



Dr. Ambedkar College, Deekshabhoomi, Nagpur.


DACN World CRISPR Day 2024




Dr. Ambedkar College
Deekshabhoomi
Nagpur



Department of Biochemistry & Biotechnology
Celebrates
The World CRISPR Day
21st October 2024

Join us for an online expert talk on the occasion of the World CRISPR Day on 21st October 2024 at 11:00 am using the following link:
<https://meet.google.com/zna-xwrf-xji>

Title: **CRISPR: A new Era in Genetics**
Delivered By: **Dr. Khushboo Agrawal**



  
Tata Institute for Genomics and Sciences National Centre for Biological Sciences
Tata Institute of Fundamental Research

 
Indian Institute of Technology Mandi Bangalore Life Science Cluster

Report on
World CRISPR Day Celebrations 2024
Organised By
Department of Biochemistry & Biotechnology
Date: 21st October 2024

The Department of Biochemistry & Biotechnology at Dr. Ambedkar College, Nagpur, celebrated World CRISPR Day on October 21, 2024, through an online guest lecture by Dr. Khushboo Agrawal, a distinguished researcher in CRISPR and gene editing technologies. The event highlighted CRISPR's transformative potential, ethical implications, and applications in genome editing and disease control. Dr. U.J. Dongre, Head of the Department, inaugurated the session with an emphasis on responsible innovation and the ethical challenges of gene editing, such as biodiversity preservation and preventing misuse for creating "designer babies." Dr. D.N. Begde introduced Dr. Agrawal, outlining her significant contributions as a DST Inspire Fellow and her expertise in molecular biology and neurodegenerative disorders.

Dr. Agrawal provided a detailed explanation of the CRISPR-Cas9 mechanism, its components, and its applications, including precision genome editing and its use in diagnosing and controlling diseases. Dr. Kushboo emphasized upon essential details of the CRISPR mechanism, its Nobel Prize recognition, and its applications in genome editing and diagnosis. A notable segment of her lecture focused on the use of gene drive strategies to replace wild mosquito populations with genetically modified ones, offering a promising approach to combat mosquito-borne diseases like dengue and Zika. She explained the technical aspects of homology-directed repair (HDR) and the role of zymogen activation in designing genetic assets to control flavivirus transmission.

The event also addressed the challenges and ethical considerations of CRISPR applications, particularly in preserving natural ecosystems while implementing effective disease control measures. Dr. Agrawal emphasized the importance of collaborative research, public engagement, and regulatory frameworks to ensure CRISPR technology's responsible use. She concluded with a call for continued research and development to refine these techniques for real-world application. Post the Q&A session student participants were asked to record their live feedback during the online session, wherein most of the participants were seen to respond positively for the content delivered during the session.

The celebrations successfully highlighted the promise of CRISPR in revolutionizing science and medicine while underscoring the need for ethical governance. The department extends its gratitude to Dr. Agrawal for her enlightening lecture and to all participants for their enthusiastic involvement, reaffirming its commitment to fostering awareness and innovation in cutting-edge biotechnologies.

Glimpses of the online event

Khushboo Agrawal (Presenting)

Natural CRISPR Process

The diagram illustrates the natural CRISPR process in a bacterium. It shows a bacteriophage injecting its DNA, which integrates into the host's CRISPR array. The array is transcribed and processed into crRNA. The crRNA, along with Cas proteins, forms a complex that targets and cleaves incoming phage DNA. The cleaved DNA is then integrated into the host's genome, providing immunity against future infections.

Wang and Doudna, 2023

11:19 AM | DACN World CRISPR Day 2024

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WAITING TO JOIN

Waiting to be admitted 2

Deny all Admit all

Mansi Parihar Admit

Rashmi Rawte Admit

IN MEETING

Contributors 43

Deovrat Begde (You)

Multiple people want to join this call

Khushboo Agrawal (Presenting)

Hypothesis

Flavivirus Life Cycle

The diagram shows the life cycle of a flavivirus. It starts with a mosquito biting a human, injecting the virus. The virus enters the human body, replicates in the liver, and then spreads to other organs. The cycle is completed when a mosquito bites the human again, ingesting the virus. The diagram also shows the virus's interaction with the host's immune system and the potential for disease.

