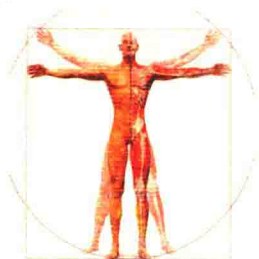


湖北省学术著作出版资金资助项目



COMPLETE ATLASES OF  
BASIC MEDICAL SCIENCE

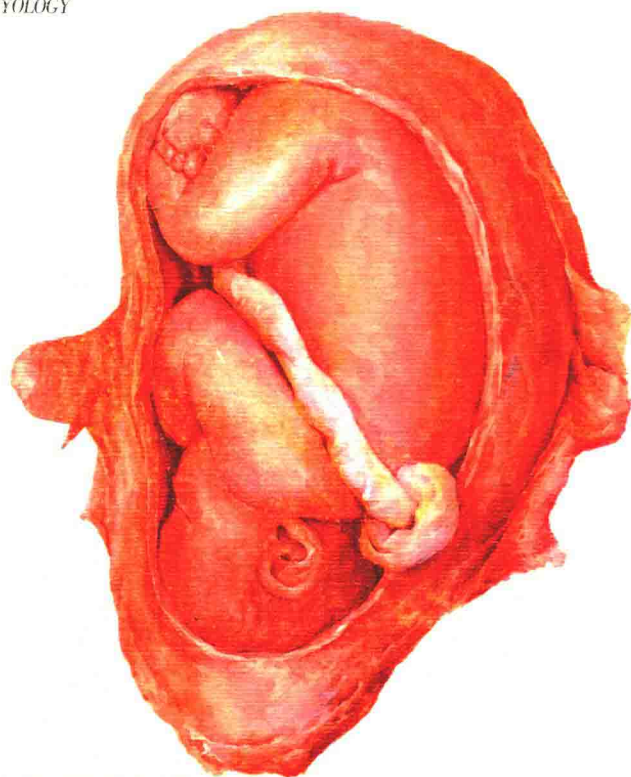
基础医学图谱系列全辑

# 组织胚胎学

## 彩色图谱

主编◎韩秋生 徐国成 康悦

COLOUR ATLAS OF HISTOLOGY AND EMBRYOLOGY



长江出版传媒 湖北科学技术出版社

湖北省学术著作出版资金资助项目



COMPLETE ATLASES OF  
BASIC MEDICAL SCIENCE

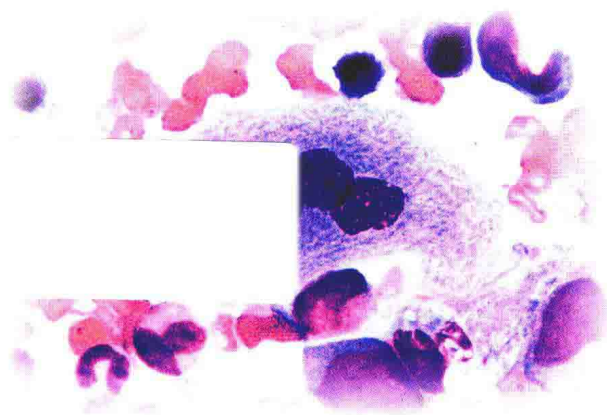
基础医学图谱系列全辑

# 组织胚胎学

彩色图谱

主编◎韩秋生 徐国成 康悦

COLOUR ATLAS OF HISTOLOGY AND EMBRYOLOGY



# 《组织胚胎学彩色图谱》编委会名单

主 审 王 彦  
主 编 韩秋生 徐国成 康 悦  
副 主 编 高俊峰 张 青 郑 玮  
编绘人员 邹卫东 陈 禹 刘 悦 刘 霞 穆长征 徐增志 张国栋 李龙飞 梅 雪  
蔡纪梅 张 永 刘明秋 鄂大治 刘 虹 郑 伟 马江波 冯利强 李军平  
焦旭文 李 虹 王维东 李新华 王 直 曾 亮 张 颖 全春峰 陈 惠  
曹小明 王 玥  
摄 影 李惠波 刘 枫

