

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

1. CELL I

Slides:

1. cell nucleus and cytoplasm (liver cells, H & E stain)
2. nuclear DNA (liver cells, Feulgen reaction)
3. Golgi apparatus (dorsal root ganglia, chromium-silver impregnation)
4. cytoplasmic glycogen (liver cells, PAS stain)

Micrographs:

1. biological membrane (freeze-fracture replica, thin section)
2. nucleus
 - a. heterochromatin
 - b. nucleolus
 - c. nuclear envelope with pores
3. nuclear envelope with pores (freeze fracture)
4. smooth & rough endoplasmic reticulum
5. dictyosome

2. CELL II

Slides:

1. mitochondria (liver cells, thin section, toluidine blue)
2. peroxisomes (liver cells, histochemical reaction for catalase)
3. lysosomes (liver cells, histochemical reaction for acid phosphatase)

Micrographs:

1. lamellar mitochondrion
 - a. mitochondrial membranes
 - b. dense bodies
2. mitochondrial cristae, mitochondrial particles, (negative staining)
3. tubular mitochondria (general view)
4. lamellar mitochondria (general view)
5. coated pits with clathrin cages (freeze-fracture, deep etching, rotary shadowing)
6. lysosomes & peroxisomes (histochemical reactions)
7. lysosomes
8. centrioles, mitotic spindle, chromosomes
9. centriole (cross section)

3. EPITHELIAL TISSUE

Slides:

1. simple squamous epithelium
2. simple cuboidal epithelium
3. simple cuboidal epithelium (PAS stain)
 - a. basal membrane
 - b. brush border
4. simple columnar epithelium
 - a. brush border

HISTOLOGY LAB

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

- b. junctional! complexes
- 5. intestinal epithelium a goblet cells
- 6. simple columnar ciliated epithelium
- 7. stratified squamous epithelium
- 8. transitional epithelium

Micrographs:

- 1. gap junction (freeze-fracture, negative staining)
- 2. tight junction (freeze-fracture, thin section)
- 3. basal lamina
- 4. microvilli with actin skeleton (freeze fracture, deep etching, rotary shadowing)
- 5. cilia (longitudinal section; cross section)
- 6. cilia and microvilli (scanning electron micrograph)
- 7. brush border (longitudinal section; cross section)
- 8. cilia (cross section)
- 10. stereocilia (thin sections, transmission electron micrograph; scanning electron micrograph)
- 11. junctional complex (zonula occludens, zonula adherens, desmosomes)
- 12. desmosomes & hemidesmosomes

4. CONNECTIVE TISSUE

Slides:

- 1. mesenchyme
- 2. loose connective tissue (mesentery) a. collagen fibers b. elastic fibers
- 3. reticular fibers (lymph node silver impregnated)
- 4. fibroblasts (cell culture)
- 5. mast cells (mesentery, metachromatic staining)
- 6. macrophages (from peritoneal fluid)
- 7. adipose tissue (mesentery, lipids stained)
- 8. adipose tissue (skin, lipids dissolved)
- 9. tendon (cross section)

Micrographs:

- 1. collagen fibrils
- 2. plasma cell
- 3. macrophage
- 4. mast cell

5. CARTILAGE & BONE

Slides:

- 1. hyaline cartilage
- 2. elastic cartilage

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

3. compact bone (longitudinal section)
4. compact bone (ground longitudinal section)
5. compact bone (cross section)
6. compact bone (ground cross section)
7. intramembranous ossification
 - a. trabeculae
 - b. osteoblasts
 - c. osteoclasts
8. endochondral ossification
 - a. growth plate zones

Micrographs:

1. chondroblasts
2. osteoblast
3. osteocyte
4. osteoclast with ruffled border

6. BLOOD & BONE MARROW

Slides:

1. blood smear
 - a. erythrocytes
 - b. neutrophils
 - c. eosinophils
 - d. basophils
 - e. lymphocytes
 - f. monocytes
2. bone marrow smear
 - a. erythropoietic cells
 - b. granulopoietic cells

Micrographs:

1. monocyte
2. blood platelet
3. megakaryocyte
4. eosinophil
5. neutrophil

7. MUSCLE

Slides:

1. smooth muscle membrane
2. skeletal muscle (isolated fibers)
3. skeletal muscle (cross section)
 - a. muscle fibers
 - b. arteries
 - c. nerve bundles
4. cardiac muscle (longitudinal section)
 - a. conductive system cells

