BioSpark

E-NEWSLETTER OF AMITY INSTITUTE OF BIOTECHNOLOGY

JAN-JUNE 2021
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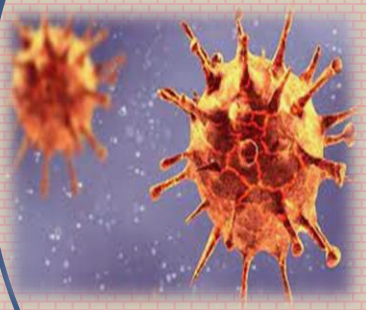

HUMAN EFFORTS BATTLING WITH NATURE

Issue Highlights

***Contributory articles; *Alumni corner**
***Faculty achievement, *Students achievement**
***Interview, *Opportunities, *Events at AIB**

FROM THE DESK OF EDITOR-IN-CHIEF

Prof. (Dr.) R. S. Tomar

It gives me immense pleasure to bring before you the first and second issues of sixth volume of AIB Newsletter 'BioSpark'. The present issue covers the current research, news and scientific updates in the field of agricultural, environmental and biomedical sciences along with the recent news and up & downs of vaccines treatment for COVID-19. In recent times, scientists are continuously engaged in the welfare of mankind with the latest research and its execution. As vaccination is being done in a speedy manner to get rid of this pandemic, still so many doubts and questions are raised by people to pursue. This issue has incorporates various aspects of agricultural biotechnology, environmental biotechnology and medical biotechnology. A wide range of topics have been covered in the present issue, including vaccination, post vaccination effects, 2-DG medicine launched by DRDO etc in the form of contributory articles. Current issues contain students' achievements and the current insights of long lasting immunity. In Industry profile, we have covered the details of Serum Institute of India, a premier biotech company and its collaboration with AstraZeneca lab for the production of CoviShield vaccine in India. At the end of newsletter, we have given the glimpses of various events organised virtually by the Amity Institute of Biotechnology. In addition, we have also included achievements of AIB faculty and alumni. I hope this issue will help students, researchers and other readers to update themselves with the current and applied research in Biotechnology and allied fields. I would like to take this opportunity to thank editorial team for their efforts to bring out a wonderful and informative volume of 'Biospark'. We will be happy to receive your valuable feedback to improve forthcoming issues of the newsletter.

BioSpark Editorial Borad

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(Editor-in-Chief)
Director, AIB & Dean (Life Sciences),
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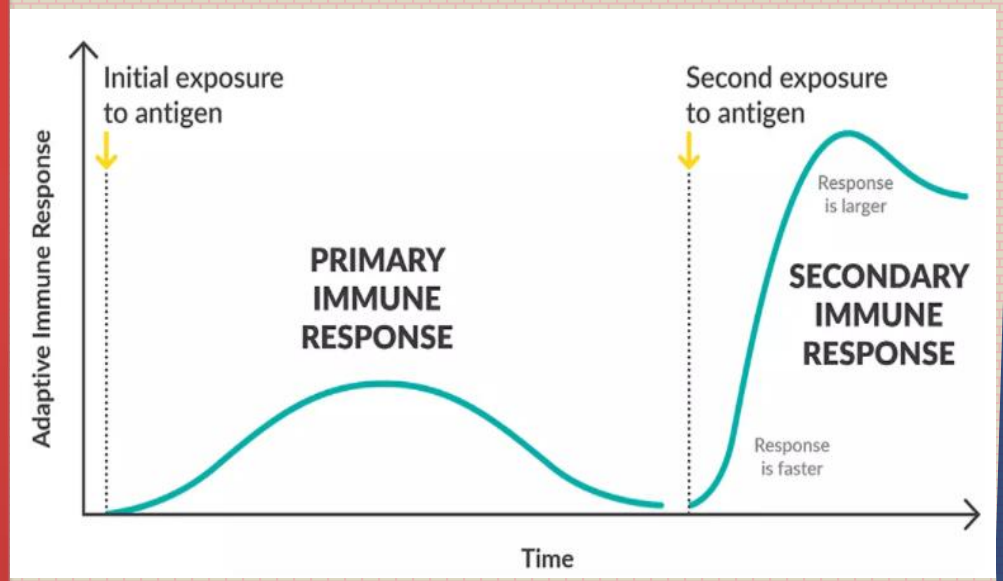
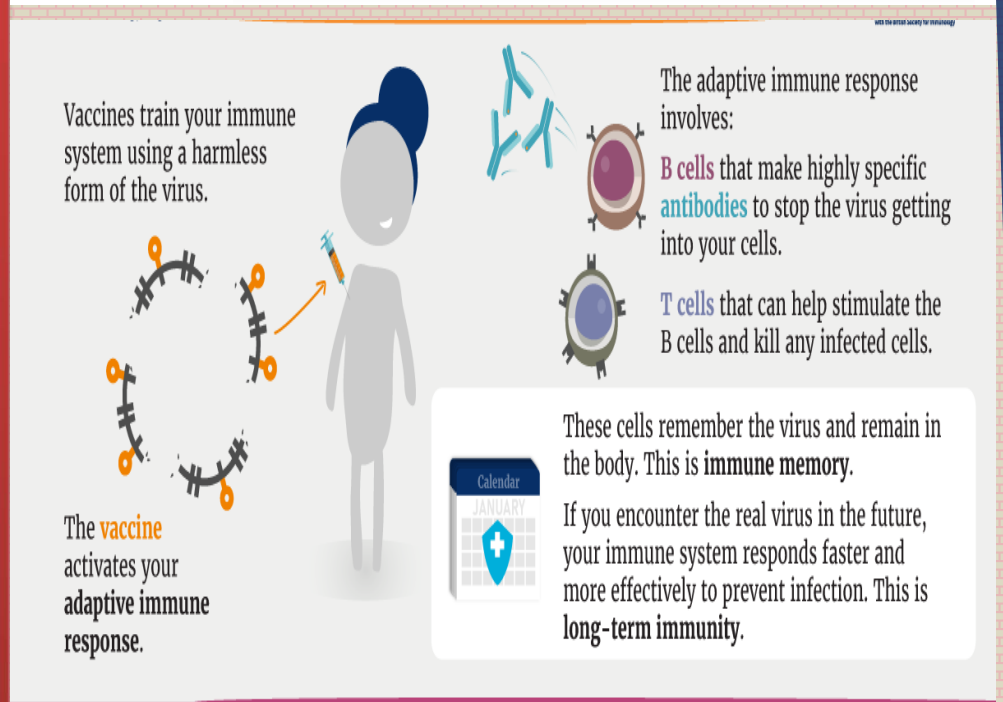
Assistant Professor

Lasting immunity after vaccination

Dr. Neha Sharma
Assistant Professor,
Amity Institute of Biotechnology, AUMP

Public health experts and policy makers to refine targets for achieving the extent of population immunity through vaccination that might be needed to prevent widespread transmission. Although the precise value and even the chance of herd immunity to SARS-CoV-2 is debatable, most epidemiologists think the edge is about 70% protected by vaccination or previous infection. To understand that in the absence of naturally immunity (Herd Immunity), nearly 100% of the population would need to be vaccinated with one dose or about 80% with two doses. Vaccines act by two broad main mechanisms. They will block infection occurring entirely or they will halt the progression to symptoms after infection occurs. The foremost direct pathway to population immunity is that the first mechanism, also referred to as sterilizing immunity. Because, if an individual cannot get infected, they can't transmit. For this reason, there has been tremendous interest in determining the extent to which COVID-19 vaccines block infection. By now, it's clear that the vaccines are remarkably effective against severe disease.