## 图书在版编目 (CIP) 数据

组织胚胎学彩色图谱 / 韩秋生, 徐国成, 康悦主编. — 武汉:  
湖北科学技术出版社, 2015.10

(基础医学图谱系列全辑)

ISBN 978-7-5352-8069-5

I. ①组… II. ①韩… ②徐… ③康… III. ①人体组织学—  
人体胚胎学—图谱—医学院校—教材 IV. ① R329.1-64

中国版本图书馆 CIP 数据核字 (2015) 第 147796 号

出版发行: 湖北科学技术出版社  
地 址: 武汉市雄楚大街 268 号  
(湖北出版文化城 B 座 13-14 层)  
邮 编: 430070  
联系电话: 027-87679468  
网 址: <http://www.hbstp.com.cn>  
印 刷 者: 辽宁新华印务有限公司  
开本尺寸: 787 × 1092 1/16

字 数: 187 千字  
印 张: 9 插页 4  
出版时间: 2015 年 10 月第 1 版  
印刷时间: 2015 年 10 月第 1 次印刷  
责任编辑: 杨瑰玉  
封面设计: 戴 旻  
版式设计: 徐国成  
定 价: 68.00 元

# 前言

## INTRODUCTION

组织学和胚胎学对高等医学院校学生来说是两门很重要的医学基础课程。人体各系统器官的微细结构和超微结构,是实现各种生理功能和病理改变的形态基础。学习这两门学科,均需在观察形态结构的基础上进行理解、记忆。在课堂上观察组织、器官的微细结构和超微结构,由于时间短、内容多,极易造成印象不深,不利于加深学生的理解和记忆。而观察不同发育时期的幼小入胚标本,又很难体会胎儿在不同生长发育时期形体和器官的变化关系。因此,编绘一部具有科学性、系统性、真实感强的组织胚胎学图谱,就变得非常必要。

组织学、胚胎学近几年发展很快,教学内容也不断地充实和更新。为使图谱的内容适应学科的发展,我们在汇集了我校和兄弟院校成熟的教学经验的基础上,收集了大量的资料和图片,编绘了这部光镜和电镜相结合的《组织胚胎学彩色图谱》。

这部图谱是依据高等医学院校“组织、胚胎

学教学大纲”和高等医学院校“医学专业业务统考大纲”的规定内容进行编绘的。图谱的光镜图像均为彩色,电镜图像均为原版照片。图像清晰、重点突出、真实感强。在图像设计上,吸取了国内外相同学科教材和图谱的精华,构图独特、新颖,是高等医学院校师生必不可少的工具书。对从事科学研究、生理学和病理学的学习以及临床病理观察各种切片也具有极大的参考价值。

