

Ministry of Human Resource Development

Guru Angad Dev Teaching Learning Centre of MHRD SGTB Khalsa College, Delhi University

A Centre of MHRD, Govt. of India under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)



In collaboration with



University of Delhi

Ram Lal Anand College,

REPORT

One Week Online Faculty Development Programme Essential Skills for Genomics

(4-11 August, 2023)

Poster/Brochure



RAM LAL ANAND COLLEGE (DEPARTMENT OF MICROBIOLOGY)

UNDER THE AEGIS OF IQAC AND

CENTRE FOR INNOVATION IN INFECTIOUS DISEASE RESEARCH, EDUCATION, AND TRAINING (CIIDRET), UNIVERSITY OF DELHI SOUTH CAMPUS

IN COLLABORATION WITH

INSTITUTION OF EMINENCE-DELHI SCHOOL OF SKILL ENHANCEMENT AND ENTREPRENEURSHIP DEVELOPMENT (IOE-DSSEED)

> UNIVERSITY OF DELHI (SKILL ENHANCEMENT COURSE COMMITTEE)

AND GAD-TLC, SGTB KHALSA COLLEGE MINISTRY OF EDUCATION, PMMMNMTT, GOVT. OF INDIA Is conducting

One Week National Faculty Development Program (FDP)

Essential Skills for Genomics 4-11 August 2023

University of Delhi Skill Enhancement Courses to be covered during FDP

- [] Isolation and Characterization of Plasmid DNA
- **02** Isolation and Characterization and quality check of Genomic DNA
- **03** Polymerase chain reaction (PCR) and its applications

Successful completion of FDP will meet promotional Requiremnts as per CAS of UGC LIMITED SEATS Registration CHARGES @ Rs. 4000/-

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email:vandanagupta@rla.du.ac.in



Inauguration of One Week National Faculty Development Program (FDP) on Essential Skills for Genomics being held at the RAM LAL ANAND COLLEGE and Centre for Innovation in Infectious Disease Research, Education, and Training (CIIDRET), University of Delhi South Campus organized by Department of Microbiology, RLAC, CIIDRET, IOE-DSSEED, Skill Enhancement Course Committee, University of Delhi and GAD-TLC, SGTB Khalsa College, Ministry of Education, PMMMNMTT, Govt. of India.











Duration: 7 working days

Title: Essential Skills for Genomics

No. of Registrations: 15

No. of Participants joined: 15

No. of Participants Qualified (50 or above Total Marks out of 100): 15

No. of Participants Not Qualified (49 or less Total marks out 100): 0

Organising Committee @ GAD-TLC

CORE TEAM

- Prof A. K. Bakhshi, Chairman, GAD-TLC and VC, PDM University, Haryana,
- Prof K V Bhanumurthy Vice-Chairman, GAD-TLC
- Prof Jaswinder Singh, Principal SGTB Khalsa College & Director, GAD-TLC
- Prof. Vimal Rarh, Project head and Joint Director, GAD-TLC

National Coordinator- Dr Vimal Rarh

Organising Committee @ Collaborating Institution

Department of Microbiology, Ram Lal Anand College

- Prof. Rakesh Kumar Gupta, Principal Rlac,
- Prof. Vandana Gupta, Teacher In Charge, Department Of Microbiology, Rlac.
- Prof. Prerna Diwan, Coordinator, Iqac, Rlac

Centre For Innovation In Infectious Disease Research, Education, And Training (Ciidret), University Of Delhi South Campus

• Prof. Amita Gupta, Director, CIIDRET

Institution Of Eminence-Delhi School Of Skill Enhancement And Entrepreneurship Development (Ioe-Dsseed)

• Prof. Vijay K Chaudhary, Director Ioc-Dsseed

Skill Enhancement Course Committee, University Of Delhi

• Prof. Payal Mago, Chairperson, Skill Enhancement Course Committee, University Of Delhi

Resource Persons and Panelists:

From Center For Innovation In Infectious Disease Research, Education And Training (CIIDRET), University of Delhi South Campus:

 Prof. Vijay Kumar Chaudhary - Nasi-Senior Scientist, Director (Hon.), Delhi School For Skill Enhancement & Entrepreneurship Development (DSSEED), UDSC.
Prof. Amita Gupta - Professor & Director
Shilpi Das - Technical Officer At Genomic Facility
Navneet Kaur - Research Scholar
Surbhi Chauhan - Research Scholar