An effective COVID-19 vaccine will produce a strong, long-term, adaptive immune response. It might stimulate B cells and specific antibodies or T cells or a combination of both.

Contributory article

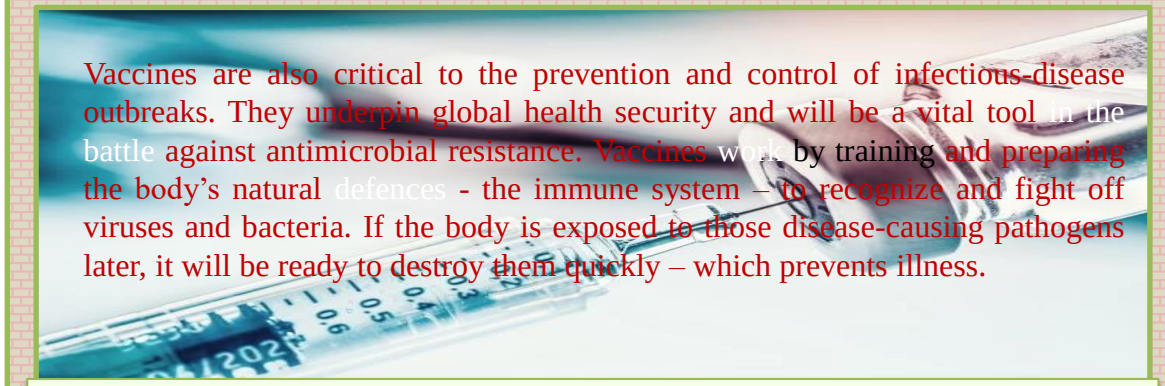
Vaccines and Immunization: Vaccination

Vaccination is a simple, safe, and effective way of protecting people against harmful diseases, before they come into contact with them.

Vaccine uses your body's natural defences to build resistance to specific infections and makes immune system stronger. Vaccines train your immune system to create antibodies, just as it does when it's exposed to a disease.

Vaccines contain only killed or weakened forms of germs like viruses or bacteria, they do not cause the disease or put you at risk of its complications.

Immunization is a global health and development success story, saving millions of lives every year. Vaccines reduce risks of getting a disease by working with your body's natural defences to build protection. When you get a vaccine, your immune system responds. Immunization currently prevents 2-3 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles. Immunization is a key component of primary health care and an indisputable human right. It's also one of the best health investments money can buy.



Vaccines are also critical to the prevention and control of infectious-disease outbreaks. They underpin global health security and will be a vital tool in the battle against antimicrobial resistance. Vaccines work by training and preparing the body's natural defences - the immune system – to recognize and fight off viruses and bacteria. If the body is exposed to those disease-causing pathogens later, it will be ready to destroy them quickly – which prevents illness.

Yet despite tremendous progress, far too many people around the world have insufficient access to vaccines

- Nearly 20 million infants each year have insufficient access to vaccines.
- In some countries, progress has stalled or even reversed, and there is a real risk that complacency will undermine past achievements.
- Global vaccination coverage: the proportion of the world's children who receive recommended vaccines has remained the same over the past few years.
- Nearly everyone can get vaccinated. However, because of some medical conditions, some people should not get certain vaccines, or should wait before getting them.

World Health Organizations (WHO) works to ensure that everyone, everywhere is protected by safe and effective vaccines. To do this, WHO help countries set up rigorous safety systems for vaccines and apply strict international standards to regulate them. Together with scientists from around the world, WHO experts conduct ongoing monitoring to make sure that vaccines continue to be safe. Health organizations also work with partners to help countries investigate and communicate if potential issues of concern arise. Any unexpected adverse side effects that are reported to WHO are evaluated by an independent group of experts called the Global Advisory Committee on Vaccine Safety.

Dr. Asha Singh
Assistant Professor
Amity Institute of Biotechnology
Amity University Madhya Pradesh

Contributory article

CHIA SEEDS: EFFECTIVE ON TYPE 2 DIABETES

- In type 2 diabetes, human body's cells aren't able to respond to insulin. In later stages of the disease, body may also not produce enough insulin. Uncontrolled type 2 diabetes can lead to chronically high blood glucose levels, causing several symptoms and potentially leading to serious complications.
- In 2020, according to the IDF (International Diabetes Federation), 463 million people have diabetes in the world. Of this 463 million people, 77 million belong to India. The prevalence of diabetes in the population is 8.9%, according to the IDF.

Source: https://www.wellthy.care/diabetes-diet-chia-seeds/

- The superfood, packed with important nutrients and antioxidants called as chia seeds comes from the plant *Salvia hispanica.* These seeds deliver a massive amount of nutrients with very few calories which can helps patient to lose an extra pound. The high fiber content makes feel full for longer hours and prevents from overeating. Type 2 diabetic patient are advised to manage their sugar intake, consumption of chia seeds that are a rich source of fiber which helps prevent blood sugar spikes. Moreover, they are anti-inflammatory in nature and therefore a wonder food for diabetes management.

Anamika
PhD Scholar, AIB, AUMP

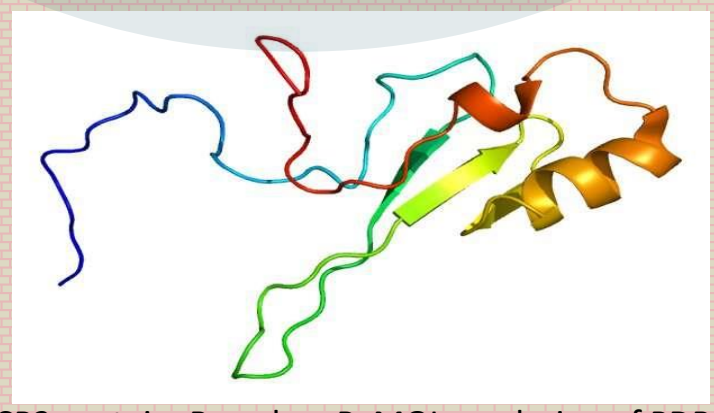
MeCP2: A binding protein that prevents DNA from being wrapped up in nucleosomes

Ayushi Chaturvedi
PhD Scholar, AIB, AUMP

The MeCP2 protein interacts to DNA in a way that prevents it from being wrapped up in nucleosomes, according to a team of researchers from the Institute of Genetics and Molecular Biology in Illkirch, France. The researchers discuss their research into various types of cytosines and adenosine repetitions in DNA and how they identified what could be a biological clue to the cause of Rett syndrome. MECP2 (methyl CpG binding protein 2) is a protein coded by the MECP2 gene. MECP2 appears to be required for nerve cell survival and function. The protein appears to be especially significant in mature nerve cells, where it is abundant. Several more genes are thought to be turned off ("repressing" or "silencing") by the MECP2 protein. This stops the genes from producing proteins that aren't required. Rett syndrome is a hereditary illness that primarily affects females.

Symptoms usually appear shortly after a child's first birthday, as neurological function begins to degrade. There is no cure, however drugs can help to alleviate symptoms. Researchers looked into different types of cytosines and adenosine repetitions in DNA. They observed that MeCP2 attaches to particular repetitive regions in DNA strands in this way.