在本图谱编绘过程中,我们得到了中国医科大学各级领导的热情支持和鼓励,得到了中国医科大学和各兄弟院校专家学者的亲切指导,在此一并表示谢意。

由于我们编绘水平有限,本图谱若存在不足之处,恳请各界同仁和广大读者不吝指正,以便再版时改进。

韩秋生 徐国成 康悦

2015年9月

# 目录

## CONTENTS

### 组织学 HISTOLOGY

1

|                                                                                                 |    |
|-------------------------------------------------------------------------------------------------|----|
| 1. 单筒型显微镜 Monocular microscope                                                                  | 2  |
| 2. 双筒型显微镜 Binocular microscope                                                                  | 2  |
| 3. 人体结构的研究和组织学观察水平 Research of the structure of human body and the observing level of histology | 3  |
| 4. 标本制作过程 The process of section preparation                                                    | 3  |
| 5. 透射电子显微镜 Transmission electron microscope                                                     | 4  |
| 6. 透射电子显微镜结构图 Diagram of structure of transmission electron microscope                          | 4  |
| 7. 观察示意图 Diagram illustrating observation                                                       | 4  |
| 8. 电镜标本制作过程 Preparation procedure of specimen for electron microscope                           | 5  |
| 9. 卵圆形细胞不同方位的切面图 Different sections of an oval cell                                             | 6  |
| 10. 脊神经的纵(右)、横(左)切面图 Longitudinal (right) and cross (left) sections of spinal nerve             | 6  |
| 11. 一个腺泡的纵横切面图 Longitudinal and cross sections of an acinus                                     | 7  |
| 12. 单层柱状上皮不同方位的切面图 Sections of simple columnar epithelium in different directions               | 7  |
| 13. 管状结构不同方位的切面图 Different sections of a tube-shaped organ                                      | 8  |
| 14. 弓形管状结构不同方位的切面图 Different sections of an arch-shaped tube                                    | 8  |
| 15. 脊神经节细胞微细结构 Microstructure of spinal ganglion cells                                          | 9  |
| 16. 脊神经节细胞的超微结构立体图 Three-dimensional diagram of ultrastructure of spinal ganglion cell          | 9  |
| 17. 细胞器超微结构模式图 Diagram of ultrastructure of organelles                                          | 10 |
| 18. 细胞膜 Cell membrane                                                                           | 11 |
| 19. 细胞质 Cytoplasm                                                                               | 11 |
| 20. 板状嵴线粒体 Mitochondria with laminar cristae                                                    | 11 |
| 21. 管状嵴线粒体 Mitochondria with tubiform cristae                                                   | 11 |
| 22. 高尔基复合体 Golgi complex                                                                        | 12 |
| 23. 高尔基复合体 Golgi complex                                                                        | 12 |
| 24. 粗面内质网 Rough endoplasmic reticulum                                                           | 12 |
| 25. 滑面内质网 Smooth endoplasmic reticulum                                                          | 12 |
| 26. 滑面内质网 Smooth endoplasmic reticulum                                                          | 12 |
| 27. 多核糖体 Polyribosomes                                                                          | 12 |
| 28. 初级溶酶体 Primary lysosomes                                                                     | 13 |
| 29. 次级溶酶体 Secondary lysosomes                                                                   | 13 |
| 30. 多泡体 Multivesicular bodies                                                                   | 13 |