- JRF

• Sapna Yadav - Project Assistant

From Ram Lal Anand College, University of Delhi South Campus :

- **Prof. Vandana Gupta** Professor and Teacher in charge
- Prof. Prerna Diwan Professor
- Ms. Mansi Podia Research Scholar
- Ms. Prerna Yadav Research Scholar
- Ms. Shashi Prabhakumari

Organizers and their Role

Name	Designation and Affiliation	Role
Prof. Vandana Gupta	Professor in Microbiology, Ram Lal Anand college, University of Delhi	Overall planning, execution, coordination among various collaborating institutes, participants feedback and evaluation etc.
Prof. Prerna Diwan	Professor in Microbiology Ram Lal Anand college, University of Delhi	Organizing the genomic DNA isolation experiments and valedictory function
Prof. Rakesh Kumar Gupta	Professor and Principal, Ram Lal Anand College	Overall planning, coordination and providing administrative facilities and funds.
Prof. VK Chaudhary	NASI Senior Scientist Director, IoC-DSSEED, South Campus, University of Delhi	Planning, execution and coordinating conduct of experiments of plasmid isolation and PCR. Also he was the resource person for PCR theory sessions.
Prof. Amita Gupta	Professor & Director Director, CIIDRET South Campus, University of Delhi	Planning, execution and coordinating conduct of experiments of plasmid isolation and PCR. Also he was the resource person for plasmid isolation theory sessions.
Prof Payal Mago	Professor, Director SOL Chairperson, Skill Enhancement courses committee, Principal, Shaheed Rajguru College,od applied Sciences for Women	Guidance and Planning

Prof. A.K.Bakhshi	Ex -VC, UPRTOU & PDM University, Chairman, GAD-TLC	
Prof. Jaswinder Singh	Director, GAD-TLC, Principal, SGTB Khalsa College	
	Professor, SGTB Khalsa College, Project Head, & Joint Director, GAD-TLC	



Participants of One Week National Faculty Development Program (FDP) on "Essential Skills for Genomics" being jointly held at the Centre for Innovation in Infectious Disease Research, Education, and Training (CIIDRET), University of Delhi South Campus and RAM LAL ANAND COLLEGE. This FDP has been organized by Department of Microbiology, RLAC, CIIDRET, IOE-DSSEED, Skill Enhancement Course Committee, University of Delhi and GAD-TLC, SGTB Khalsa College, Ministry of Education, PMMMNMTT, Govt. of India.

Report on Day-wise Schedule for the Workshop on Essential Skills in Genomics 4th-11th August 2023 RLA and CHDRET, UDSC

DATE	DETAILED PROGRAM		
4 th August	Inauguration of the workshop		
(Friday)	Distinguished Guest: Prof. Payal Mago		
First half- RLA	FDP Organisers: Prof. V.K. Chaudhary, Prof. Amita Singh		
	Welcome Address: Prof. Rakesh K. Gupta		
	Vote of Thanks: Prof. Vandana Gupta		
	Introduction of Faculty and Participants		
	Lecture- Basic microbiological techniques		
	Resource Person: Dr. M. Salome John		
	Introduction to all the Equipment, Lab visit		
	Resource Person: Prof. Vandana Gupta		