Using X-ray crystallography, the researchers discovered that MeCP2 with unmutated genes altered the DNA structure slightly, preventing the DNA from being wrapped in nucleosomes. In cases of Rett-related mutations, however, there was no such binding and hence no modification of the DNA, which resulted in the DNA becoming wrapped up with nucleosomes. The researchers have yet to see if the presence of extra nucleosomes affects the regulation of the genes in question. If this is the case, it would be a significant step forward in our knowledge of Rett syndrome's beginnings.



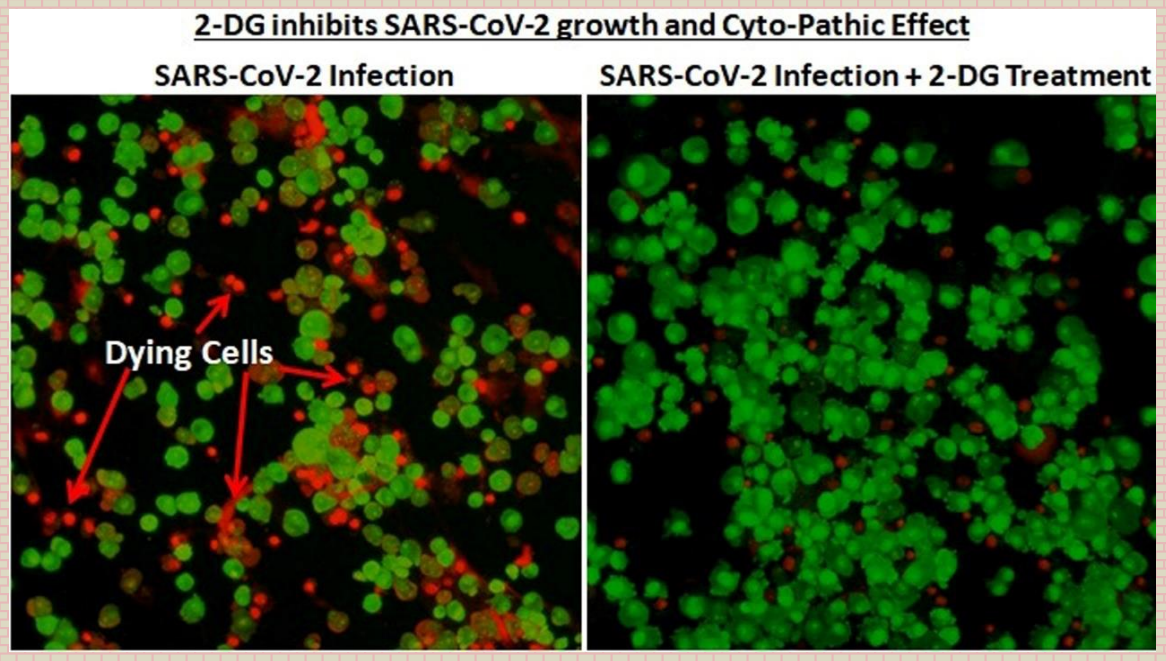
Structure of the MECP2 protein. Based on PyMOL rendering of PDB 1qk9. Credit: CC3.0 Emw

DRDO's 2-DG: Effective against all variants of SARS COV-2

Aarya Sahay
PhD Scholar, AIB, AUMP

According to new study DRDO's anti Covid drug 2-DG is effective against all variants of covid-19. 2-DG reduces the multiplication of SARS-COV-2 and alleviates the cells from infection induced cytopathic effect and cell death. DR. Reddy's laboratories has launched 2-DG in the form of sachets. According to this study drug can be used in the treatment regimen. 2-DG drug developed by the Defence Research and Development Organisation. 2-deoxy D-Glucose (2-DG) comprehensive studies on radio-modifying action of the molecule were instrumental in realising its therapeutic potential for enhancing the effect of radiotherapy and making it successful in cancers having poor response to radiotherapy. Dr. Reddy's laboratory has approval and clinical trials to fulfil mission of DRDO.

The drugs controller general of India has approved the emergency use of the drug 2-DG as a junk therapy in moderate caviar covid-19 patients. 2-DG drug is helpful for covid-19 patient's and reduce the supplement oxygen dependence. The 2-DG drug like glucose spread through the body reaches a virus and infecting cells and prevent virus growth by stopping viral synthesis and destroy protein energy synthesis. the drug also works on virus infection spread into lungs which helps us to decrease patient's dependability on oxygen.



Contributory article

Dual antibody combination therapies: Effective therapies against SARS-CoV-2 variants

Pratibha Navik
PhD Scholar, AIB, AUMP

Therapies employed using antibodies for the treatment of covid-19 are provided to patients at higher risk of illness and require medical assistance. But there's a question that arises whether the effectiveness of these antibody therapies will be as same as for the coming new variants. Most of the two antibody combined therapies are effective against a broad spectrum of virus variants but not all therapies, as per the recent research at Washington University School of Medicine in St. Louis. Moreover, therapies including a combination of antibodies seem to anticipate the emergence of drug resistance. The recent findings, published on June 21 in the journal *Nature*, propose that COVID-19 medications containing two antibodies usually retain potency as a therapy against the SARS-CoV-2 variants. In recent research, the antibodies are tested against the virus variants including key mutations in the genes of their spikes and these are utilized by the virus to invade host cells.

The three variants found with mutations out of four variants are Alpha from the United Kingdom, Beta (South Africa), and Gamma (Brazil) also an emerging concerned variant from India which is similar to the Delta variant with variants from New York and California are also tested. The evaluation of antibodies was done in hamsters and two mice strains and the animal's antibodies were given singly or in the same combinations prior to infecting any of the virus variants. Few single antibodies displayed limited ability or unable to neutralize virus variants in a dish, whereas low doses of several antibody combinations prevented diseases caused due to variants. Dual antibody combination therapy showed to prevent the development of resistant viruses or virus variants and also resistance found with few monotherapies, but not with antibody combination therapy.

Why Vaccines are Important Tool in Health Sector??

TANMAY MAHENDRU
B. Tech Biotech VIII sem
AIB, AUMP

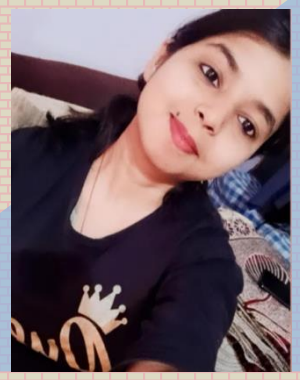
Vaccine is an effective way to prevent infectious diseases as it activates our immune system to protect us as we are constantly exposed to many different viruses, bacteria and other microbes. People should stop believing in myths, instead, they should research more and believe in facts. According to Dr. Randeep Guleria, Director AIIMS, New Delhi - “Vaccines save lives; fear endangers then. A vaccine is important as it activates our immune system preventing and protecting us from dangerous infectious diseases. It boost our immune system specially those senior citizens. Although some vaccines have age limit. We can enjoy our healthy living if Vaccine is there.

