

# Lab Practical One

## Week 1: Lab Methods and Organelles

<b>Background</b>	<b>2</b>
<b>Microscopic Techniques</b>	<b>2</b>
<b>Organelles and Cytoplasmic Inclusions</b>	<b>2</b>
Labeled Organelle Diagram .....	5
<b>Mitotic Phases</b>	<b>5</b>
<b>Apoptosis Events</b>	<b>5</b>
<b>Features and Functions</b>	<b>6</b>

# Week 1: Lab Methods and Organelles

## Background

- **Describe The steps in Tissue Preparation for microscopy:**
  - Fixation:
  - Embedding:
  - Staining:
- **What does H & E Stain?**
- **What does PAS Stain?**
- **Describe Enzyme Histochemistry.**
- **How does Immunohistochemistry work?**

## Microscopic Techniques

- **Bright field:**
- **Phase contrast:**
- **Confocal:**
- **Fluorescent:**
- **Scanning Electron Microscopy:**
- **Transmission Electron Microscopy:**

## Organelles and Cytoplasmic Inclusions

- **Nucleolus**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Nucleolus**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Plasma Membrane**
  - Structure:
  - Size:

- Light Microscopic Features:
- Function:
- **rER**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **sER**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Golgi Apparatus**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Secretory Vesicles**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Mitochondria**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Endosomes**
  - Structure:
  - Size:
  - Light Microscopic Features:

- Function:
- **Lysosomes**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Peroxisomes**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Cytoskeletal Elements**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Ribosomes**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Glycogen**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:
- **Lipid Droplets**
  - Structure:
  - Size:
  - Light Microscopic Features:
  - Function:

## Labeled Organelle Diagram

○

## Mitotic Phases



○



○



○



○



○

## Apoptosis Events

- DNA fragmentation:
- Decrease of cell volume:
- Membrane Blebbing:
- Formation of apoptotic bodies:

## Features and Functions

- **Stratified squamous epithelium:**

- Features:
- Functions:

- **Simple cuboidal epithelium:**

- Features:
- Functions:

- **Skeletal muscle:**

- Features:
- Functions:

- **Cardiac muscle:**

- Features:
- Functions:

- **Smooth muscle:**