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

5. cardiac muscle (cross section)

Micrographs:

1. smooth muscle cell
 - a. dense bodies
 - b. caveolae
2. skeletal muscle fiber (low power)
3. skeletal muscle fiber
 - a. sarcomeres
 - c. T tubules
 - d. sarcoplasmic reticulum
4. cardiac muscle (low power)
5. cardiac muscle a. sarcomeres
6. cardiac muscle (thin section, freeze-fracture)
 - a. intercalated disk

8. NERVOUS TISSUE & SYSTEM

1. ventral horn motoneurons (Nissl bodies stained)
2. spinal cord (cross section, stained for myelin & motoneurons)
3. isolated nerve fibers
 - a. Ranvier nodes
4. peripheral nerve (cross section)
5. dorsal root ganglion
 - a. pseudounipolar cells
 - b. satellite cells
6. cerebellar cortex
 - a. Purkinje cells
7. cerebral cortex
8. glial cells (astrocytes)

Micrographs

1. fragment of perikaryon
 - a. Nissl bodies
2. myelinated peripheral nerve fibers a. nodes
3. myelinated nerve fiber (cross section)
4. myelinated nerve fibers
 - a. Schwann cell nucleus
5. Schwann cell
 - a. unmyelinated nerve fibers
 - b. myelinated nerve fibers
6. synapses
 - a. presynaptic region
 - b. postsynaptic region

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

9. VASCULAR SYSTEM

Slides:

1. mesentery vessels
 - a. capillaries
 - b. precapillaries
 - c. postcapillaries
2. artery & vein
3. aorta
4. muscular artery (elastic lamina stained)
5. elastic artery (elastic element stained)
6. inferior vena cava
7. saphenous vein

Micrographs:

1. continuous capillary
2. fenestrated capillary
3. continuous capillary and pericyte
4. arteriole
 - a. endothelium
 - b. smooth muscle cells
5. elastic artery
 - a. elastic membranes
 - b. smooth muscle cells
 - c. collagen fibers

10. LYMPHATIC SYSTEM

Slides:

1. lymph node
 - a. cortex
 - b. lymphoid nodules
 - c. germinal centers
 - d. subcapsular sinuses
 - e. medullary cords
2. lymph node (silver impregnated)
 - a. reticular fibers
3. thymus
 - a. cortex
 - b. medulla
 - c. thymic (Hassall's) corpuscles
4. spleen
 - a. trabecular arteries
 - b. trabecular veins
 - c. white pulp (lymphoid nodules)
 - d. central artery
 - e. red pulp
5. spleen (silver impregnated)

HISTOLOGY LAB

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

- a. reticular fibers
 - b. b. sinusoids
6. palatine tonsil
- a. epithelial crypts
 - b. lymphoid tissue

Micrographs

- 1. lymph node a. high endothelial venule
- 2. thymus (low power)

11. RESPIRATORY SYSTEM

Slides:

- 1. olfactory mucosa,
 - a. epithelium
 - b. Bowman's glands
 - c. olfactory nerve bundles
- 2. trachea
 - a. wall layers (3)
 - b. membranous part
 - c. tracheal glands
- 3. lung
 - a. bronchi
 - b. bronchioles
 - c. respiratory bronchioles
 - d. bronchial & bronchiolar wall layers
 - e. pulmonary vessels

Micrographs:

- 1. air-blood barrier
 - a. pneumocyte type I
 - b. capillary
- 2. pneumocyte type II
- 3. fragment of air-blood barrier
- 4. alveolar macrophage

12. DIGESTIVE SYSTEM I

Slides:

- 1. lip
 - a. vermilion (red) zone
 - b. labial mucosa
 - c. labial glands
- 2. filiform papillae (tongue)
- 3. circumvallate (vallate) papillae (tongue)
 - a. von Ebner's (serous) glands
- 4. foliate papillae (tongue)
 - a. taste buds

HISTOLOGY LAB

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

5. submandibular gland
 - a. serous demilunes
 - b. mucous tubules
 - c. intercalated ducts
 - d. striated ducts
 - e. interlobular ducts
6. sublingual gland
 - a. mucous tubules
 - b. intercalated ducts
 - c. striated ducts
 - d. interlobular ducts
7. parotid gland
 - a. serous acini
 - b. intercalated ducts
 - c. striated ducts
 - d. interlobular ducts

