4): 653 DOI: 10.1002/ana.26186

New type of nerve cell discovered in the retina

November 1, 2021

Scientists at the John A. Moran Eye Center at the University of Utah have discovered a new type of nerve cell, or neuron, in the retina.

The discovery marks a notable development for the field as scientists work toward a better understanding of the central nervous system by identifying all classes of neurons and their connections.

"Based on its morphology, physiology, and genetic properties, this cell doesn't fit into the five classes of retinal neurons first identified more than 100 years ago," said Tian. "We propose they might belong to a new retinal neuron class by themselves."

The research team named their discovery the Campana cell after its shape, which resembles a hand bell. Campana cells relay visual signals from both types of light-sensing rod and cone photoreceptors in the retina, but their precise purpose is the subject of ongoing research. Experiments showed Campana cells remain activated for an unusually long time -- as long as 30 seconds -- in response to a 10 millisecond light flash stimulation.

Journal Reference: An uncommon neuronal class conveys visual

signals from rods and cones to retinal ganglion cells. *Proceedings of the National Academy of Sciences*, 2021; 118 (44): e2104884118 DOI: 10.1073/pnas.2104884118

Researchers develop CRISPR-based rapid diagnostic tool for SARS-CoV-2

November 5, 2021

Scientists have created a new technology that rapidly detects the SARS-CoV-2 virus. The new SENSR was developed using CRISPR gene-editing technology as a rapid diagnostic that eventually could be used in homes, airports and other locations.

While the Cas9 enzyme has been used extensively in CRISPR genetic engineering research, scientists have recently employed other enzymes such as the Cas12a and Cas13a for the development of highly accurate CRISPR-based diagnostics. Developed in a similar vein, SENSR is the first SARS-CoV-2 diagnostic to leverage the Cas13d enzyme (specifically a ribonuclease effector called "CasRx").

The researchers believe that in order to maximize CRISPR's capabilities and expand the genetics-based diagnostics pipeline, any Cas enzymes that can complement or supplement existing systems should be explored.

In developing SENSR, Akbari's molecular genetics lab worked in conjunction with Professor Elizabeth Komives' lab in the Department of Chemistry and Biochemistry (Division of Physical Sciences) to purify SENSR proteins and Rob Knight's lab in the Department of Pediatrics (School of Medicine and Center for Microbiome Innovation) to test SARS-CoV-2 samples.

Early tests in SENSR's development demonstrated SARS-CoV-2 detection in less than an hour.

Journal Reference: Development of a Rapid and Sensitive CasRx-Based Diagnostic Assay for SARS-CoV-2. *ACS Sensors*, 2021; DOI: 10.1021/acssensors.1c01088

Scientists develop sperm cells from primate stem cells

October 19, 2021

The study, which was published recently in *Fertility and Sterility Science*, is the first to show that functional sperm cells can be made in a dish using primate embryonic stem cells.

"This is a major breakthrough towards producing stem cell-based therapies to treat male infertility in cases where the men do not produce any viable sperm cells," said lead researcher Charles Easley, an associate professor in UGA's College of Public Health.

Researchers used embryonic stem cells from rhesus macaque monkeys to generate immature sperm cells known as round spermatids, which they showed to be capable of fertilizing a rhesus macaque egg.

Using a novel method, the researchers differentiated the cells into immature sperm cells known as round spermatids. Like immature spermatids in vivo, fertilization with in vitrospermatids requires activating the egg and the addition of other factors to enable the fertilized egg to develop into a healthy embryo.

This fall, the researchers plan to take the next critical step of implanting these embryos into a surrogate rhesus macaque to examine whether these embryos from in vitro spermatids can produce a healthy baby.

If that step is successful, the team will carry out the same process using spermatid-like cells derived from macaque skin cells.