	Hands-on Practice of Pipetting and Streaking Resource Person: Dr. Sunila, Dr. Nidhi Chandra, Dr. Shalini, Dr. Nidhi Verma			
4 th August (Friday)	BATCH 1	BATCH 2		
Second half- CIIDRET	Preparation of reagents Demonstration of Inoculation for isolation of plasmid DNA Resource Person: Shilpi Das	Preparation of reagents Demonstration of Inoculation for isolation of plasmid DNA Resource Person: Navneet Kaur		
	Demonstration of Isolation of plasmid DNA by Spin Column Method Resource Person: Navneet Kaur	Demonstration of Isolation of plasmid DNA by alkaline lysis Method Resource Person: Shilpi Das		
5 th August (Saturday)	Demonstration of Isolation of plasmid DNA by alkaline lysis MethodDemonstration of Isolation plasmid DNA by Spin Colum Method			
CIIDRET	Resource Person: Shilpi DasResource Person: Navneet KDemonstration of analysis of isolatedDemonstration of analysis of isolatedDNA by agarose gel electrophoresisDNA by agarose gel electrophResource Person: Shilpi DasResource Person: Navneet K			
	Hands-on Inoculation for isolation of plasmid DNA Resource Person: Shilpi Das	Hands-on inoculation for isolation of plasmid DNA Resource Person: Navneet Kaur		
7 th August (Monday) CIIDRET	Hands-on isolation of plasmid DNA by alkaline lysis Method and analysis by agarose gel electrophoresisHands-on isolation of plasmid I by Spin Column Method an analysis by agarose gel electrophoresisResource Person: Navneet Kaur, Surbhi ChauhanKaur, Chauhan			
	Demonstration of PCR Resource Person: Surbhi Chauhan			
	Lecture- Plasmids, Features, Isolation technology- Principles and Methods Resource Person: Prof. Amita Gupta			
	Hands-on inoculation for isolation of plasmid DNA	-		
8 th August (Tuesday) CIIDRET	Hands-on PCR and analysis by agarose gel electrophoresis	Hands-on PCR and analysis by agarose gel electrophoresis		
	Lecture- PCR and its applications Resource Person: Prof. V.K. Chaudhary			

	Purification of PCR product and analysis by agarose gel electrophoresis Resource Person: Surbhi Chauhan	Purification of PCR product and analysis by agarose gel electrophoresis Resource Person: Surbhi Chauhan		
	Lecture- Primer Designing and PCR Components Discussion on Results Resource Persion: Prof. V.K. Chaudhary & Prof. Amita Gupta			
9 th August (Wednesday) RLA	Hands-on isolation of genomic DNA from bacterial cells and analysis by agarose gel electrophoresis Resource Person: Mansi Podia	Hands-on isolation of genomic DNA from bacterial cells and analysis by agarose gel electrophoresis Resource Person: Prerna Yadav, Shashi Prabhakumari		
	Media preparation, sterilization, and plate pouring Resource Person: Dr. Nidhi Verma			
	Inoculation and Streaking Bacterial Culture Resource Person: Dr. Sunila Hooda, Dr. Shalini Swami			
10 th August (Thursday) RLA	Hands-on isolation of genomic DNA from eukaryotic cells and analysis by agarose gel electrophoresis.	Hands-on isolation of genomic DNA rom eukaryotic cells and analysis by agarose gel electrophoresis		
	Genomic DNA QC using Spectrophotometer Resource Person: Mansi Podia, Prerna Yadav, Shashi Prabhakumari			
11 th August (Friday)	Assignment and Quiz Resource Person: Prof. Prerna Diwan			
RLA	Compilation of results, answering questionnaire and feedback on workshop experiments	Compilation of results, answering questionnaire and feedback on workshop experiments		
	Valedictory Event			

Details of the Participants: (n=15)

S.	Name		Email ID	Contact	College of	Department	Designati
No.				Number	Affiliation		on
1	Dr.	Tarun	tktarunbiotech	981075096	Shaheed Rajguru	Biochemistry	Assistant
	Kumar		@gmail.com	7	College of		Professor
					Applied Sciences		
					for Women,		
					University of		
					Delhi		
2	Dr.	Mansi	mgogna@maitr	966788734	Maitreyi College	Botany	Assistant
	Gogna		eyi.du.ac.in	8			Professor
							(Ad-hoc)

