



Leslie P. Gartner
James L. Hiatt

Color Atlas of Histology

Fourth Edition



LIPPINCOTT WILLIAMS & WILKINS

CD Inside!
See back cover for details





Contents

<i>Preface</i>	vii
<i>Acknowledgments</i>	ix

1 The Cell

<i>GRAPHIC 1-1</i> The Cell	6
1-2 The Organelles	7
1-3 Membranes and Membrane Trafficking	8
1-4 Protein Synthesis and Exocytosis	9
<i>PLATE 1-1</i> Typical Cell	10
1-2 Cell Organelles and Inclusions	12
1-3 Cell Surface Modifications	14
1-4 Mitosis, Light and Electron Microscopy	16
1-5 Typical Cell, Electron Microscopy	18
1-6 Nucleus and Cytoplasm, Electron Microscopy	20
1-7 Nucleus and Cytoplasm, Electron Microscopy	22
1-8 Golgi Apparatus, Electron Microscopy	23
1-9 Mitochondria, Electron Microscopy	24

2 Epithelium and Glands

25

<i>GRAPHIC 2-1</i> Junctional Complex	30
2-2 Salivary Gland	31
<i>PLATE 2-1</i> Simple Epithelia and Pseudostratified Epithelium	32
2-2 Stratified Epithelia and Transitional Epithelium	34
2-3 Pseudostratified Ciliated Columnar Epithelium, Electron Microscopy	36
2-4 Epithelial Junctions, Electron Microscopy	38
2-5 Glands	40
2-6 Glands	42

3 Connective Tissue

45

<i>GRAPHIC 3-1</i> Collagen	52
3-2 Connective Tissue Cells	53
<i>PLATE 3-1</i> Embryonic and Connective Tissue Proper I	54
3-2 Connective Tissue Proper II	56
3-3 Connective Tissue Proper III	58



Cartilage and Bone

65

<i>GRAPHIC</i>	4-1	Compact Bone	72
	4-2	Endochondral Bone Formation	73
<i>PLATE</i>	4-1	Embryonic and Hyaline Cartilages	74
	4-2	Elastic and Fibrocartilages	76
	4-3	Compact Bone	78
	4-4	Compact Bone and Intramembranous Ossification	80
	4-5	Endochondral Ossification	82
	4-6	Endochondral Ossification	84
	4-7	Hyaline Cartilage, Electron Microscopy	86
	4-8	Osteoblasts, Electron Microscopy	87
	4-9	Osteoclast, Electron Microscopy	88



Blood and Hemopoiesis

89

<i>PLATE</i>	5-1	Circulating Blood	95
	5-2	Circulating Blood	96
	5-3	Blood and Hemopoiesis	97
	5-4	Bone Marrow and Circulating Blood	98
	5-5	Erythropoiesis	100
	5-6	Granulocytopoiesis	101



Muscle

103

<i>GRAPHIC</i>	6-1	Molecular Structure of Skeletal Muscle	108
	6-2	Types of Muscle	109
<i>PLATE</i>	6-1	Skeletal Muscle	110
	6-2	Skeletal Muscle, Electron Microscopy	112
	6-3	Myoneural Junction, Light and Electron Microscopy	114
	6-4	Myoneural Junction, Scanning Electron Microscopy	116
	6-5	Muscle Spindle, Light and Electron Microscopy	117
	6-6	Smooth Muscle	118
	6-7	Smooth Muscle, Electron Microscopy	120
	6-8	Cardiac Muscle	122
	6-9	Cardiac Muscle, Electron Microscopy	124



Nervous Tissue

125

<i>GRAPHIC</i>	7-1	Spinal Nerve Morphology	132
	7-2	Neurons and Myoneural Junction	133
<i>PLATE</i>	7-1	Spinal Cord	134
	7-2	Cerebellum, Synapse, Electron Microscopy	136
	7-3	Cerebrum, Neuroglial Cells	138
	7-4	Sympathetic Ganglia, Sensory Ganglia	140

7-5	Peripheral Nerve, Choroid Plexus	142
7-6	Peripheral Nerve, Electron Microscopy	144
7-7	Neuron Cell Body, Electron Microscopy	146

8 Circulatory System

147

<i>GRAPHIC</i>	8-1 Artery and Vein	154
	8-2 Capillary Types	155
<i>PLATE</i>	8-1 Elastic Artery	156
	8-2 Muscular Artery, Vein	158
	8-3 Arterioles, Venules, Capillaries, Lymph Vessels	160
	8-4 Heart	162
	8-5 Capillary, Electron Microscopy	164
	8-6 Freeze Etch, Fenestrated Capillary, Electron Microscopy	165

9 Lymphoid Tissue

167

<i>GRAPHIC</i>	9-1 Lymphoid Tissues	175
	9-2 Lymph Node, Thymus, and Spleen	176
	9-3 B Memory and Plasma Cell Formation	177
	9-4 Cytotoxic T Cell Activation and Killing of Virally Transformed Cells	178
	9-5 Macrophage Activation by T_{H1} Cells	179
<i>PLATE</i>	9-1 Lymphatic Infiltration, Lymphatic Nodule	180
	9-2 Lymph Node	182
	9-3 Lymph Node, Tonsils	184
	9-4 Lymph Node, Electron Microscopy	186
	9-5 Thymus	188
	9-6 Spleen	190

