RAMAIAH

PMRF
Prime Minister's Research Fellows

M S Ramaiah College of Arts, Science and Commerce - Autonomous
MSRIT Post, Mathikere, Bengaluru - 560054

Department of Biotechnology
organizes

VALUE ADDED PROGRAMME
ON
"MAMMALIAN CELL CULTURE"

Date: 15 to 19 September 2025

Conveners
Dr. Lakshmi Kanth R N
Dr. Sowbhagya R
Dr. Muktha H

About the Department

The Postgraduate Department of Biotechnology at MS Ramaiah College of Arts, Science, and Commerce, established in 2002, has been a hub of academic excellence and research innovation for over two decades. The department focuses on hands-on training and research guidance, encouraging students to engage in projects equipping them with essential practical and research skills, writing and publishing research articles.

Chief Guest
Prof. PaturuKondiah,
Retired Professor
Molecular Reproduction, Development and Genetics
Indian Institute of Science, Bangalore

About the Value added Course

"Mammalian Cell Culture" is an intensive, hands-on training program to introduce participants to the principles, techniques, and applications of culturing mammalian cells under controlled laboratory conditions. The key objectives of this course includes:

- Introduction to mammalian cell culture: Theory sessions to introduce students to mammalian cell culture including lectures on real-world applications of mammalian cell culture, and commonly-used cell-based assays.
- Laboratory setup and biosafety: Detailed theoretical sessions on equipment and reagents required for aseptic culture techniques, aimed at helping students appreciate the nuances of mammalian cell culture.
- Culture media and supplements: Theoretical and practical demonstration of commonly-used culture media required for maintaining mammalian cell cultures.
- Sub-culturing and cryopreservation: Extensive hands-on training will be provided on individual basis to impart experience in sub-culturing mammalian cell-lines alongside practical demonstration of cryopreservation.
- Cell counting and viability assay: Practical demonstration of cell counting and viability assessment using trypan blue-staining.
- Troubleshooting: Interactive sessions to discuss commonly-faced issues in cell culture including contamination in cell cultures.

Organizers

Dr. Jayashree D R, HoD, Biotechnology
Dr. Lakshmikanth R N, Associate Professor
Dr. Sowbhagya R, Assistant Professor
Dr. Muktha H, Assistant Professor
Ms. Sanchita Mishra, PMRF fellow, Dept. Of Biochemistry, Indian Institute of Science
Ms. Anantika Chandra, PMRF fellow, Dept. Of Biochemistry, Indian Institute of Science

Value-added Program on Mammalian Cell Culture

15 - 19 September 2025

Venue: Lectures - Room no. 608

Practicals - Room no. 419 and 421

Day 1 (15th September, 2025)	
09.30 am-10.45 am	Inaugural Ceremony
10.45 am-11.00 am	Tea Break
11.00 am-12.30 pm	Module 1 (Theoretical Session): Introduction to mammalian cell culture • Definition and Importance of Mammalian Cell Culture • Types of Mammalian Cell Cultures • Laboratory Requirements and Aseptic Techniques • Culture Media and Supplements • Cell Growth and Maintenance • Cryopreservation and Thawing of Cells
12.30 pm-01.15 pm	Lunch Break
01.15 pm-04.00 pm	Module 2 (Practical Session): • Adherent Cell Morphology • Cell counting and Trypan Blue staining • Cryopreservation and Thawing of Cells • Expression of GFP in HeLa/293 cells

Day 2 (16th September, 2025)	
09.30 am-10.00 am	Module 3 (Theoretical Session): Maintenance and Characterization of Mammalian Cell Cultures • Applications of Mammalian Cell Culture • Common Challenges and Contamination in Cell Culture • Ethical and Safety Considerations
11.00 am-11.15 am	Tea Break
11.15 am-12.30 pm	Module 4 (Theoretical Session): Introduction to Transfection • Introduction to Transfection • Types of Transfection • Choosing the Right Transfection Method • Optimization of Transfection • Applications of Transfection • Troubleshooting Common Issues • Safety and Ethical Considerations
12.30 pm-01.15 pm	Lunch Break
01.15 pm-04.00 pm	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines

Day 3 (17th September, 2025)	
09.30 am-11.00 am	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines
11.00 am-11.15 am	Tea Break
11.15 am-12.30 pm	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines
12.30 pm-01.15 pm	Lunch Break
01.15 pm-04.00 pm	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing

Day 4 (17th September, 2025)	
09.30 am-11.00 am	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines
11.00 am-11.15 am	Tea Break
11.15 am-12.30 pm	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines
12.30 pm-01.15 pm	Lunch Break
01.15 pm-04.00 pm	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing

Day 5 (18th September, 2025)	
09.30 am-11.00 am	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines
11.00 am-11.15 am	Tea Break
11.15 am-12.30 pm	Module 5 (Hands-on Practical Session): Stable Cell Line Generation • Assess cell culture and adherent Cell Morphology • Subculturing adherent cell lines
12.30 pm-01.15 pm	Lunch Break
01.15 pm-02.30 pm	Valedictory session

Resource Persons

1. **Ms. Sanchita Mishra**
   PMRF fellow
   Dept. Of Biochemistry
   Indian Institute of Science
2. **Ms. Anantika Chandra**
   PMRF fellow
   Dept. Of Biochemistry,
   Indian Institute of Science
3. **Dr. Dileep Kumar M G**
   Assistant Professor,
   Dept. of Biotechnology, MSRCASC
4. **Dr. Pratheek B M,**
   Assistant Professor,
   Dept. of Biotechnology, MSRCASC

"Everything is theoretically impossible, until it is done."

Robert A. Heinlein