Rasika Garade can now join this meeting

11:46 AM | DACN World CRISPR Day 2024

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Deovrat Begde (You) Meeting host

Aachu Badge

Aditya

Akanksha Gedam

Anisha Rahate

Khushboo Agrawal (Presenting)

CRISPR History

The timeline shows the key milestones in CRISPR history. It starts with the discovery of CRISPR in bacteria in 1987, followed by the identification of the first CRISPR sequence in 2007. In 2012, the first mammalian gene editing was achieved. In 2013, the first CRISPR-Cas9 system was developed. In 2016, the first CRISPR-Cas9 system was used to edit the human genome. In 2018, the first CRISPR-Cas9 system was used to edit the human genome.

11:25 AM | DACN World CRISPR Day 2024

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Deovrat Begde (You) Meeting host

aasawari kasare

Aditya

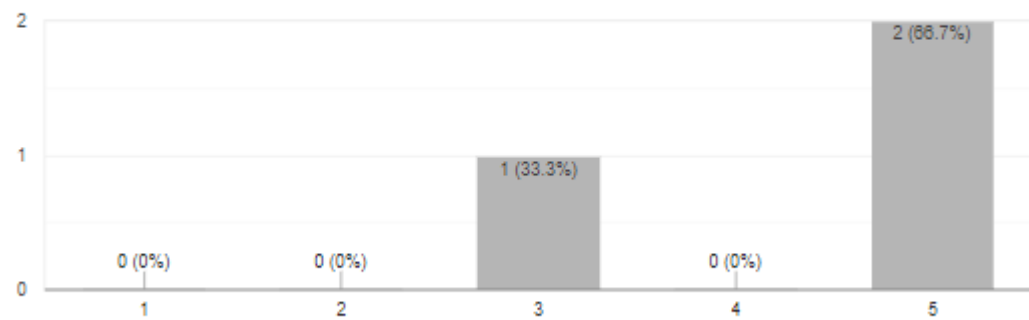
Akanksha Gedam

Ananya Barutkar

How satisfied were you with the event?

 [Copy chart](#)

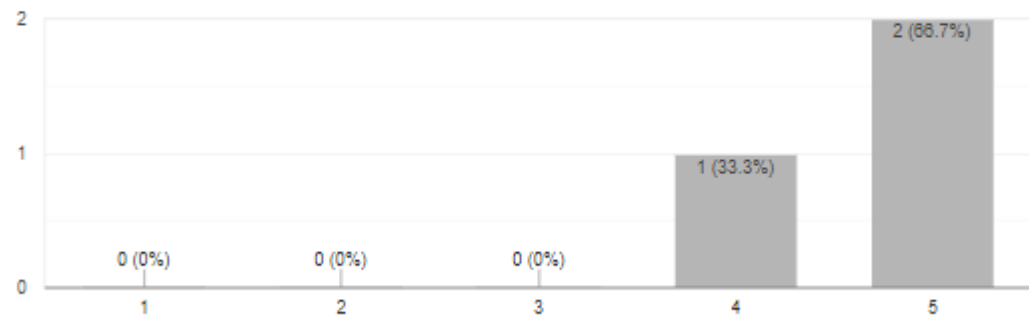
3 responses



How relevant and helpful do you think this kind of learning activity is?

 [Copy chart](#)

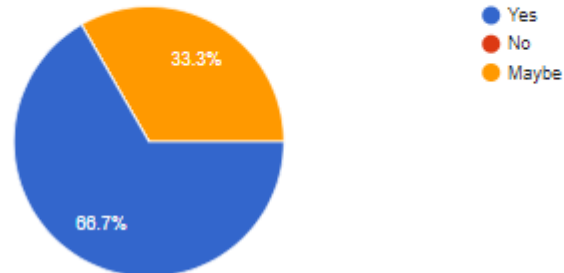
3 responses



Would you like to take a hands-on training course on CRISPR technology even if the course fees is more than Rs. 10000/-?

 [Copy chart](#)

3 responses



What were your key takeaways from this event?
(At least two points)

3 responses

A new gene editing tool named CRISPR. 2) A wide research area is there in gene editing using CRISPR

I was introduced to the CRISPR Technology by this event. Genome editing was not a new topic to us students but such advancements in this field makes us even more enthusiastic about the field we have chosen for our studies. So this was a really nice initiative. I would love to participate in more such competitions in future.

it was helpful activity for us to learn more about CRISPR