Vaccines are keys to stopping this year-long pandemic, it is our responsibility to be part of stopping COVID-19 and one way of doing so is getting vaccinated. Vaccine is important as an agent to activate the immunity of a person to a certain disease in order to lessen the people who may suffer from the diseases. The administration of vaccines around the world is very important mainly to prevent greater disease outbreak. Vaccinated is better than nothing. We all should keep a positive mindset towards the side effects. Vaccines are important because these help us to prepare our body for protection from further effects of viruses and diseases. Vaccines it will not only protect the person that was vaccinated but also the people in their community. It is essential especially now that it was Pandemic to have immunity of the virus to prevent it from spreading, vaccines do not merely protect one-self from diseases but also contribute to the overall improvement of living and economic conditions. Through these, medical expenses and even mortality rate can be significantly reduced.

USED MASKS AND PPE KITS: DEADLY FOR CREATURES

Sweety Mahawar
B.Sc (H) Biotechnology, VI Sem
Amity Institute of Biotechnology
AUMP

A Magellanic penguin in Brazil ingested a face mask. A hedgehog in England got itself entangled in a glove. An octopus off the coast of France was found seeking refuge under a mask. Untamed life and ecosystems all over the planet are experiencing the effects of disposal of single-use COVID-19 protective stuff, environmentalists warned on March 22 in Animal Biology. Latex gloves and polypropylene masks which shield individuals from the Covid-19 are fuelling the plastic contamination issue when not discarded as expected and are causing wildlife deaths. This investigation is the main worldwide documentation of the effects of COVID-19 litter on wildlife through entanglement, entrapment and ingestion. As the broad effects of COVID-19 litter on untamed life become more clear over the long run, agencies are depending on resident researchers to help them keep checking the circumstance, individuals from around the world can present their perceptions of influenced natural life. To control the developing hazards, the examination creators prescribe changing to reusable at every possible opportunity, just as cutting up removal gloves and clipping the ties off of single-use masks to keep creatures from getting entangled or trapped in them.



Vanshika Kumari
B. Sc (H) Biotech, IV sem
AIB, AUMP

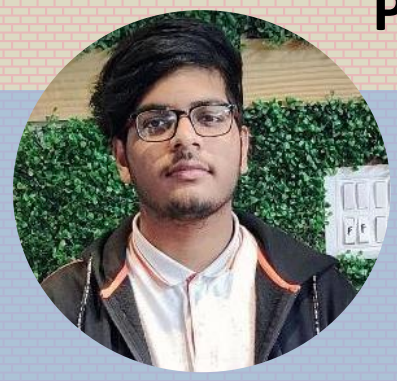
SULFHEMOGLOBINEMIA

[human blood to turn green]

'misdiagnosed and the limitation of co-oximeters during Covid-19'

Sulfhemoglobinemia is a rare condition in which there is excess sulfhemoglobin (SulfHb) in the blood. Greenish pigment is a derivative of hemoglobin. This formed pigment cannot be converted back to normal, functional hemoglobin. It causes cyanosis. In this condition the hemoglobin molecule has the ability to bind irreversibly to any substance containing a sulfur atom. When hydrogen sulfide (H2S) (or sulfide ions) and ferric ions combine in the blood, the blood is incapable of carrying oxygen and results in this. **Sulfhemoglobinemia** is a rare condition in which a sulfur atom oxidizes the heme moiety in hemoglobin, making the hemoglobin incapable of carrying oxygen and **leading** to hypoxia and cyanosis. However, it is not completely understood why sulfhemoglobinemia develops. Moreover, it can be a readily missed diagnosis due to the similarity clinically and spectrophotometrically of SulfHb and to methemoglobin (MetHb). The cause for the sulfhemoglobinemia has been proposed as the combination of *N*-acetylcysteine and high doses of metoclopramide. Difficulties with present-day diagnosis of methemoglobinemia are described. Diagnosis of sulfhemoglobinemia requires a high index of suspicion and confirmation with special laboratory techniques.

SILVER IONS FOR COLOROMETRIC AND ELECTROCHEMICAL DETECTION OF WATER-BORNE PATHOGENS

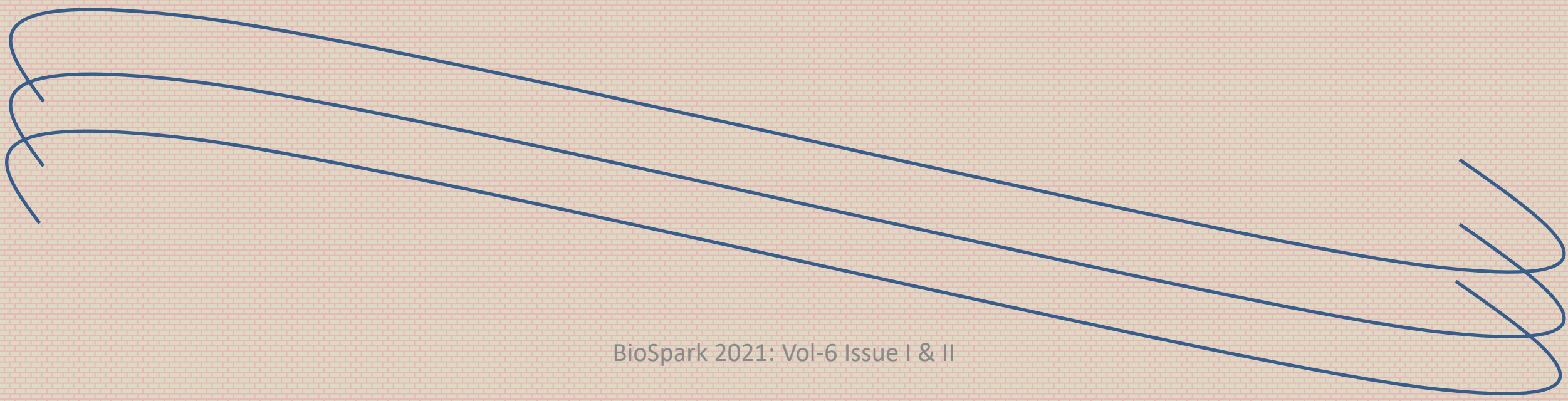


Vishnu Shaji
B. Tech Biotechnology-IV Semester
Amity Institute of Biotechnology
Amity University Madhya Pradesh, Gwalior

Waterborne pathogens are a global concern for worldwide public health. Since pathogens in water are still a major cause of severe illness and mortality, the control, monitoring and application of regulations for water quality are in urgent need and must incorporate more effective microbiological monitoring, pathogen detection and health risk assessment in order to reach the goal of pathogen-free water. Although culture methods for detection of pathogens in water are used routinely, they may underestimate the level of microbial pathogens.

Molecular techniques improve the characterization of these pathogens; however, several disadvantages such as the lack of standardization of protocols and sample processing are still a challenge. Improving available technologies so that they are able to identify causative agents more accurately and in a shorter amount of time, to detect viable microorganisms and characterize them according to microbial communities and that enable the creation of accessible data could enhance the knowledge of waterborne pathogens and the possibilities to predict pathogen contamination and protect public health. Pathogen indicators need to be continually improved since a large number of new emerging pathogens are causing water-related diseases and waterborne outbreaks.

