**Practical contents**

**Zoo 542 Advanced Cytology 3 (2+1)**

1- **A brief study of the concept of the cell**

A- Basic techniques in cell culture. Biology of the cells in culture, origin and characterization, Choice of material (tissue or embryos) for cell culture to start, introduction about commonly used cell lines (name, origin, source), Commonly used media for cell culture

2- **Cell growth and division**

Cell cycle analysis by FACS, concept and application.

Cellular DNA Content Measurement by staining cells with Propedium iodide and DAPI

3- **Cell cycle regulation**

Cellular DNA Content and Expression of Proliferation-Associated Proteins

4- **The structure of the chromosome**

Protocol for isolation of human metaphase chromosomes,

5- **Nucleic acids**

1- Isolation of genomic DNA from blood using detergent methods.

2-Estimation of quantity and quality of DNA by spectrophotometer and Agarose gel electrophoresis