

SCHOOL OF BIOTECHNOLOGY

DEVI AHILYA VISHWAVIDYALAYA, INDORE

Report on Hands-on Training Program

The School of Biotechnology, Devi Ahilya Vishwavidyalaya, organized a 5 days hands-on training program from 9th – 13th November 2022 on the topic “MAMMALIAN CELL CULTURE TECHNIQUES AND RELATED ASSAYS”. The workshop aimed to provide participants with an in-depth understanding of cell culture techniques and commonly used assays in research. Dr. Hamendra Singh Parmar sir supervised the whole workshop. The 5-day long workshop covered several techniques, including the cell viability assay/MTT assay, wound healing assay, transwell migration assay, cell death detection ELISA, DNA isolation, RNA isolation, and Real-time PCR.

Day 1 started with Dr. Parmar’s valuable words where he gave some insight on the work process and importance of these techniques in wet labs. He also gave an overview of the workshop after which the participants were introduced to basics of mammalian cell culture, including cell morphology, growth media, different types of culture vessels and appropriate conditions required for cell growth. Participants learned about the different types of mammalian cells, such as primary cells, cell lines, and stem cells. The 2nd day of the workshop focused on the cell viability assay where students were provided with hands-on training in the MTT assay, which is a widely used colorimetric assay for measuring cell viability. On the 3rd day, the workshop covered wound healing and transwell migration assays. These assays are commonly used to assess wound closure and cell migration, and are essential for studying cell behavior in vitro. Students were given hands-on training in setting up these assays and analyzing the results. The 4th day focused on cell death detection ELISA assay which is used to detect and measure apoptosis and necrosis in cells. The final day of the workshop focused on real-time PCR, a widely used molecular biology technique for the detection and quantification of nucleic acids, where students learned setting up a real-time PCR experiment and data analysis.

The workshop was highly interactive, also students had great opportunity to practice each technique themselves. The workshop concluded with a feedback session, where participants shared their learnings and experiences. In the end all the participants were provided with a certificate of participation which marked the successful completion of the hands-on training program. Overall, the whole program was very informative and engaging where students gained practical knowledge and skills that they can apply in their future research projects. We are very thankful to the institute and all the faculty members for providing us with such an enriching environment.

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