The present concept highlights the efficacy of silver ions to act as unique probe for the detection of bacterial contamination in water samples. The bacterial cell membrane adherence property of the silver ions is employed to develop two different bacterial detection assays; employing colorimetric and electrochemical techniques. In one of the schemes, silver ion was used directly as a detector of bacteria in a colorimetric assay format, and in the other scheme surface-functionalized antibodies are used as a primary capture for specific detection of *Salmonella enterica* serovar *typhi.* The colorimetric detection is based on silver-induced inhibition of urease activity and silver ion utilization by bacteria for the rapid screening of enteric pathogens in water. The specific detection of bacteria uses an antibody-based electrochemical method that employs silver as an electrochemical probe. The ability of silver to act as an electrochemical probe was investigated by employing Anodic Stripping Voltammetry for targeted detection of *Salmonella typhi*. For further insights into the developed assays, inductively coupled plasma mass spectrometry and transmission electron microscopy studies are performed. The sensitivity of the developed assay was found to be 100 CFU/mL for colorimetric and 10 CFU/mL for electrochemical assay respectively.



Faculty Achievements

BEST ORAL PRESENTATION AWARD

[2nd Virtual International Conference INCN3 IC-21]

Prof. (Dr.) Vikas Shrivastava

Co-ordinator AIB, AUMP

BEST E-POSTER PRESENTATION AWARD

[2nd Virtual International Conference INCN3 IC-21]

Dr. Anurag Jyoti

Assistant Professor, AIB AUMP

BEST ORAL PRESENTATION AWARD

[2nd Virtual International Conference INCN3 IC-21]

Dr. Pallavi Singh Chauhan

Assistant Professor, AIB AUMP

Dr. Manish Kumar

Assistant Professor, AIB

Appointed as MP State President of Microbiologists Society, India (MSI)

(2021-2022)

Microbiologists Society, India

C-2/12, Parijatak Apartment, Naikwadi Nagar,Osmanabad 413501, Maharashtra

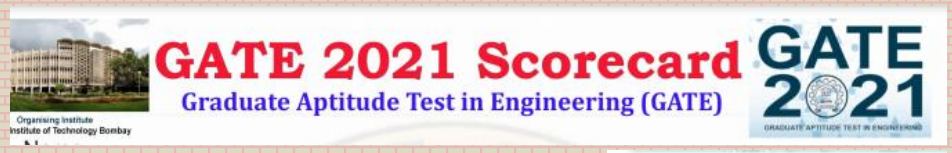
Students' Achievements/Placements

Anmol Anand
B. Tech Biotech (2017-2021)
Company: Mankind's Pharma
Position: Trainee Officer-Microbiology

Tanmay Mahindru
B. Tech Biotech (2017-2021)
Company: Tropolite foods Pvt Ltd
Position: Research Trainee

Mitali Kanchandani
B.Tech Biotech VI sem
Selected for the SPARK 2021 fellowship award by IIT Roorkee
(Summer Internship Program at IIT Roorkee)
Stipend offered: 2500 Rs/Week for two months

Anubha Nema, B.Sc (H) Biotechnology II semester grabbed **Third position in Debate competition** on the Topic "Pandemic Effects on Ecosystem Restoration: A Blessing or a Curse" on 5th June 2021 organized by Department of Environmental Science, Amity University Madhya Pradesh (AUMP)

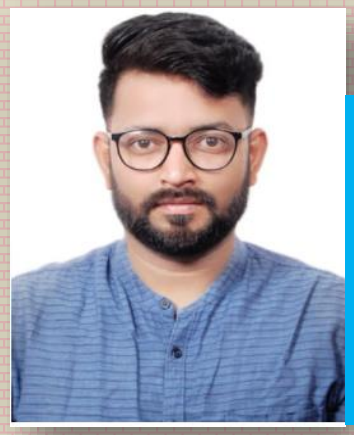


PRIYA BHARTI PATEL, B. Tech Biotechnology (2016-2020)
Cleared GATE 2021 examination and entered into **IIT Guwahati**.

GATE Score	531	Number of Candidates Appeared in this paper	13186
Marks out of 100*	42.33	All India Rank in this paper	468

Shruti Gautam
(B. Tech Biotechnology, Batch 2014-2018)
Pursuing MS in Medical Biotechnology,
University of Illinois at Chicago

Aayush Rastogi
(B. Tech Biotechnology, Batch 2014-2018)
Pursuing MS in Medical Biotechnology,
University of Illinois at Chicago

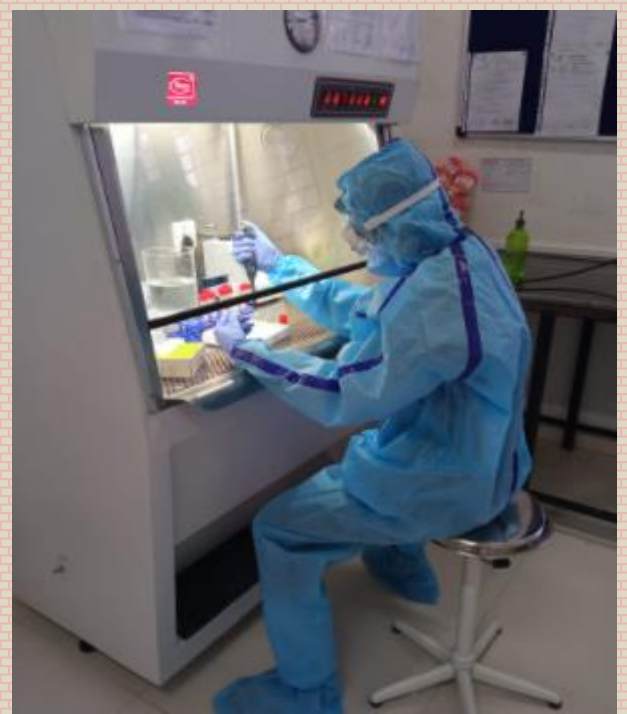


Siddharth Sharma
(B. Sc (H) Biotechnology, Batch 2014-2017)
Joined **SPRINGER NATURE PUBLISHING HOUSE** as JUNIOR EDITORIAL ADVISOR

Interview of a COVID Warrior

Our centre is NABL accredited and ICMR approved. This is a brownfield medical college under in the public private mode partnership with government of Gujarat provide service to the needy tribal population of Gujarat. During this pandemic we have served to needy population to provide RT PCR results on time and till now tested more than 2 lakh patients. I wish to overcome this outbreak and appeal students, faculty and staff of Amity University, Gwalior to wear mask and follow social distancing.

Dr. Nitesh Jaiswal
Nodal officer and Assistant Professor
Molecular laboratory
Zydus Medical college and Hospital
Dahod, Gujarat.



OPPORTUNITIES

Project Position

Project Associate II

Essential Qualifications: (i) Master's degree in Life Sciences / Biotechnology / Bioinformatics / Natural Sciences with minimum 60% marks and (ii) two years' research experience.

@ Regional Centre of Biotechnology

file:///C:/Users/15337/Downloads/advt-15_2021.pdf

Scientific position

Scientist B-I position

@ Division of RBM&CH, CCU, ICMR, New Delhi

Essential Qualification: 1 st class Master's degree in Life Sciences / Biotechnology from recognized university with 2 year experience in related field.

Last Date: 7th July 2021

Project Position

Project Associate

@ Wlidlife Institute of India

Essential Qualification: Minimum of 60 % Marks in M.Sc. in Wildlife Science, Forestry, Natural Resource Management, Life Science and other biological sciences with minimum two years of research experience in field-based project involving herbivore/ carnivore species.

