

Hands-on workshop

on

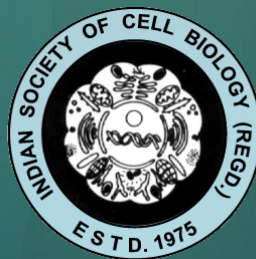
Use of quantitative PCR in Biomedical Research and Diagnostics

18-20 April 2022



Department of Microbiology
All India Institute of Medical Sciences, Bhopal,
Saket Nagar, Bhopal, MP 462020

In association with



Indian Society of Cell Biology

About the workshop: In the past two decades, the use of quantitative PCR (qPCR) also commonly referred as Real Time PCR in gene expression analysis and molecular diagnostics has sky rocketed. While high sensitivity, specificity and versatility has made qPCR the mainstay of nucleic acid detection and quantification, designing and performing qPCR requires thorough understanding and extensive hands-on experience of the technique. This hands-on workshop is aimed at providing comprehensive basic knowledge of the techniques, hands-on experience of qPCR based diagnostic and gene expression (absolute and relative) analysis in clinical samples.

Organizing Committee

- | | |
|---|-----------------|
| • Dr. Nitin Nagarkar, Director & CEO | Chief Patron |
| • Dr. Rajesh Malik, Dean Academics | Patron |
| • Dr. Debasis Biswas, Dean Research | Chairperson |
| • Dr. Anirudh Singh, RLS Fellow, Dept of Microbiology | Secretary |
| • Dr. Ashish Vyas, INSPIRE Faculty, Dept of Microbiology | Joint secretary |
| • Dr. Shashwati Nema, Associate Professor, Dept of Microbiology | Treasurer |

Faculty

- Dr. Shashwati Nema, AIIMS, Bhopal
- Dr. Shivendra Kumar Chaurasiya, MANIT, Bhopal
- Dr. Mamta Singh, BASU, Patna
- Dr. Anirudh Kumar Singh, AIIMS, Bhopal
- Dr. Ashish Kumar Vyas, AIIMS, Bhopal

Scientific Advisors

- Dr. Shashank Purwar, AIIMS, Bhopal
- Dr. Ashok Kumar, AIIMS, Bhopal
- Dr. Jitendra Singh, AIIMS, Bhopal

Resource and Technical Team

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|---------------------------|------------------------|
| • Mr. Ashvini Kumar Yadav | Ms. Garima Garg |
| • Ms. Shraddha Rajak | Mr. Dipesh Kale |
| • Ms. Kajal Patel | Ms. Rupal Rai |
| • Ms. Chitra Patankar | Ms. Priyal Gupta |
| • Mr. Vinayak Singh | Ms. Bijina John Mathew |

Target audience

- Early career teachers from universities/colleges and PhD students
- Workshop is limited to 12 participants (6 teachers and 6 PhD students)

Mode of selection

- First cum first serve basis (email your application to anirudh.micro@aiimsbhopal.edu.in on or before 15/04/2022)
- Participation in the workshop is free
- Participants need to arrange travel and lodging on their own, no on campus accommodation will be provided

Overview of the Workshop

- Overview of qPCR and its use in biomedical research and diagnosis
- Sample collection and Lab safety
- Hands on nucleic acid purification and quality control
- Considerations for qPCR assay design, Sequence retrieval, Primer design
- Hands-on q PCR/RT-qPCR
- Data analyses and interpretation

Dates to remember

- | | |
|----------------------------|-------------------|
| Date of workshop: | April 18-20, 2022 |
| Last date of registration: | April 15, 2022 |

Hands-on-workshop on “Use of quantitative PCR in Biomedical Research and Diagnostics”

Day 1

8:00-9:15 am	Registration
9:15-9:30 am	Inauguration
9:30-10:10 am	Tea Break
10:00-10:30 am	Biosafety in Biomedical Research (Dr. Shashwati Nema, AIIMS, Bhopal)
10:30-11:15 am	qPCR: Basics and Applications (Dr. Shivendra Chaurasiya, MANIT, Bhopal)
11:15-12:00 pm	Experiment design: Primers, PCR efficiency and controls (Dr. Anirudh Singh, AIIMS, Bhopal)
12:00-12:30 pm AIIMS, Bhopal)	Differential expression of immune genes in infectious disease (Dr. Ashish Vyas,
12:30-1:00 pm	Effect of abiotic stress on gene expression in fish (Dr. Mamta Singh, BASU, Patna)
1:00-2:00 pm	Lunch
2:00-6:00 pm	Nucleic acid (DNA and RNA) purification and quantitation *Participants will be divided in three teams of four individuals and resource team will demonstrate and help perform the experiment. Each participant will get to do the experiment.
6:00 pm onwards	Tea

Day 2

9:30-10:00 am	Revision of Day 1 and discussion
10:00-10:30 am	Tea break
10:30-12:30 pm	cDNA synthesis *Participants will be divided in three teams of four individuals and resource team will demonstrate and help perform the experiment. Each participant will get to do the experiment.
12:30-1:30 pm	Lunch
1:30-6:00 pm	Real time PCR for absolute/relative quantification and COVID-19 diagnosis *Participants will be divided in three teams of four individuals and resource team will demonstrate and help perform the experiment. Each participant will get to do the experiment.
6:00 pm onwards	Tea

Day 3

9:30-11:30 am	Data analyses and interpretation
11:30-12:00 pm	Post training assessment quiz (Top three participants will get awards)
12:00-12:30 pm	Valedictory function
12:30 pm onward	Lunch

Registration Form

(Please fill the form and send the scan copy of it with the application)

Name _____ Sex (M/F) _____

University/College with address _____

Mailing Address _____

Email id _____

Contact No. _____

Date
Place

Signature

Forwarded by Head of the institution/department