3	Dr. V. A. Pratyusha	pratyusha@rajg uru.du.ac.in	987392945 8	Shaheed Rjguru College of Applied Sciences for Women	Biochemistry	Assistant Professor
4	Dr Lakshmi Pasricha Sarin	lakshmi.sarin@r ajguru.du.ac.in	989144025 6	Shaheed Rajguru college of applied sciences for women	Biochemistry	Assistant Professor
5	Dr. Vandana	vandana@maitr eyi.du.ac.in	742841708 9	Maitreyi college	Botany	Assistant Professor
6	Nidhi Verma	vermanidhi5@g mail.com	952849828 0	Ram Lal Anand	Department of Microbiology	Assistant Professor
7	M Salome John	msalomejohn.m ic@rla.du.ac.in	886050488 3	Ram Lal Anand College	Microbiology	Assistant professor
8	Dr. Sunila	sunilahooda@g mail.com	981047377 1	Ram Lal Anand College	Microbiology	Assistant Professor
9	Dr. Shalini Swami	shaliniswami@r la.du.ac.in	995847960 7	Ram Lal Anand College	Microbiology	Assistant Professor
10	Rajesh kumar	rajeshbot@gmai l.com	981034483 1	Hindu	Botany	Associate Professor
11	SUNIL KUMAR DHIMAN	sukudhiman020 6@gmail.com	981112024 9	KIRORI MAL COLLEGE	BOTANY	Associate Professor
12	Dr Swagata Karmakar	sway.swagata@ gmail.com	991047903 7	Ram Lal Anand College	Environment al Studies	Assistant professor
13	Virendra Bahadur Singh	virendrasinghjn u@gmail.com	999931045 4	Ram Lal Anand College	Environment al Studies	Assistant Professor
14	Dr Nidhi Subhash Chandra	drnidhischandra @gmail.com	995359873 2	Ram Lal Anand College	Microbiology	Assistant Professor
15	Dr. Suneeta Meena	suneetameena@ gmail.com	997182234 8	Ram Lal Anand College	Laboratory Medicine	Assistant Professor

STATISTICAL ANALYSIS

We had 15 registered faculties including Assistant and Associate Professors from different affiliated colleges of Delhi University (Hindu College, Shaheed Rajguru College, Maitreyi College, Kirori Mal College and Ram Lal Anand College) and AIIMS, New Delhi.

Certificates of successful completion were awarded to 15 participants on the basis of the mandated attendance in all the thirteen sessions and three compulsory assignments.

Designations of Participants attended: Associate Professor and Assistant Professor

Qualification: PhD. in different discipline of Sciences.

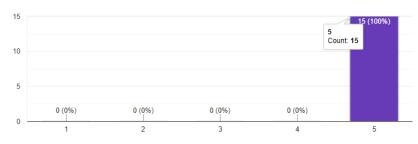
Subject: Botany, Biochemistry, Bioinformatics, Environmental Sciences, Microbiology

Nature of Institution: Affiliated Colleges to Delhi University, AIIMS.

SESSION WISE FEEDABCK ANALYSIS

Day 1, Aug 4 2023

6. How do you rate this Session on a scale of 1 to 5 15 responses



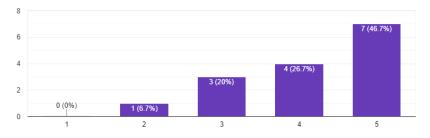
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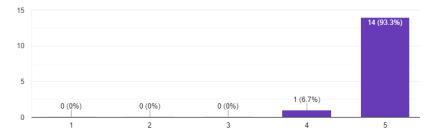
7. How do you rate your knowledge in this topic before attending the Session? Mark only one circle

15 responses



8. How do you rate your knowledge in this topic after attending the Session? Mark only one circle

15 responses



9. Any other feedback

Good arrangement of the whole schedule of experiments
Resource persons are very knowledgeable and very co-operative
Good
Very well arranged.
Quite informative and knowledgeable
Dr Shilpi Das is extremely meticulous. Feels good to be learning from he
Very informative sessions.
Very methodical workshop. Thanks
Good

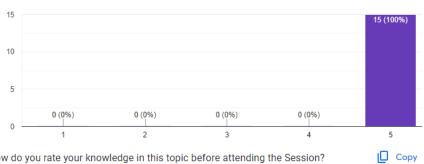
Day 2, Aug 5 2023

6. How do you rate this Session on a scale of 1 to 5 $\,$

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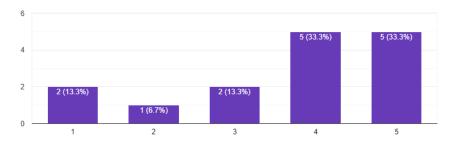
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15 responses



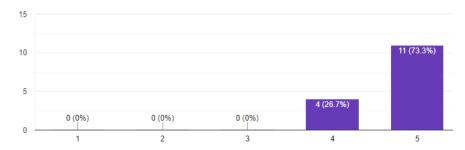
7. How do you rate your knowledge in this topic before attending the Session? Mark only one circle