10 Endocrine System

193

<i>GRAPHIC</i>	10-1 Pituitary Gland and Its Hormones	201
	10-2 Endocrine Glands	202
	10-3 Sympathetic Innervation of the Viscera and the Medulla of the Suprarenal Gland	203
<i>PLATE</i>	10-1 Pituitary Gland	204
	10-2 Pituitary Gland	206
	10-3 Thyroid Gland, Parathyroid Gland	208
	10-4 Suprarenal Gland	210
	10-5 Suprarenal Gland, Pineal Body	212
	10-6 Pituitary Gland, Electron Microscopy	214
	10-7 Pituitary Gland, Electron Microscopy	215

11 Integument

217

<i>GRAPHIC</i>	11-1 Skin and Its Derivatives	224
	11-2 Hair, Sweat Glands, Sebaceous Glands	225
<i>PLATE</i>	11-1 Thick Skin	226
	11-2 Thin Skin	228



12 Respiratory System

235

<i>GRAPHIC</i>	12-1	Conducting Portion of the Respiratory System	242
	12-2	Respiratory Portion of the Respiratory System	243
<i>PLATE</i>	12-1	Olfactory Mucosa, Larynx	244
	12-2	Trachea	246
	12-3	Respiratory Epithelium and Cilia, Electron Microscopy	248
	12-4	Bronchi, Bronchioles	250
	12-5	Lung Tissue	252
	12-6	Blood-Air Barrier, Electron Microscopy	254



13 Digestive System I—Oral Region

255

<i>GRAPHIC</i>	13-1	Tooth and Tooth Development	260
	13-2	Tongue and Taste Bud	261
<i>PLATE</i>	13-1	Lip	262
	13-2	Tooth and Pulp	264
	13-3	Periodontal Ligament and Gingiva	266
	13-4	Tooth Development	268
	13-5	Tongue	270
	13-6	Tongue and Palate	272
	13-7	Teeth and Nasal Aspect of the Hard Palate	274



14 Digestive System II—Alimentary Canal

277

<i>GRAPHIC</i>	14-1	Stomach and Small Intestine	285
	14-2	Large Intestine	286
<i>PLATE</i>	14-1	Esophagus	288
	14-2	Stomach	290
	14-3	Stomach	292
	14-4	Duodenum	294
	14-5	Jejunum, Ileum	296
	14-6	Colon, Appendix	298
	14-7	Colon, Electron Microscopy	300
	14-8	Colon, Scanning Electron Microscopy	301



15 Digestive System III—Digestive Glands

303

<i>GRAPHIC</i>	15-1	Pancreas	308
	15-2	Liver	309
<i>PLATE</i>	15-1	Salivary Glands	310
	15-2	Pancreas	312
	15-3	Liver	314
	15-4	Liver, Gallbladder	316
	15-5	Salivary Gland, Electron Microscopy	318
	15-6	Liver, Electron Microscopy	320
	15-7	Islet of Langerhans, Electron Microscopy	321

16 Urinary System

323

<i>GRAPHIC</i> 16-1	Uriniferous Tubules	330
16-2	Renal Corpuscle	331
<i>PLATE</i> 16-1	Kidney, Survey and General Morphology	332
16-2	Renal Cortex	334
16-3	Glomerulus, Scanning Electron Microscopy	336
16-4	Renal Corpuscle, Electron Microscopy	337
16-5	Renal Medulla	338
16-6	Ureter and Urinary Bladder	340

17 Female Reproductive System

343

<i>GRAPHIC</i> 17-1	Female Reproductive System	350
17-2	Placenta and Hormonal Cycle	351
<i>PLATE</i> 17-1	Ovary	352
17-2	Ovary and Corpus Luteum	354
17-3	Ovary and Oviduct	356
17-4	Oviduct, Light and Electron Microscopy	358
17-5	Uterus	360
17-6	Uterus	362
17-7	Placenta and Vagina	364
17-8	Mammary Gland	366

18 Male Reproductive System

369

<i>GRAPHIC</i> 18-1	Male Reproductive System	376
18-2	Spermiogenesis	377
<i>PLATE</i> 18-1	Testis	378
18-2	Testis and Epididymis	380
18-3	Epididymis, Ductus Deferens, and Seminal Vesicle	382
18-4	Prostate, Penis, and Urethra	384
18-5	Epididymis, Electron Microscopy	386

19 Special Senses

387

<i>GRAPHIC</i> 19-1	Eye	394
19-2	Ear	395
<i>PLATE</i> 19-1	Eye, Cornea, Sclera, Iris, and Ciliary Body	396
19-2	Retina, Light and Scanning Electron Microscopy	398
19-3	Fovea, Lens, Eyelid, and Lacrimal Glands	400
19-4	Inner Ear	402
19-5	Cochlea	404
19-6	Spiral Organ of Corti	406

Index

409