Journal Reference: Blastocyst Development after Fertilization with in vitro Spermatids Derived from Non-Human Primate Embryonic Stem Cells. *F&S Science*, 2021; DOI: 10.1016/j.xfss.2021.09.001

Biotech Industry News

Pfizer, BioNTech and Moderna making $1,000 profit every second while world's poorest countries remain largely unvaccinated

Nov 15 , 2021

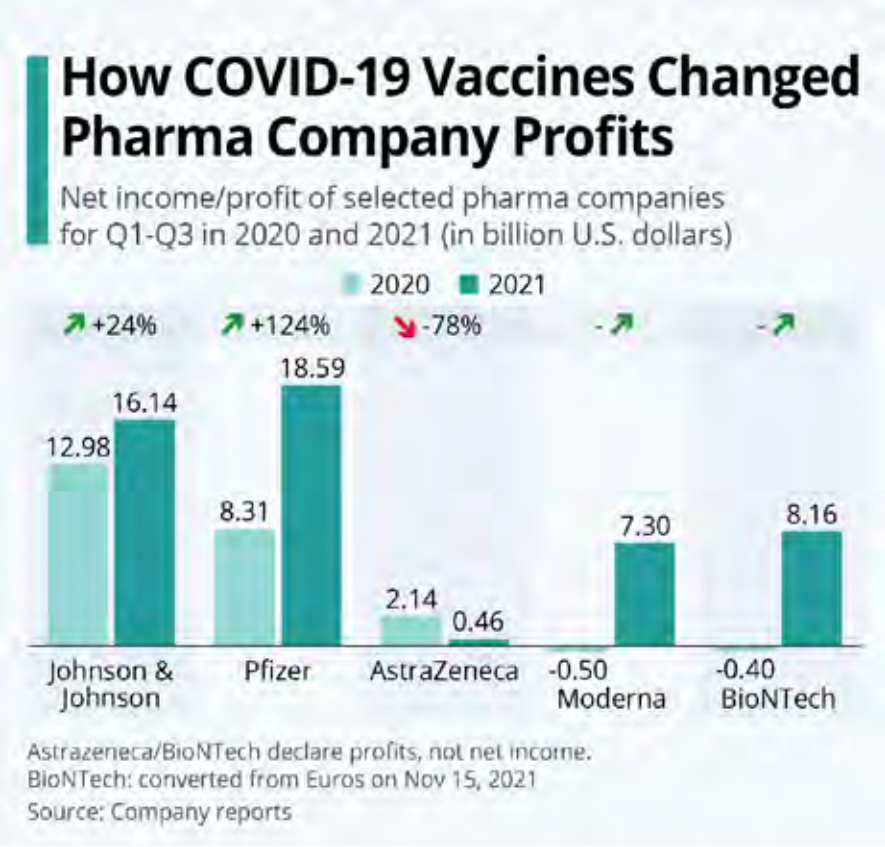
New figures from the Peoples Vaccine Alliance reveal that the companies behind two of the most successful COVID-19 vaccines —Pfizer, BioNTech and Moderna— are making combined profits of $65,000 every minute. Based on company financial statements, the Alliance estimates that Pfizer, BioNTech and Moderna will make pre-tax profits of $34 billion this year between them, which works out as over a thousand dollars a second, $65,000 a minute or $93.5 million a day. The monopolies these companies hold have produced five new billionaires during the pandemic, with a combined net wealth of $35.1 billion.

These companies have sold the majority of doses to rich countries, leaving low-income countries out in the cold. Pfizer and BioNTech have delivered less than one percent of their total vaccine supplies to low-income countries, while Moderna has delivered just 0.2 percent. Meanwhile 98 percent of people in low income countries have not been fully vaccinated.

Despite receiving public funding of over $8 billion, the three corporations have refused calls to urgently transfer vaccine technology and know-how with capable producers in low- and middle-income countries via the World Health Organisation (WHO), a move that could increase global supply, drive down prices and save millions of lives.

While Albert Bourla, the CEO of Pfizer, described the call to share vaccine recipes 'dangerous nonsense,' the WHO emergency use approval of the Indian vaccine Covaxin earlier this month is clear evidence that developing countries have the capacity and expertise.

More than 100 nations, led by South Africa and India —with the support of the US— have been calling for the TRIPS waiver, which also has the support of over 100 past and present world leaders and Nobel laureates. Despite this, other rich nations, including the UK and Germany, are still blocking the proposal, putting the interest of pharmaceutical companies over what's best for the world. This issue is set to dominate the World Trade Organisation Ministerial Summit to be held in Geneva from 30 November to 3 December.



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