15 responses



8. How do you rate your knowledge in this topic after attending the Session? Mark only one circle

15 responses



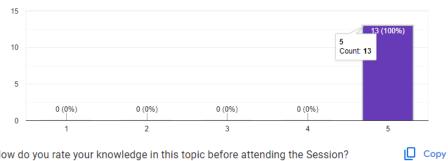
9. Any other feedback

Nicely arranged workshop with very good instructors
All resource persons are very knowledgeable and very co-operative
Instructors, facility and arrangement are very good.
Good
Nice
Comprehensive session and demonstation
Very enjoyable
Impressed with the excellent management of time. A day of much learning. Looking forward to more practice in the week ahead \clubsuit
Very informative sessions
Very well organized FDP
Very well organized FDP

Day 3, Aug 7 2023

6. How do you rate this Session on a scale of 1 to 5

13 responses

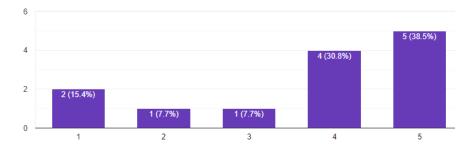


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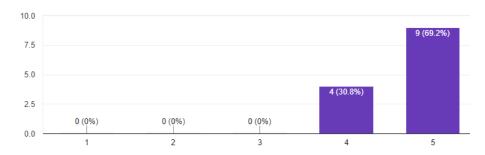
7. How do you rate your knowledge in this topic before attending the Session? Mark only one circle

13 responses



8. How do you rate your knowledge in this topic after attending the Session? Mark only one circle

13 responses



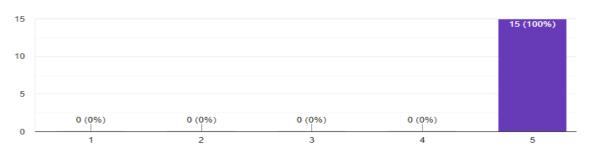
9. Any other feedback

All gud
Good
Very interesting lectures by Prof Amita and Prof Chaudhary
Very good hands on training was given along with theory explanation.
Resource persons are very knowledgeable
Well organised.
Very informative sessions
Enjoyed learning the basics of plasmid isolation, agarose gel electrophoresis and PCR. The lectures were great \

Day 4, Aug 8 2023

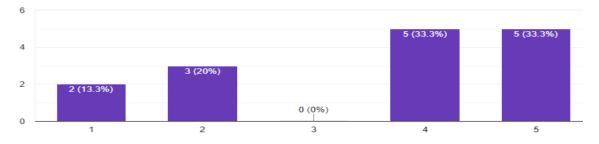
6. How do you rate this Session on a scale of 1 to 5

15 responses



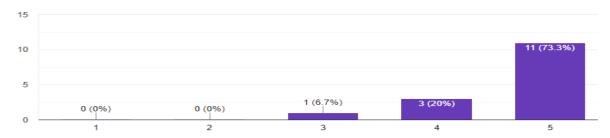
7. How do you rate your knowledge in this topic before attending the Session? Mark only one circle

15 responses



8. How do you rate your knowledge in this topic after attending the Session?

15 responses



9. Any other feedback

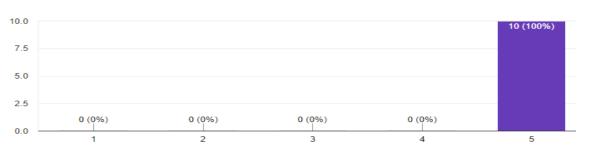
Well Organised
Resource persons are very knowledgeable
All good
Very good sessions.
Excellent Day
The opportunity to work hands on is invaluable. Enjoyed the lectures.
Good
Very interesting lecture in the evening .

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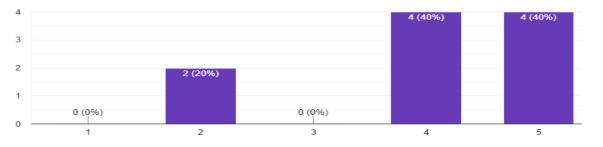
Day 5, Aug 9 2023

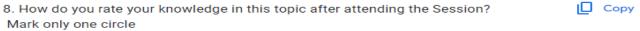
6. How do you rate this Session on a scale of 1 to 5 10 responses



