

BTY114:CELL BIOLOGY LABORATORY

L:0 T:0 P:3 Credits:2

Course Outcomes: Through this course students should be able to

CO1 :: enumerate the quantitative cell counting techniques and qualitative analysis of cell morphology across different biological samples

CO2 :: proficiently perform MTT assays for assessing cell viability through quantitative colorimetric analysis

CO3 :: establish practical skills in the isolation of chloroplasts

CO4 :: experiment the different microscopic techniques for the observation and identification of human cheek epithelial cells

CO5 :: evaluate the presence of mitochondria in human cheek epithelial cells using Janus green staining, facilitating visual identification and characterization of cellular organelles

CO6 :: plan to isolate and visualize egg lipids to understand their composition and structure through biochemical techniques

List of Practicals / Experiments:

Cell Counting

- Counting of yeast /bacterial cells using a Neubauer chamber

Blood Cells

- study of morphology of blood cells

Cell viability assay

- MTT assay for evaluation of cell viability

Isolation of organelles

- isolation of chloroplasts

Visualization of chloroplast

- Visualize chloroplast under microscope

Epithelial Cells

- observation of human cheek epithelial cells

Mitochondria

- determine the presence of mitochondria in human cheek epithelial cells by janus green staining

Lipid isolation

- isolation of egg lipids

Mini Project 1

- Comparative assessment of chloroplasts in stressed and non-stressed plants

Mini Project 2

- TLC profiling of egg lipids from different sources

Text Books:

1. A LABORATORY MANUAL OF CELL BIOLOGY by E.N. WAINDI, UNIVERSITY OF NAIROBI PRESS
2. CELL AND MOLECULAR BIOLOGY: A LAB MANUAL by CHAITANYA K.V, PRENTICE HALL

References:

1. CELL BIOLOGY LAB MANUAL by HABLE WHITNEY, HART PETER, KENDALL HUNT HOME