|                                                                                       |    |
|---------------------------------------------------------------------------------------|----|
| 31. 残余体 Residual bodies                                                               | 13 |
| 32. 中心体 Centrosome                                                                    | 13 |
| 33. 环孔板 Annulate lamella                                                              | 13 |
| 34. 小鼠肝细胞内的过氧化物酶体和脂滴 Peroxisomes and lipid droplets of mouse hepatocyte               | 14 |
| 35. 人肝细胞内的糖原颗粒 Glycogen granules of human hepatocyte                                  | 14 |
| 36. 人表皮棘细胞内张力丝 Tonofilaments of spinous cell in the human epidermis                   | 14 |
| 37. 小鼠腱细胞内的波形微丝 Vimentin filaments of mouse tendon cell                               | 14 |
| 38. 胎儿有髓神经纤维的神经丝 Neuro filaments of fetal myelinated nerve fiber                      | 14 |
| 39. 豚鼠内耳支持细胞内的微管 Microtubules of sertoli cell in the guinea pig internal ear          | 14 |
| 40. 小鼠肝细胞核 Nucleus of mouse hepatocyte                                                | 15 |
| 41. 核孔 Nuclear pores                                                                  | 15 |
| 42. 猴神经元的核孔 Nuclear pores of monkey neuron                                            | 15 |
| 43. 核仁 Nucleolus                                                                      | 15 |
| 44. 核仁丝 Nucleolonema                                                                  | 15 |
| 45. 兔内耳椭圆囊斑的毛细胞 Hair cell in macula utriculi of rabbit internal ear                   | 16 |
| 46. 人气管上皮柱状细胞的纤毛 Cilium in epithelial columnar cell of human trachea                  | 16 |
| 47. 肥大细胞的微绒毛 Microvillus of mast cell                                                 | 16 |
| 48. 小鼠小肠上皮吸收细胞的微绒毛 Microvillus in epithelial absorptive cell of mouse small intestine | 16 |
| 49. 兔输卵管上皮细胞的纤毛和微绒毛 Cilium and microvillus of rabbit oviducal epithelium              | 16 |
| 50. 细胞连接 Cell junctions                                                               | 16 |
| 51. 单层柱状上皮 Simple columnar epithelium                                                 | 17 |
| 52. 骨骼肌 Skeletal muscle                                                               | 17 |
| 53. 复层扁平上皮 Stratified squamous epithelium                                             | 17 |
| 54. 神经细胞 Nerve cell                                                                   | 17 |
| 55. 疏松结缔组织 Loose connective tissue                                                    | 17 |
| 56. 神经元的胞体和突起 The soma and processes of a neuron                                      | 17 |
| 57. 单层扁平上皮 Simple squamous epithelium                                                 | 18 |
| 58. 单层立方上皮 Simple cuboidal epithelium                                                 | 18 |
| 59. 单层柱状上皮 Simple columnar epithelium                                                 | 18 |
| 60. 假复层纤毛柱状上皮 Pseudostratified ciliated columnar epithelium                           | 19 |
| 61. 变移上皮 Transitional epithelium                                                      | 19 |
| 62. 非角化复层扁平上皮 Nonkeratinized stratified squamous epithelium                           | 19 |
| 63. 角化复层扁平上皮 Keratinized stratified squamous epithelium                               | 20 |
| 64. 单细胞腺 (杯状细胞) Unicellular gland (goblet cell)                                       | 20 |
| 65. 浆液性腺泡 Serosus acinus                                                              | 20 |
| 66. 黏液性腺泡 Mucous acinus                                                               | 20 |
| 67. 混合性腺泡 Mixed acinus                                                                | 20 |
| 68. 各种腺泡及导管模式图 Diagram showing the different types of acini and ducts                 | 20 |
| 69. 细胞超微结构和细胞连接模式图 Diagram of ultrastructure of cell and cell junction                | 21 |
| 70. 人胃黏膜下层的毛细血管 Submucosal capillary of human stomach                                 | 22 |
| 71. 人子宫内膜螺旋动脉的内皮 Endothelium in spiral artery of human endometrium                    | 22 |
| 72. 人子宫颈腺的单层柱状上皮 Simple columnar epithelium in human cervical gland                   | 22 |
| 73. 胎儿舌黏膜的复层扁平上皮 Stratified squamous epithelium of fetal periglottis                  | 22 |