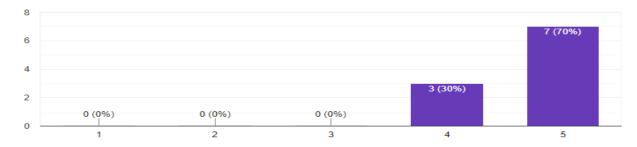
7. How do you rate your knowledge in this topic before attending the Session? Mark only one circle

10 responses

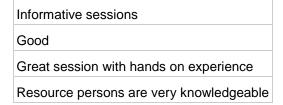




10 responses



9. Any other feedback

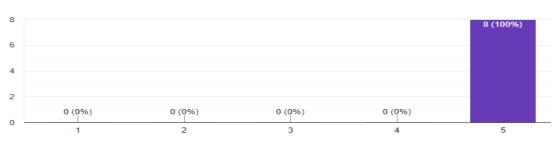


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Day 6, Aug 10 2023

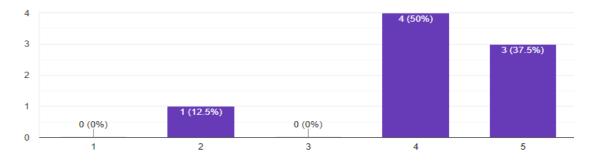
6. How do you rate this Session on a scale of 1 to 5

8 responses



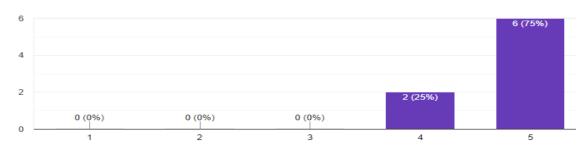
7. How do you rate your knowledge in this topic before attending the Session? Mark only one circle

8 responses

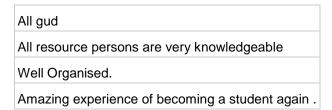


8. How do you rate your knowledge in this topic after attending the Session? Mark only one circle

8 responses



9. Any other feedback



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Overall Feedback, Day 7, 11 Aug 2023

2. How do you rate your overall experience of attending this FDP in scale of 1 to 5, 1 being lowest and 5 being highest.

Rating by All the participants was "5'

3. Five Takeaways from this FDP *

Very informative

Hands on of Plasmid DNA isolation from alkaline lysis Method was described in details. Absolute quantification of PCR amplified DNA, Basic Concepts of PCR, gDNA isolation from different plant leaves.

Isolation of genomic DNA quantification of DNA PCR agrose gel electrophoresis and

Sound Aseptic technique and it's importance in the handling of reagents & genomic samples, Plasmid isolation, prokaryotic genome isolation technique, plant genome isolation technique and basics of PCR (plus the importance of teamwork)

Good lab practices, research orientation, techniques, hands on experience, excellent lectures

Discipline in Research, Motivation for further application of the techniques used, It helped us for potentially improving teaching learning process.

Learning is an ongoing process, Take the knowledge to your college, It is important to be conversant with the new technology and innovations, We can start these skill. Ourses and make the students job ready for the coming future jobs and it is a reju ination time for teachers also when they become students.

Discipline in Research, Motivation for further application of the techniques used, It helped us for potentially improving teaching learning process.

I refreshed my skills on Bacterial culture, Plasmid isolation, PCR, Genomic and DNA isolation. Genomic DNA isolation from plant sample was completely new for me. I also enjoyed the class lectures by Prof. Amita ma'am and Prof. Vijay Chaudhary sir. They cleared all our doubts regarding the experiments.

Everything about this FDP was excellent, research orientated resource persons, techniques, extensive hands on experience, excellent lectures

Good research can be done in the colleges, even with less facilities, I am impressed with the facilities that the dept. of microbiology at RLAC has.

Discipline, teaching and learning can be fun, Motivation, It helped us to learn how to improve teaching learning process.

