

Departmental Seminar

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| Seminar Title | : Isolation of cellular organelles and vesicles from lung cell lines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Speaker       | : Sambit Kumar Patra (Roll No: 522ls1001)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Supervisor    | : 06612462785                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Venue         | : Life Science Seminar Hall                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Date and Time | : 14 Jun 2024 (9:00 AM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Abstract      | : Cellular organelles, such as mitochondria, endoplasmic reticulum, and lysosomes, play pivotal roles in cell function, and their isolation is essential for studying their structure, function, and involvement in various cellular processes. Vesicles are increasingly recognized for their roles in intercellular communication and biomolecule transport, making their isolation crucial for understanding their contents and functions. Isolation methods encompass a range of techniques, including differential centrifugation, density gradient ultracentrifugation, and affinity-based approaches, each with unique advantages and limitations. Recent advancements in isolation technologies, such as microfluidics and immune-affinity capture, have improved the specificity and efficiency of organelle and vesicle isolation. The isolated organelles and vesicles serve as valuable research tools, offering insights into cellular physiology, biomarker discovery, and therapeutic development. Additionally, they have clinical relevance in diagnostics, as specific organelles and vesicles can harbor disease-related markers, enabling non-invasive disease detection and monitoring. Briefly, organelle and vesicle isolation techniques are indispensable for advancing our understanding of cellular biology, driving biomedical research, and facilitating clinical applications in diagnostics and therapeutics. In summary I have isolated proteins and done western blotting and mass spectrometry analysis from cellular organelles. Also I had some exposures on other techniques like SEM, TEM, Immunofluorescence microscopy, Confocal microscopy, Zetasizer analysis and RT-PCR. |