|                                                                                                 |    |
|-------------------------------------------------------------------------------------------------|----|
| 74. 杯状细胞 Goblet cell                                                                            | 22 |
| 75. 分泌颗粒 Secretory granule                                                                      | 22 |
| 76. 疏松结缔组织铺片 Spreading section of loose connective tissue                                       | 23 |
| 77. 结缔组织内各种细胞 Various cells of connective tissue                                                | 23 |
| 78. 疏松结缔组织切片 Section of loose connective tissue                                                 | 23 |
| 79. 致密结缔组织—真皮 Dense connective tissue—dermis                                                    | 24 |
| 80. 规则致密结缔组织—肌腱 Dense regular connective tissue—tendon                                          | 24 |
| 81. 脂肪组织 Adipose tissue                                                                         | 24 |
| 82. 疏松结缔组织立体结构图 Three-dimensional diagram of structure of loose connective tissue               | 25 |
| 83. 致密结缔组织立体结构图 (肌腱) Three-dimensional diagram of structure of dense connective tissue (Tendon) | 25 |
| 84. 成纤维细胞 Fibroblast                                                                            | 26 |
| 85. 胶原纤维 Collagen fiber                                                                         | 26 |
| 86. 胶原纤维和网状纤维 Collagen fibers and reticular fibers                                              | 26 |
| 87. 浆细胞 Plasma cell                                                                             | 26 |
| 88. 肥大细胞 Mast cell                                                                              | 26 |
| 89. 软骨细胞 Chondrocyte                                                                            | 26 |
| 90. 透明软骨 Hyaline cartilage                                                                      | 27 |
| 91. 纤维软骨 Fibrocartilage                                                                         | 27 |
| 92. 弹性软骨 Elastic cartilage                                                                      | 27 |
| 93. 骨磨片 Bony abrasive section                                                                   | 27 |
| 94. 骨单位的立体结构图 Three-dimensional diagram of structure of the osteon                              | 28 |
| 95. 长骨横切面 Cross section of diaphysis of long bone                                               | 29 |
| 96. 长骨纵切面 Longitudinal section of diaphysis of long bone                                        | 29 |
| 97. 膜内成骨 Intramembranous ossification                                                           | 29 |
| 98. 软骨内成骨 Endochondral ossification                                                             | 29 |
| 99. 初级骨化中心 Primary ossification center                                                          | 29 |
| 100. 软骨周成骨立体结构图 Three-dimensional diagram of structure of perichondral ossification             | 30 |
| 101. 成骨细胞超微结构立体图 Three-dimensional diagram of the ultrastructure of osteoblast                  | 30 |
| 102. 破骨细胞超微结构立体图 Three-dimensional diagram of the ultrastructure of osteoclast                  | 30 |
| 103. 血液涂片 Blood smear                                                                           | 31 |
| 104. 骨髓涂片 Bone marrow smear                                                                     | 31 |
| 105. 血细胞发育演变规律 Development and metastasis of blood cells                                        | 32 |
| 106. 中性粒细胞 Neutrophilic granulocyte                                                             | 33 |
| 107. 嗜酸性粒细胞 Eosinophilic granulocyte                                                            | 33 |
| 108. 嗜碱性粒细胞 Basophilic granulocyte                                                              | 33 |
| 109. 淋巴细胞 Lymphocyte                                                                            | 33 |
| 110. 单核细胞 Monocyte                                                                              | 33 |
| 111. 红细胞和血小板 Erythrocyte and blood platelets                                                    | 33 |
| 112. 三种肌纤维 Three types of muscle fibers                                                         | 34 |
| 113. 骨骼肌纤维纵横切面 Longitudinal and cross sections of skeletal muscle fibers                        | 34 |
| 114. 心肌纤维纵横切面 Longitudinal and cross sections of cardiac muscle fibers                          | 34 |
| 115. 平滑肌纤维纵横切面 Longitudinal and cross sections of smooth muscle fibers                          | 34 |

