

Contents

<i>List of contributors</i>		ix
<i>Foreword</i>		xi
<i>Preface</i>		xiii
<i>About the companion website</i>		xv
Chapter 1	Necropsy of the mouse	1
	<i>Lorna Rasmussen and Elizabeth McInnes</i>	
	1.1 Recording of findings	2
	1.2 Bleeding technique	3
	1.3 Perfusion	3
	1.4 External examination	4
	1.5 Weighing of organs	6
	1.6 Positioning of mouse for necropsy and removing the skin	6
	1.7 Opening the abdominal cavity and exposing organs	9
	1.8 Removing the ribcage to expose lungs and heart	17
	1.9 Removing the brain and spinal cord	20
	1.10 Collecting and fixing tissue samples	22
	References	22
Chapter 2	Practical approaches to reviewing and recording pathology data	25
	<i>Cheryl L. Scudamore</i>	
	2.1 Sample selection and trimming patterns	26
	2.2 Controls	28
	2.3 Standardizing terminology	28
	2.4 Microscopic terminology	30
	2.5 Recording pathology data	33
	2.6 Quantitative versus semiquantitative analysis	35
	2.7 Semiquantitative techniques	37
	2.8 Quantitative techniques	38
	References	40
Chapter 3	Gastrointestinal system	43
	<i>Cheryl L. Scudamore</i>	
	3.1 Background and development	43
	3.2 Oral cavity	43

	3.3	Salivary glands	46
	3.4	Stomach and intestines	48
	3.5	Liver	56
	3.6	Pancreas	59
		References	61
Chapter 4		Cardiovascular system	63
		<i>Cheryl L. Scudamore</i>	
	4.1	Background and development	63
	4.2	Sampling techniques and morphometry	63
	4.3	Artefacts	65
	4.4	Anatomy and histology of the heart	67
	4.5	Anatomy and histology of the blood vessels	69
		References	72
Chapter 5		Urinary system	75
		<i>Elizabeth McInnes</i>	
	5.1	Background and development	75
	5.2	Sampling techniques	76
	5.3	Artefacts	76
	5.4	Background lesions	77
	5.5	Anatomy and histology	79
		References	85
Chapter 6		Reproductive system	87
		<i>Cheryl L. Scudamore</i>	
	6.1	Background and development of the male and female reproductive tract	87
	6.2	Female reproductive tract	88
	6.3	Male reproductive tract	97
		References	105
Chapter 7		Endocrine system	109
		<i>Ian Taylor</i>	
	7.1	Introduction	109
	7.2	Adrenals	109
	7.3	Pituitary	114
	7.4	Thyroids and parathyroids	117
		References	121

Chapter 8	Nervous system	123
	<i>Aude Roulois</i>	
	8.1 Introduction	123
	8.2 Necropsy	123
	8.3 Fixation/perfusion	126
	8.4 Trimming	131
	8.5 Special stains and techniques	133
	8.6 Microscopic examination	137
	8.7 Normal histology-juvenile – CNS and PNS	137
	8.8 Artefacts – CNS and PNS	141
	8.9 Pathological changes and background pathology – CNS and PNS	142
	8.10 Acknowledgment	146
	References	146
	Useful website resources	148
Chapter 9	Lymphoid and haematopoietic system	149
	<i>Ian Taylor</i>	
	9.1 Introduction	149
	9.2 Lymph nodes	150
	9.3 Spleen	156
	9.4 MALT (mucosa-associated lymphoid tissue)	160
	9.5 Thymus	161
	9.6 Bone marrow	164
	References	166
Chapter 10	Integument and adipose tissue	169
	<i>Cheryl L. Scudamore</i>	
	10.1 Background and development	169
	10.2 Sampling technique	170
	10.3 Anatomy and histology	171
	References	177
Chapter 11	The respiratory system	179
	<i>Elizabeth McInnes</i>	
	11.1 Background and development	179
	11.2 Embryology	179
	11.3 Anatomy and histology of the respiratory system	180
	11.4 Upper respiratory tract	180
	11.5 Lower respiratory tract	189
	References	193

Chapter 12	Special senses	195
	<i>Cheryl L. Scudamore</i>	
12.1	Background and development	195
12.2	Sampling technique for the eye	195
12.3	Artefacts	197
12.4	Anatomy and histology of the eye and associated glands	199
12.5	Background and development of the ear	204
12.6	Sampling technique for the ear and associated structures	205
12.7	Anatomy and histology of the ear and associated glands	206
	References	209
Chapter 13	Musculoskeletal system	211
	<i>Cheryl L. Scudamore</i>	
13.1	Background and development	211
13.2	Sampling techniques	211
13.3	Anatomy and histology	212
	References	218
Index		221