



Cell Culture Unit Faculty of Pharmacy October 6 University



Unit Management

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Vision

Providing integrative education among various scientific disciplines.

Cooperating with local as well as international scientific and educational institutions.

Building an infrastructure that can support research studies, as well as opportunities and well experience for pre-graduate, post-graduate and foreign interested users.

Mission

Presenting an advanced system for scientific research work.

Educating professionals in the field of scientific research using different types of cancer cell lines.

Objectives of Cell Culture Unit

- ◆ Providing a practical training for pre- and Post-graduate students on human cell line handling and improving their Practical skills.
- ◆ Gaining qualification and expertise in molecular and cancer biology.
- ◆ Acquire the skills and advanced scientific experience in the field of scientific research and cell culture technology.
- ◆ Practical training using Cell Culture Technology for Pharmaceutical and Cell-Based Therapies.

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Cell Culture Unit services

1. Cancer cell line propagation
2. Determination of IC50 and Toxicity testing
3. Drug screening and Development
4. Cytotoxicity Assays
5. Cell *fluorescent* stain applications
6. Immunocytochemistry and immunohistochemistry
7. Comet Assay
8. ELISA

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The proposed training courses and workshops

1. Principle of cancer cell biology.
2. Training on Human Cell Culture Propagation and saving.
3. Mode of cell death and different methods of cytotoxicity.
4. Fluorescent stain and visualization of stained cells.

Cell Culture Unit Facilities

Laminar Flow: Biological Safety Cabinet to provide personnel and environmental protection and working in sterile condition



Inverted microscope: is a microscope with light source useful for observing living cells in culture flask

CO2 incubator: A cell culture *incubator* is designed to maintain a constant temperature and high humidity for the growth of tissue culture cells under



Fluorescent microscope: To allow visualization of fluorescent stained cells

FLUOstar Omega: Is a multimode microplate reader with five detection modes. It utilizes an ultra-fast UV/Vis spectrometer or filters for absorbance as well as highly sensitive filters for all other detection modes. It is the ideal plate reader for life science applications.



Intended learning outcomes (ILOs)

- ◆ Basic aspects of microscopical characteristics of different types of human cancer cell line.
- ◆ Handle and dispose biological samples according to safety guidelines.
- ◆ Principles of cytotoxic agents and their effects on human cell line

- ◆ Conduct research studies, interpret and analyze the obtained data.
- ◆ Analyze and interpret experimental results as well as published literature.
- ◆ Retrieve and evaluate different information to improve professional competencies.
- ◆ Interpret, evaluate and analyze research data.

- ◆ Calculate IC50 and evaluating cytotoxic and safe concentrations for different xenobiotics and natural products.