Last Date: 9 july 2021

Oxford-AstraZeneca COVID-19 vaccine: COVISHIELD™

The COVISHIELD™ is a vaccine and may prevent you from getting COVID-19 disease. It is a recombinant, replication-deficient chimpanzee adenovirus vector encoding the SARS-CoV-2 Spike (S) glycoprotein. Following administration, the genetic material of part of corona virus is expressed which stimulates an immune response. COVISHIELD™ contains the various excipients like L-Histidine, L-Histidine hydrochloride monohydrate, Magnesium chloride hexahydrate, Polysorbate 80, Ethanol, Sucrose, Sodium chloride, Disodium edetate dihydrate (EDTA). It consists of two doses of 0.5 ml each. There is no difference between the 1st and 2nd dose. Each dose has the same content of viral particles. The COVISHIELD™ vaccination course consists of two separate doses of 0.5 ml each. If you receive one dose of the COVISHIELD™ vaccine, then the second dose should be administered between 4 to 6 weeks after the first dose. However, there is data available for administration of the second dose up to 12 weeks after the first dose from the overseas studies. The COVISHIELD™ is approved for restricted use in emergency situation vaccine that may prevent COVID-19 disease in individuals 18 years of age and older.

The Serum Institute of India Pvt. Ltd. (SIIPL) offered COVISHIELD™ Vaccine to prevent Coronavirus Disease 2019 (COVID-19) caused by SARS-CoV-2. The COVISHIELD™ Vaccine will be given to you as an intramuscular (IM) injection only, preferably in the deltoid muscle. Serum Institute- Oxford University-AstraZeneca's Covishield vaccine, one of the most popular vaccine candidates has been marred by controversies ever since the roll-out started

The Oxford–AstraZeneca COVID-19 vaccine, codenamed AZD1222, and sold under the brand names Covishield and Vaxzevria among others, is a viral vector vaccine for prevention of COVID-19. Developed by Oxford University and AstraZeneca, it is given by intramuscular injection, using as a vector the modified chimpanzee adenovirus ChAdOx1. Studies carried out in 2020 showed that the efficacy of the vaccine is 76.0% at preventing symptomatic COVID-19 beginning at 22 days following the first dose and 81.3% after the second dose. Another analysis showed that, for symptomatic COVID-19 infection after the second dose, the vaccine is 66% effective against the Alpha variant (lineage B.1.1.7), and 60% against the Delta variant (lineage B.1.617.2). The vaccine has a good safety profile, with side effects including injection-site pain, headache, and nausea, all generally resolving within a few days. More rarely, anaphylaxis may occur (the UK Medicines and Healthcare products Regulatory Agency (MHRA) has 268 reports out of some 21.2 million vaccinations as of 14 April 2021). In very rare cases (around 1 in 100,000 people) the vaccine has been associated with an increased risk of blood clots in combination with low levels of blood platelets. According to the European Medicines Agency as of 4 April 2021, 222 cases of blood clots have been reported from the European Economic Area and the UK, where around 34 million people have received the vaccine. On 30 December 2020, the vaccine was first approved for use in the UK vaccination programme, and the first vaccination outside of a trial was administered on 4 January 2021. The vaccine has since been approved by several medicine agencies worldwide, such as the European Medicines Agency (EMA), and the Australian Therapeutic Goods Administration, and was approved for an Emergency Use Listing by the World Health Organization (WHO). The vaccine is stable at refrigerator temperatures and costs around US$3 to US$4 per dose. On 17 December 2020, a tweet by the Belgian Budget State Secretary revealed that the European Union (EU) would pay €1.78 (US$2.16) per dose, The New York Times suggesting the lower price might relate to factors including investment in vaccine production infrastructure by the EU. As of March 2021 the vaccine active substance (ChAdOx1-SARS-COV-2) is being produced at several sites worldwide, with AstraZeneca claiming to have established 25 sites in 15 countries. The UK sites are Oxford and Keele with bottling and finishing in Wrexham. Other sites include the Serum Institute of India at Pune. The Halix site at Leiden was approved by the EMA on 26 March 2021, joining three other sites approved by the EU. The vaccine is marketed under the brand name Covishield by the Serum Institute of India. The name of the vaccine was changed to Vaxzevria in the European Union on 25 March 2021. Vaxzevria, AstraZeneca COVID-19 Vaccine, and COVID-19 Vaccine AstraZeneca are manufactured by AstraZeneca. AstraZeneca and Serum Institute of India reached a licensing agreement to independently supply 1 billion doses of the Oxford University vaccine to middle- and low-income countries, including India.

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Consultancy and Training at AIB

Meghamani Arya: From KRG PG Govt Girls College doing her 6 months M.Sc dissertation at AIB

Shivika: From KRG PG Govt Girls College doing her 6 months M.Sc dissertation at AIB

Pragya Sharma: From KRG PG Govt Girls College doing her 6 months M.Sc dissertation at AIB

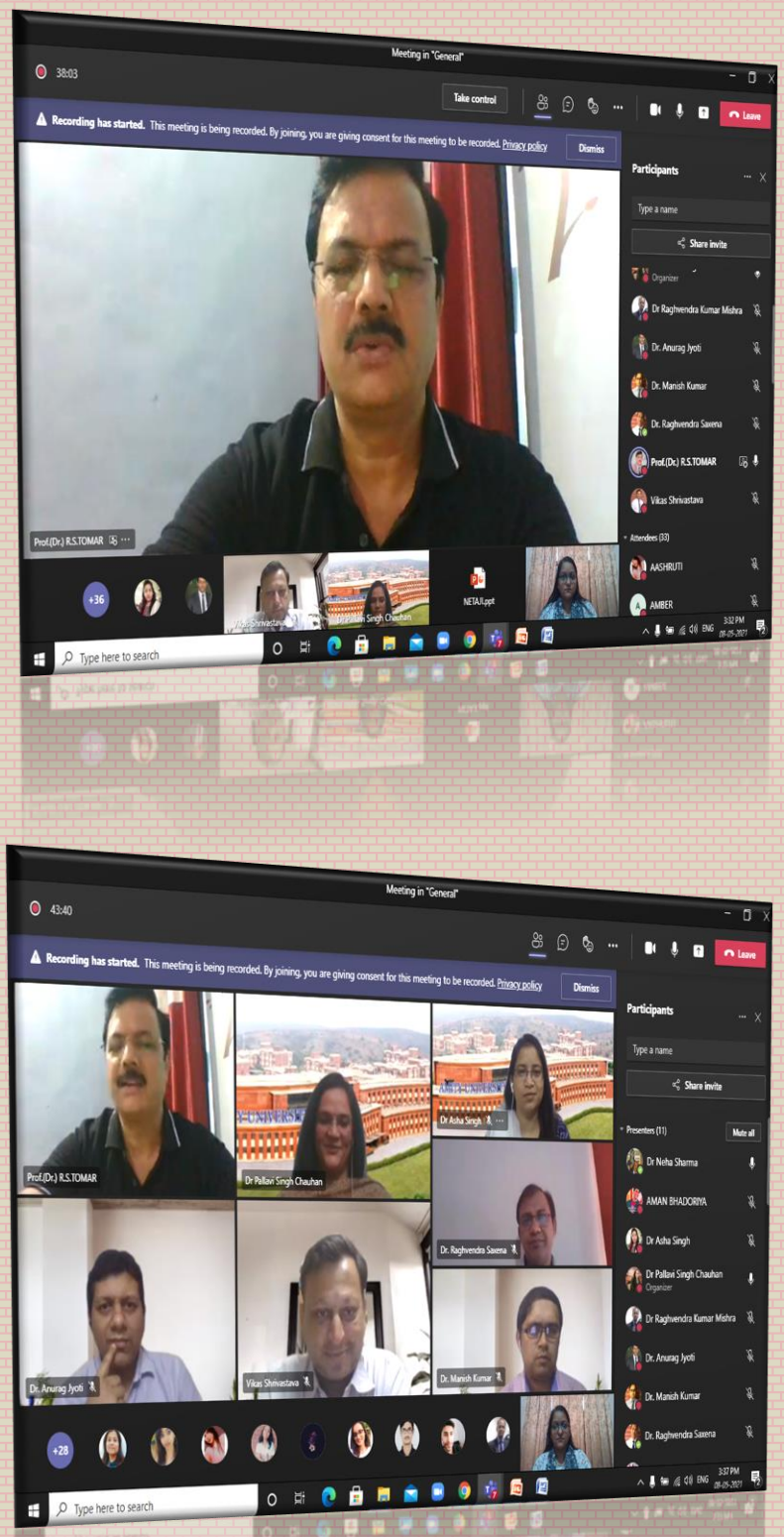
Shivani Shikarwar: From KRG PG Govt Girls College doing her 6 months M.Sc dissertation at AIB