Micrographs:

1. serous cells (salivary gland)
2. mucous cells (salivary gland)
3. taste buds

13. DIGESTIVE SYSTEM II

Slides:

1. esophagus
 - a. layers
 - b. esophageal glands
2. stomach (fundus)
 - a. wall layers
 - b. surface epithelium
 - c. gastric pits
 - d. gastric glands
3. stomach (pylorus)
 - a. pyloric glands
4. jejunum
 - a. wall layers
 - b. villi
 - c. intestinal glands (crypts)
 - d. ganglionic cells (Auerbach's plexus)
5. intestinal villi (cross section)
 - a. enterocytes
 - b. goblet cells
 - c. villous stroma
6. duodenum
 - a. wall layers
 - b. villi
 - c. duodenal glands

HISTOLOGY LAB

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

- d. ganglionic cells (Auerbach's plexus)
- 7. ileum
 - a. Peyer's patches
- 8. large intestine
 - a. wall layers
- 9. appendix
 - a. crypts
 - b. lymphoid tissue

Micrographs:

- 1. gastric surface epithelium (apex)
- 2. parietal cell (gastric gland)
- 3. intestinal epithelium
 - a. enterocytes
 - b. goblet cell
- 4. intestinal crypt (bottom)
 - a. Paneth cell

14. LARGE GLANDS OF THE DIGESTIVE TRACT

Slides:

- 1. pancreas
 - a. acini
 - c. intercalated ducts
 - d. interlobular ducts
 - e. islets
- 2. liver (porcine)
 - a. liver trabeculae
 - b. central vein
 - c. triad
 - 1) interlobular artery
 - 2) interlobular vein
 - 3) bile duct
- 3. liver (human)
 - a. liver trabeculae
 - b. central vein
 - c. triad
 - 1) interlobular artery
 - 2) interlobular vein
 - 3) bile' duct
- 4. liver (silver impregnated)
 - a. reticular fibers
- 5. liver (blood vessels injected with stain)
 - a. sinusoids
 - b. central vein
 - c. perilobular vessels
 - d. interlobular vessels
 - e. sublobular vein

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

Micrographs:

1. hepatocytes (low power)
2. vascular pole (hepatocyte)
3. biliary pole (hepatocyte)
4. exocrine cell (pancreas)
5. centroacinar cells (pancreas)

15. URINARY SYSTEM

Slides:

1. kidney
 - a. cortex
 - 1) renal corpuscle
 - a) glomerulus
 - b) Bowman's capsule
 - c) vascular pole
 - d) urinary pole
 - 2) labyrinth
 - a) proximal tubule
 - b) distal tubule
 - 3) macula densa
 - 4) medullary ray
 - b. medulla
 - 1) collecting tubule
2. ureter
 - a. wall layers
3. urinary bladder
 - a. transitional epithelium (urothelium)

Micrographs:

1. filtration barrier (low power)
2. filtration barrier (high power)
 - a. fenestrated endothelium
 - b. basement membrane
 - c. podocyte processes
3. proximal tubule cells
4. transition between proximal tubule and descending thin limb
5. distal tubule cells
6. collecting duct cells
7. juxtaglomerular cells

16. MALE REPRODUCTIVE SYSTEM

Slides:

1. testis
 - a. seminiferous tubules
 - b. interstitial (Leydig) cells
 - c. rete testis
2. epididymis
 - a. vasa (ductuli) efferentes

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

- b. vas (ductus) epididymidis
- 3. vas (ductus) deferens
 - a. ampulla
 - b. free part
 - c. inguinal part
- 4. prostate

Micrographs:

- 1. spermatozoon (scheme)
- 2. spermatozoon tail (cross sections)
- 3. spermatids
 - a. intercellular bridges
 - b. acrosomal vesicles
- 4. seminiferous tubule a. tunica propria
- 5. Sertoli (supporting) cell
- 6. interstitial (Leydig) cell

17. FEMALE REPRODUCTIVE SYSTEM I

Slides:

- 1. ovary (rabbit)
 - a. primordial follicles
 - b. growing follicles
 - c. mature (Graafian) follicles
 - d. oocytes
 - e. zona pellucida
 - f. membrana granulosa
 - g. theca folliculi
 - h. atretic follicles
 - i. corpus luteum
- 2. ovary (human)
 - a. mature follicles
 - b. corpus luteum
 - c. atretic follicles
- 3. oviduct a. wall layers
- 4. uterus (fundus)
 - a. endometrium
 - 1) glands
- 5. uterus (cervix)
 - a. glands
- 6. vagina
 - a. wall layers

Micrographs:

- 1. primary ovarian follicle
 - a. oocyte
 - b. zona pellucida
 - c. follicular cells

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

2. lutein cell (cytoplasm)
 - a. tubular mitochondria
 - b. smooth endoplasmic reticulum
3. oviduct (surface epithelium, scanning electron micrograph)

18. ACCESSORY ORGANS OF THE FEMALE REPRODUCTIVE TRACT

Slides:

1. placenta (term)
 - a. villi
 - b. basal plate
2. placenta (1st trimester)
3. fetal membranes
4. umbilical cord
5. mammary gland (prepubertal)
6. mammary gland (lactating)
7. vaginal smear

Micrographs:

1. placental barrier (low power)
 - a. syncytiotrophoblast
 - b. capillary
2. fragment of syncytiotrophoblast
3. Hofbauer cell
4. mammary gland cell (actively secreting]

19. TEETH

Slides:

1. tooth (cross section)
 - a. pulp
 - a. odontoblast layer

 - b. c. periodontal ligaments
2. tooth (ground section)
 - a. enamel
 - b. dentin
 - c. cementum

20. ENDOCRINE SYSTEM (part I and II)

Slides:

1. pituitary
 - a. adenohypophysis (pars distalis) (anterior lobe) cell types
 - b. neurohypophysis (pars nervosa) (posterior lobe)
2. thyroid
3. adrenal

HISTOLOGY LAB

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

- a. cortical zones
- b. medulla
4. parathyroid
5. pineal
6. pancreas a. islets
7. diffuse neuroendocrine system (DNES), or amine precursor uptake and decarboxylation (APUD) cells (digestive tract, special stain)

Micrographs:

1. chromophils (pituitary)
2. follicular cells (thyroid)
 - a) resting phase
 - b) active phase
3. parafollicular cells (C-cells) (thyroid)
4. steroid-producing cell (cytoplasm)
5. light & dark chief cells (parathyroid)
6. oxyphils (parathyroid)
7. A-cells & D-cells (pancreatic islet)
8. B-cell (pancreatic islet)
9. DNES (APUD) cells

21 THE EAR .Lecture only

.

22. SKIN (INTEGUMENT)

Slides:

1. thick skin (fingertip)
 - a. epidermal layers
 - b. dermal papillae
 - c. Meissner's corpuscles
 - d. Pacinian corpuscles
 - e. sweat glands
 - 1) secretory ducts
 - 2) excretory ducts
2. papillary ridges (fingertip)
3. heavily pigmented skin (trunk of Black person)
4. skin (back)
 - c. hair follicles
 - d. b. sebaceous glands
5. skin (axilla)
 - a. apocrine glands
6. skin (scalp)
 - a. hair follicles
 - b. hair bulbs
 - c. sebaceous glands
 - d. arrector pili
7. skin (scalp, cross section through hair follicles)

LIST OF MICROSCOPE SLIDES & ELECTRON MICROGRAPHS

Micrographs:

1. Langerhans cell (epidermis)
2. Langerhans cell (cytoplasm)
 - a. vermiform (Birbeck's) granules
3. Merkel cell (epidermis)

23. EYE

1. eye (anterior part)
 - a. sclero-corneai junction
 - b. choroid
 - c. ciliary bodies
 - 1) processes
 - 1) epithelium
 - d. iris
 - e. lens
 - 1) capsule
 - 2) epithelium
 - 3) equatorial zone
 - f. zonular fibers (ligament)
 - g. Schlemm's canal (scleral venous sinus)
2. eye (posterior part)
 - a. retinal layers (10)
 - b. optic nerve
 - c. retinal vessels
3. eyelid
 - a. Meibomian (tarsal) glands
 - b. Moll's (ciliary sweat) glands
 - c. conjunctiva

Micrographs:

1. photoreceptors (outer segments)
 - a. rod
 - b. cone
2. lens fibers
3. ciliary body (epithelium)
 - a. nonpigmented cell layer
 - b. pigmented cell layers