

Common details: blood vessels, nerve trunks, ganglions, adipose tissue, lymphocytes

Outer lining of the organs: ADVENTITIA (connective tissue) or
Serosa (thin layer of connective tissue lined by simple squamous
epithelium-mesothelium)

ENDOCRINE SYSTEM

47. Hypophysis (pituitary gland)-rat and human (H&E)

Details:

1. Adenohypophysis - distal lobe, intermediate lobe (cysts- human; space- rat),
tuberal lobe
 - basophils
 - acidophils
 - chromophobes
 - sinusoids
2. Neurohypophysis - neural lobe, pituitary stalk
 - neuroglial cells (pituicytes)
 - numerous axons
 - sinusoids

91. Pineal gland (H&E)

Details:

1. Capsule- pia matter
2. Recess of the third ventricle (ependymocytes)
3. Pinealocytes
4. Glial cells
5. Glial areas
6. Sinusoids

48. Adrenal glands (H&E)

Details:

1. Connective tissue capsule
2. Cortex
 - zona glomerulosa
 - zona fasciculata
 - zona reticularis
 - sinusoids
3. Medulla
 - large basophilic cells
 - central medullary vein
 - sinusoids

46. Thyroid gland (H/E)

Details:

1. Connective tissue capsule
2. Follicles
 - colloid
 - lining - simple cuboidal epithelium

93. Parathyroid gland (H&E)

1. Pseudoalveoli (without colloid)

RESPIRATORY SYSTEM

71. Lung (H&E)

Details:

1. Bronchi
 - mucosa: pseudostratified ciliated columnar epithelium with goblet cells
lamina propria of the mucosa
smooth muscle - Reissesen's membrane
 - submucosa- hyaline cartilage
2. Bronchiols
 - mucosa: pseudostratified ciliated columnar epithelium with goblet cells
lamina propria of the mucosa
smooth muscle- Reissesen's membrane
3. Terminal bronchioles- longitudinal section
 - terminal bronchioles (lining - simple cuboidal epithelium)
 - respiratory bronchioles
 - alveolar ducts
 - alveolar sacs

71E. Lung (eosin + paraaldehyde fuchsin)

Details: all details from **71** + elastic fibers in the wall of:

- bronchi
- bronchioles
- alveoli
- arteries

DIGESTIVE SYSTEM I

29M. Tongue (Masson-Lille staining)

Details:

1. Filiform papillae (stratified squamous keratinized epithelium)
2. Connective tissue (blue color)
3. Skeletal muscle- cross and longitudinal section
4. Endomysium and perimysium
5. Ebner's gland (serous)
6. Mucus gland

54b. Circumvallate papillae of the tongue (H/E)

Details:

1. Circumvallate papillae:
 - stratified squamous nonkeratinized epithelium
 - secondary papillae
 - taste buds
2. Serous Ebner's gland:
 - secretory portions
 - excretory ducts
3. Mucous glands:
 - secretory portions
 - excretory ducts

55. Parotid gland (H/E)

Details:

1. Lobules
2. Serous acini
3. Intralobular ducts (intercalated and striated ducts)
4. Interlobular ducts
5. Main duct

56/57. Sublingual and submandibular glands (H/E)

Details:

1. Parotid gland
2. Submandibular gland:
 - serous acini
 - mucous tubules
 - serous demilunes
 - ducts
3. Sublingual gland:
 - mucous tubules
 - serous demilunes
 - ducts
4. Lymph node

58. Esophagus (H/E)

Details:

1. Mucosa
 - stratified squamous keratinized epithelium
 - lamina propria
 - muscularis mucosa
2. Submucosa
3. Muscularis – 2 smooth muscle layers (circular and longitudinal)
 - Auerbach's plexus
4. Serosa

59. Body of the stomach (H/E)

Details:

1. Simple columnar epithelium of the mucosa
 - gastric pits
 - gastric areas
2. Lamina propria of the mucosa – gastric glands
 - mucous cells
 - parietal cells
 - chief cells
3. Muscularis mucosa
4. Submucosa
5. Muscularis – 3 smooth muscle layers (oblique, circular, longitudinal)
 - Auerbach's plexus
6. Serosa

63. Duodenum (H/E)

Details:

1. Mucosa: villi & crypts
 - simple columnar epithelium (enterocytes)
 - goblet cells
 - lymphocytes
2. Submucosa: mucus secreting Brunner's gland
3. Muscular membrane - 2 smooth muscle layers (circular, longitudinal)
 - Auerbach's plexus- ganglion cells between two muscle layers
4. Adventitia/serosa

DIGESTIVE SYSTEM II

12. Jejunum (H/E)

Details:

1. Mucosa: villi & crypts
 - simple columnar epithelium (enterocytes)
 - goblet cells
 - lymphocytes
1. Submucosa
2. Muscularis – 2 smooth muscle layers (circular, longitudinal)
3. Serosa
4. Nerve plexuses:
 - Meissner's – submucosa
 - Auerbach's (myenteric) - between two muscle layers

60. Colon (H/E)

Details:

1. Mucosa - simple columnar epithelium, crypts, goblet cells, muscularis mucosa
2. Submucosa
3. Muscularis – 2 smooth muscle layers
 - circular (continuous)
 - longitudinal (discontinuous) – as 3 bands (taeniae coli)
4. Serosa
5. Nerve plexuses

64. Appendix (H/E)

Details:

1. Mucosa (simple columnar epithelium, crypts, goblet cells)
2. Lymphatic nodules, lymphoid epithelium
3. Muscularis – 2 smooth muscle layers (circular, longitudinal)
4. Serosa
5. Nerve plexuses

65. Pig liver (H/E)

Details:

1. Connective tissue capsule
2. Lobules
3. Portal spaces
 - interlobular vein
 - interlobular artery
 - interlobular bile duct
4. Hepatocytes
5. Sinusoids
6. Central vein
7. Sublobular vein

68a. Gall bladder (H/E)

Details:

1. Mucosa (folded)
 - simple columnar epithelium
 - lamina propria
2. Muscularis – smooth muscle layers
3. Adventitia/serosa

69. Pancreas (H/E)

Details:

1. Exocrine components – lobules
 - serous acini
 - intralobular ducts (intercalated ducts)
 - interlobular ducts
2. Endocrine components – islets of Langerhans

URINARY SYSTEM

8. Kidney (H/E)

Details:

1. CORTEX
 - **cortical labyrinth** - renal corpuscles, proximal convoluted tubules, distal convoluted tubules
 - **medullary rays** - collecting tubules
- Renal corpuscle
 - Bowman's capsule
 - glomerulus
 - vascular pole (afferent arteriole & efferent arteriole)
 - **macula densa** of the distal convoluted tubules
 - urinary pole (proximal convoluted tubule)
2. MEDULLA
 - thin segment of the loop of Henle (simple squamous epithelium)
 - collecting tubule (simple cuboidal epithelium)
3. Calyx (transitional epithelium)
4. Vessels
 - interlobular vessels in the cortex
 - arcuate vessels on the border between cortex and medulla
 - vasa recta in the medulla

73. Kidney injected with Indian Ink (vascular bed)

Details:

1. Glomeruli
2. Afferent and efferent arterioles
3. Peritubular capillaries
4. Interlobular vessels
5. Arcuate vessels
6. Vasa recta

74. Urinary bladder (H/E)

Details:

1. Mucosa
 - transitional epithelium with umbrella cells
 - lamina propria of the mucosa (connective tissue)
2. Muscularis (smooth muscle cells)
3. Serosa/adventitia

MALE REPRODUCTIVE SYSTEM

75. Testis (H/E)

Details:

1. Tunica albuginea
2. Seminiferous tubules
 - tunica (lamina) propria
 - spermatogonia
 - primary spermatocytes
 - secondary spermatocytes / spermatids
 - spermatozoa
3. Leydig cells
4. Mediastinum
5. Straight tubules
6. Rete testis

76. Epididymis (H/E)

Details:

1. Efferent ductules (pseudostratified epithelium that contains clumps of cuboidal cells with microvilli and columnar ciliated cells)
2. Epididymal duct (pseudostratified columnar epithelium with stereocilia)

77. Ductus deferens (H/E)

Details:

1. Mucosa (folded) lined with pseudostratified columnar epithelium
2. Muscularis- 2 layers of smooth muscle cells
3. Adventitia

4L. Prostate - main prostatic glands (H/E)

Details:

1. Stroma build of dense connective tissue and some smooth muscle cells
2. Secretory portion of the main glands - folded (simple columnar or pseudostratified epithelium)
3. Ducts of the main glands- smooth (simple cuboidal epithelium)
4. Corpora amylacea

96. Penis (H/E)

Details:

1. Skin
 - dorsal artery
2. Tunica albuginea
3. Corpora cavernosa (cavernous spaces and trabeculae)
 - deep artery
 - fibrous septum
4. Urethra (stratified columnar/cuboidal epithelium)
5. Corpus spongiosum

FEMALE REPRODUCTIVE SYSTEM I

78. Ovary (H/E)

Details:

1. Simple cuboidal epithelium – „germinal epithelium”
2. Tunica albuginea
3. Ovarian follicles
 - primordial follicle
 - primary follicle
 - secondary (antral) follicle
 - Graafian (mature) follicle
 - oocyte
 - zona pellucida
 - corona radiata
 - cumulus oophorus
 - antrum
 - granulosa cells
 - theca interna & externa
4. Atretic follicles
5. Interstitial gland

78a. Corpus luteum (H/E)

Details:

1. Corpus luteum
 - lutein cells (granulosa lutein cells)
 - paralutein cells (theca lutein cells)
2. Ovarian follicles

79. Oviduct (fallopian tube)(H/E)

Details:

1. Mucosa (very folded)
 - simple columnar epithelium
 - sections through the folds
 - venous plexus
6. Muscularis – 2 smooth muscle layers (circular, longitudinal)
2. Serosa

80. Uterus (H/E)

Details:

1. Mucosa (endometrium)
 - simple columnar epithelium
 - uterine glands (simple cuboidal epithelium)
2. Muscularis – 2 smooth muscle layers (circular, longitudinal)
3. Serosa

FEMALE REPRODUCTIVE SYSTEM II

84. Placenta (H/E)

Details:

1. Chorionic plate
 - amniotic epithelium (simple cuboidal epithelium)
 - extraembryonic mesodermal cells
 - cytotrophoblast
 - syncytiotrophoblast
2. Stem villi
3. Villi
 - syncytiotrophoblast
 - syncytial knots
 - vasculosyncytial membranes
4. Intervillous space (maternal blood)
5. Anchoring villi
6. Placental septum
7. Basal plate (decidua)
 - decidual cells
 - syncytiotrophoblast
8. Fibrinoid

15. Umbilical cord (H/E)

Details:

1. Amniotic epithelium (simple cuboidal epithelium)
2. Stroma – Wharton's jelly (mucous connective tissue)
3. Atypical muscular vessels – 2 arteries and 1 vein

89/89b. Mammary gland - active/nonactive (H/E)

Details:

1. Secretory alveoli
2. Excretory ducts
 - intralobular (simple cuboidal epithelium)
 - interlobular (simple cuboidal or columnar epithelium)
 - lactiferous sinuses (bilayer columnar epithelium)
3. Stroma (connective tissue)