AIB PATENTS

1	**Dr. Arun Rayaroth, Dr. Raghvendra Kumar Mishra, Prof.(Dr.) Rajesh Singh Tomar, Abhilash Nair (of Zeus Biotech Pvt.Ltd., Mysore), Puthurath Kollancheri Vimal and Shimya Vasu**	**Process for producing arachidonic acid rich feed supplement and product thereof.**	**Published on 29.01.2021**
2	Dr. Neha Sharma & Prof.(Dr.) R. S. Tomar	Formulation of novel synergistic combination of Cynodon dactylon with Citrus limon as potent antimicrobial agent against biofilm caused by uropathogenic microorganism	CAP Submitted on 19.03.2021
3	Prof.(Dr.) Rajesh Singh Tomar, Dr. Manish Kumar, Dr. Ajendra Singh Bhadauria and Prof.(Dr.) Vikas Shrivastava	Development of Cow Dung Ashes (CDA) based infusion bags for improving the quality of drinking water	Provisionally filed
4	Dr. Anurag Jyoti, Prof.(Dr.)Vikas Shrivastava, Ms. Neha Shrivastava and Prof.(Dr.) Rajesh Singh Tomar	Matrix-coupled Microalgae for enhanced biosorption of toxic nanoparticles	Provisionally filed
5	Prof.(Dr.) Rajesh Singh Tomar, Dr. Sharmistha Banerjee, Dr. Shuchi Kaushik and Dr. Neha Sharma	pH DEPENDENT RELEASE OF TARGETED ANTI-CANCER METAL NANOFIBERS AND PREPARATION METHOD THEREOF	Provisionally filed
6	Dr. Asha Singh & Prof. (Dr.) Rajesh Singh Tomar	“A CISPLATIN LOADED BIODEGRADABLE NANO DRUG AS CARRIERS FOR ENHANCING ANTINEOPLASTIC ACTIVITY AND PREPARATION METHOD THEREOF”	Provisionally filed

Essay writing competition on "Netaji Subhas Chandra Bose: A forgotten Hero of Freedom Struggle“

[8 May 2021]



WINNERS

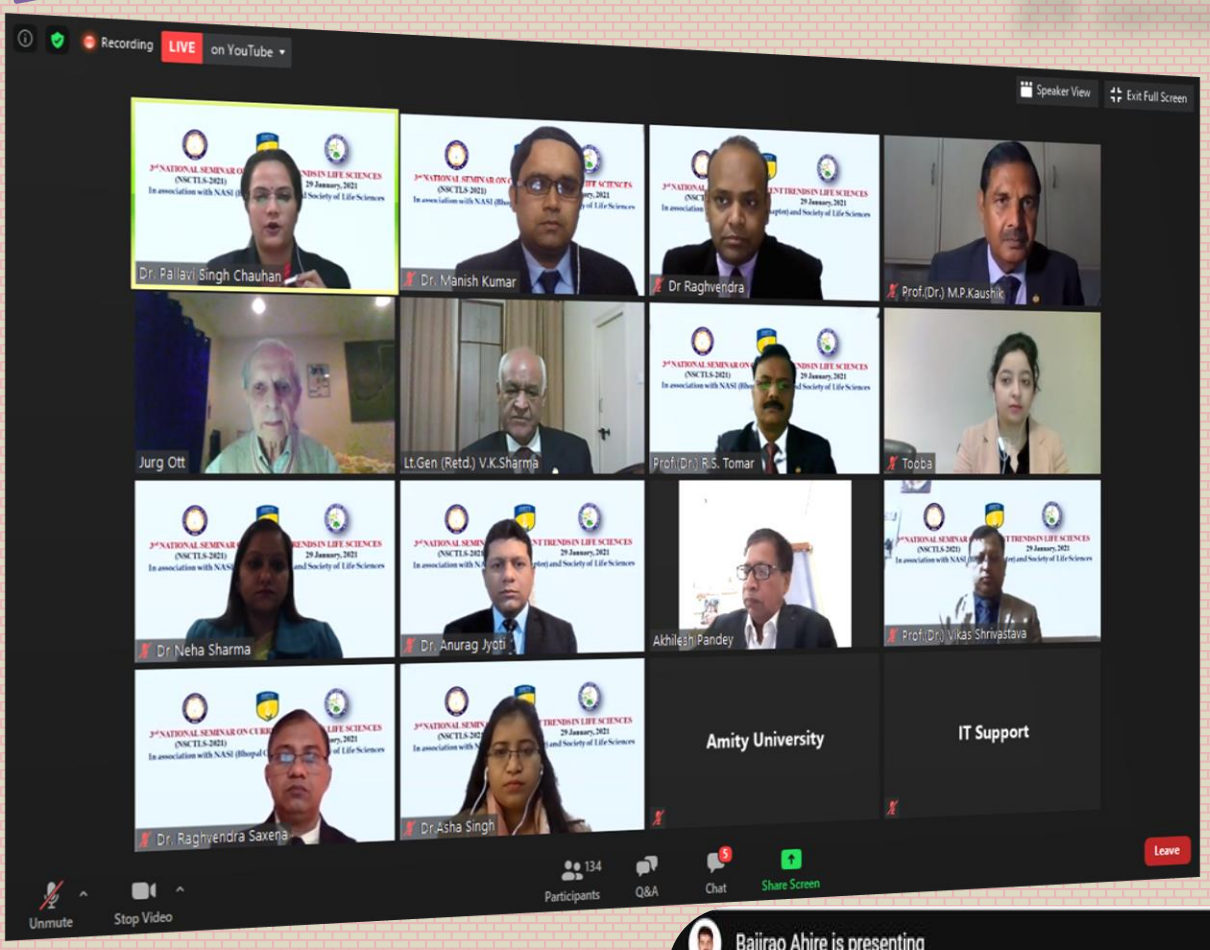
1st Prize: **Sakshi Bansal**, B.Tech Biotechnology IV Sem