Very informative

Great excersises designed for evaluation, importance of hands-on, work culture, importance of understanding the basic concepts

4 How do you rate the session on basic Microbiology	4 How do you rate the session on plasmid DNA		4 How do you rate the sessions on Genomic DNA
techniques	isolation	PCR	isolation

Rating by All the participants for all sessions was "5'

1.4			- .	
1	5. Write Nar	nes of 5-6 Resourc	e Persons whom:	vou liked most *
	J. WINC Han			you inco most

All resource persons

Prof. Amita Gupta, Prof. V K Chaudhary, Prof. Vandana Gupta, Shilpi Das, Navneet Kaur

Ms. Surbhi Chauhan Prof. Amita Gupta Ms. Navneet kaur Dr. Salome John

Dr Shilpi Das, Surbhi Chaudhry, Navneet Kaur, Prof Amita Gupta, Prof VK Chaudhary, Prof Vandana Gupta

Mrs. Shilpi, Ms. Navneet, Prof Vandana Gupta, Prof. VK Choudhary, Ms. Mansi, Ms. Prerna

Prof. Vijay Chaudhary, Prof. Amita Gupta, Ms Surabhi, Ms Navneet Kaur, Prof. Vandana Gupta, Prof. Prerna Diwan, Ms Mansi Podia Ms

Prof Amita Gupta, Prof VK Chaudhary, Prof Vandana Gupta, Prof Prerna Dewan, Dr Shilpi Das, Surbhi, Navneet, Mansi, Prerna ànd Shashi

Prof. Vijay Chaudhary, Prof. Amita Gupta, Ms Surabhi, Ms Navneet Kaur, Prof. Vandana Gupta, Prof. Prerna Diwan, Ms Mansi Podia

Dr. Shilpi Das, Ms. Surbhi Chauhan, Ms. Navneet Kaur, Ms. Mansi Podia and Ms. Prerna Yadav

All resource persons

Prof. V K Chaudhary, Prof. Amita Gupta, Prof. Vandana Gupta, Shilpi Das, Navneet Kaur

Ms. Surbhi Chauhan, Prof. Amita Gupta, Ms. Navneet kaur

Prof. VK Chaudhary

All resource persons

6. Give minimum 2-3 sessions you think have scope of improvement. Please mention *

All sessions are very informative

Lectures can more interactive. Gel Electrophoresis, Preparation of Media

PCR product purification PCR amplificatiob and isolation og genomic DNA

More time for eukaryotic Genome isolation

NA

All the sessions were adequately planned and properly executed

All sessions were excellent well planned in advance and hands was also a very good experience .

All the sessions were adequately planned and properly executed

NIL

It can't be better, All the sessions were conducted efficiently, sessions were adequately planned and properly executed

None

NA

I have never seen a better FDP, All the sessions were conducted in a manner that everyone had something to learn

None

7. Which topics would you like GAD-TLC to consider in the conduct of future workshop and training programs? *

Plasmid extraction

Recombinant DNA technology, Real Time PCR, Protein expression and purification

Cloning

Cheese-making, Handling of yeasts (cultivation and growth inhibition), Fermented foods and beverages

Primer designing, NGS, RT PCR

Bioinformatics to help to draw evolutionary relationships between different species

Rt PCR , DNA sequencing

Bioinformatics to help to draw evolutionary relationships between different species

Basic training in Bioinformatics.

real time PCR

qualitative PCR

ELISA

Bioinformatics.

Cloning

8. Any other Suggestion?

Very informative

Thank you for the overall informative sessions which were well placed and nice hospitality.

NA

Please keep organizing hands-on workshops for teachers. The opportunity to learn the principles by actually performing, is priceless. The opportunity to learn from experienced peers and established stalwarts is great!

NA

Overall the FDP was very beneficial to the teachers. We learnt what can be the best within the stipulated time period. In addition total RNA extraction and few variations of PCR (eg. RT-PCR) can be accomodated in Genomics FDPs.in future

We should have such workshops regularly to hone the skulls of the Trainers . It is important to train the trainers for higher efficiency in teaching learning process.

Overall the FDP was very beneficial to the teachers. We learnt what can be the best within the stipulated time period. In addition total RNA extraction and few variations of PCR (eg. RT-PCR) can be accomodated in Genomics FDPs.in future

NIL

kindly organize more of such hands-on workshops for teachers.

No

More of such FDPs are needed

No

None

Any other feedback

All the participants gave very positive feedback on the FDP. On the valedictory event day, Dr Lakshmi Pasricha Sarin, Dr. Tarun Kumar and Dr. Sunil Kumar Dhiman among the participants thanked to RLA and CIIDRET teams for organizing this focused FDP and hospitality provided by the college throughout. They also felt that all the resource persons were extremely good in the topics that they dealt with and also felt the need of conduct of more of such FDPs with extensive hands-on training.