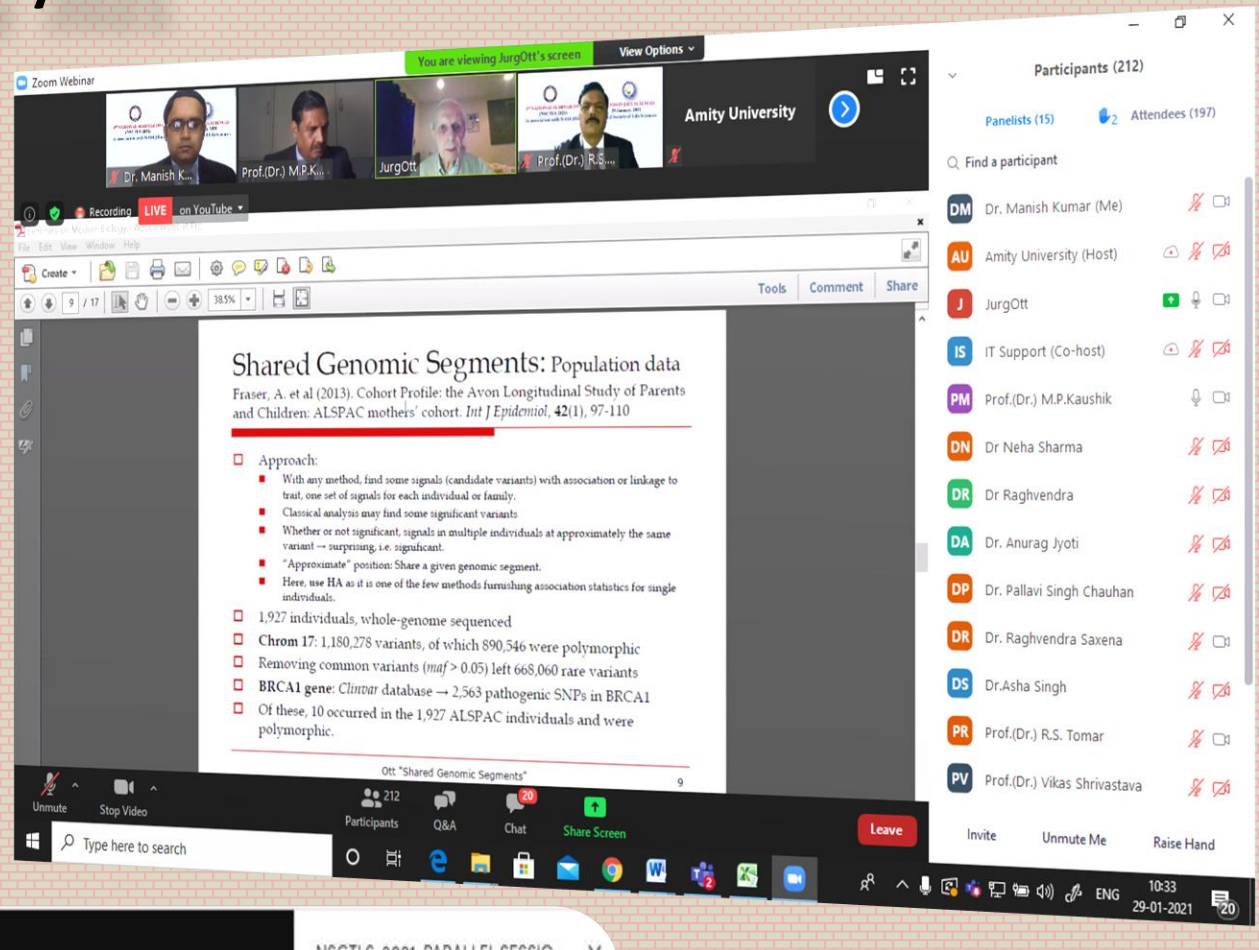
2nd Prize: **Jyotismita Kundu,** B.Tech Biotechnology VI Sem & **Avantika Singh**, B.Tech Biotechnology II Sem

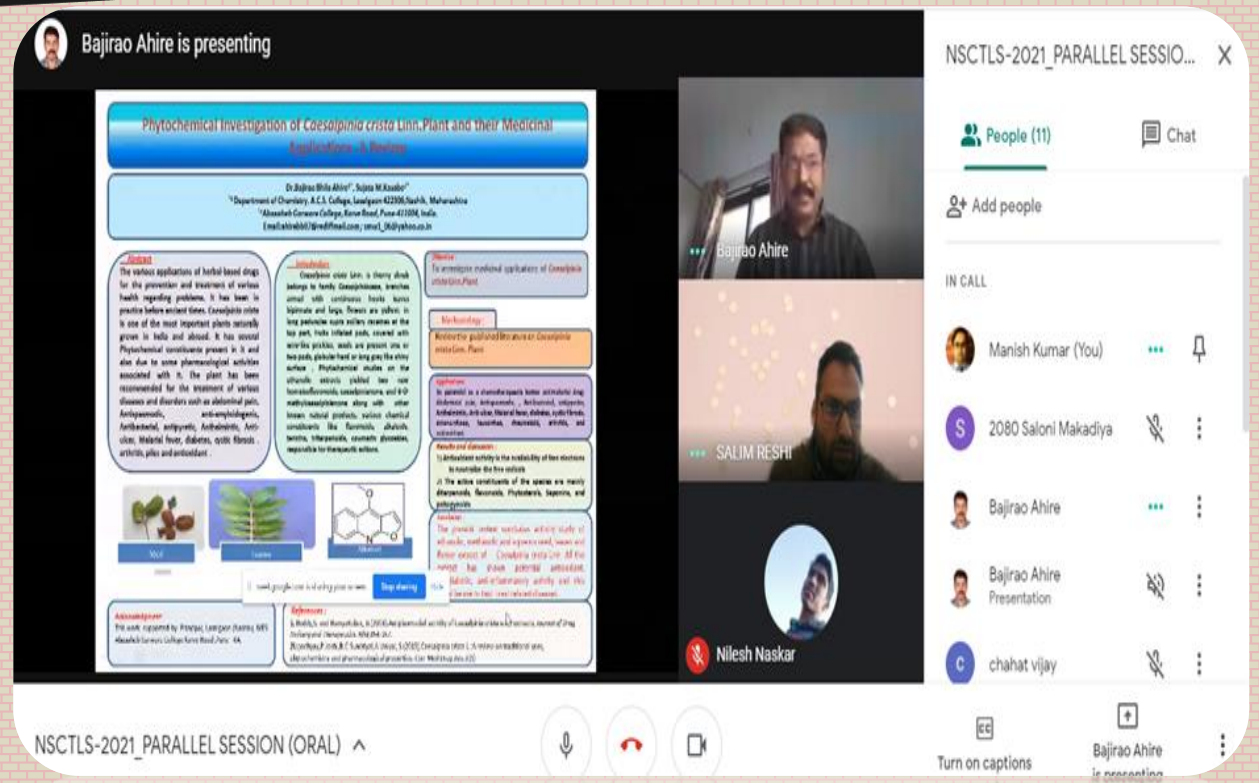
3rd Prize: **Aashruti Bhadoria,** B.Tech Biotechnology VI Sem & **Manvi Sharma**, B.Sc. (H) Biotechnology II Sem

Glimpses

3RD NATIONAL SEMINAR ON CURRENT TRENDS IN LIFE SCIENCES
29 January 2021







एमिटी विश्वयविद्यालय में कोरोना महामारी की रोकथाम के लिए कार्यक्रम का आयोजन (23 March 2021)

Mass distribution of face mask was done by Reliance group at Amity University Madhya Pradesh to all faculties and staff