|                                                                                                                              |    |
|------------------------------------------------------------------------------------------------------------------------------|----|
| 116. 骨骼肌纤维立体结构图 Three-dimensional diagram of structure of skeletal muscle fibers                                             | 35 |
| 117. 一条骨骼肌纤维立体结构图 Three-dimensional diagram of structure of a skeletal muscle fiber                                          | 35 |
| 118. 心肌纤维超微结构立体图 Three-dimensional diagram of ultrastructure of cardiac muscle fibers                                        | 36 |
| 119. 心肌纤维超微结构立体图 Three-dimensional diagram of ultrastructure of cardiac muscle fiber                                         | 36 |
| 120. 浦肯野纤维超微结构立体图 Three-dimensional diagram of ultrastructure of purkinje fiber                                              | 36 |
| 121. 平滑肌纤维超微结构图 Diagram of ultrastructure of smooth muscle fiber                                                             | 37 |
| 122. 平滑肌纤维立体结构图 Three-dimensional diagram of ultrastructure of smooth muscle fiber                                           | 37 |
| 123. 骨骼肌纤维内的肌原纤维 Myofibril of skeletal muscle fiber                                                                          | 38 |
| 124. 骨骼肌纤维内的肌原纤维 Myofibril of skeletal muscle fiber                                                                          | 38 |
| 125. 骨骼肌纤维 Skeletal muscle fiber                                                                                             | 38 |
| 126. 人中动脉中膜的平滑肌纤维 Smooth muscle fibers in tunica media of human medium sized artery                                          | 39 |
| 127. 人小肠壁的平滑肌纤维 Smooth muscle fibers of human small intestinal paries                                                        | 39 |
| 128. 平滑肌纤维内的吞饮泡 Pinocytotic vesicles of smooth muscle fiber                                                                  | 39 |
| 129. 兔心肌纤维 Rabbit cardiac muscle fiber                                                                                       | 39 |
| 130. 闰盘 Intercalated disks                                                                                                   | 39 |
| 131. 神经元微细结构 Microstructure of neuron                                                                                        | 40 |
| 132. 神经胶质细胞微细结构 Microstructure of neuroglial cells                                                                           | 40 |
| 133. 髓鞘切迹和郎飞结的超微结构 Utrastructure of the incisure of myelin and Ranvier node                                                  | 41 |
| 134. 无髓神经纤维立体结构图 Three-dimensional diagram of structure of unmyelinated nerve fiber                                          | 41 |
| 135. 展平的神经膜细胞 (施万细胞) Spread neurolemmal cell (schwann cell)                                                                  | 42 |
| 136. 髓鞘形成示意图 Diagram showing the formation of myelin sheath                                                                  | 42 |
| 137. 无髓神经纤维形成示意图 Diagram showing the formation of unmyelinated nerve fiber                                                   | 42 |
| 138. 有髓神经纤维和无髓神经纤维超微结构立体图 Three-dimensional diagram of ultrastructure of myelinated nerve fiber and unmyelinated nerve fiber | 43 |
| 139. 少突胶质细胞形成髓鞘的立体图 Three-dimensional diagram of formation of myelin sheath of oligodendrocyte                               | 43 |
| 140. 感觉神经末梢 Sensory nerve ending                                                                                             | 44 |
| 141. 运动神经末梢—运动终板 Motor nerve ending—Motor end plate                                                                          | 44 |
| 142. 内脏运动神经末梢 Visceral motor nerve ending                                                                                    | 44 |
| 143. 远距离突触—非突触性化学传递 Distant synapse—non synaptic chemical transmission                                                       | 44 |
| 144. 突触的类型 Types of synapse                                                                                                  | 45 |
| 145. 突触小泡形成和轴突运输示意图 Diagram showing the formation of synaptic vesicle and axonal transport                                   | 45 |
| 146. 脑脊膜模式图 Diagram of meninges                                                                                              | 45 |
| 147. 血—脑屏障模式图 Diagram of blood—brain barrier                                                                                 | 45 |
| 148. 胎儿脊髓前角运动神经元 Motor neuron in anterior horn of fetal spinal cord.                                                         | 46 |
| 149. 胎儿神经纤维 Fetal nerve fibers                                                                                               | 46 |
| 150. 轴—体突触 Axo—somatic synapse                                                                                               | 46 |
| 151. 轴—树突触 Axo—dendritic synapse                                                                                             | 47 |
| 152. 突触小泡 Synaptic vesicles                                                                                                  | 47 |
| 153. 少突胶质细胞 Oligodendrocyte                                                                                                  | 47 |
| 154. 运动终板 Motor end plate                                                                                                    | 47 |
| 155. 小鼠的有髓神经纤维 Mouse myelinated nerve fiber                                                                                  | 47 |

|                                                                                                   |    |
|---------------------------------------------------------------------------------------------------|----|
| 156. 大脑皮质的六层结构 Six-layered structure of cerebral cortex                                           | 48 |
| 157. 小脑皮质神经元分布模式图 Diagram of distribution of neurons of cerebellar cortex                         | 48 |
| 158. 小脑微细结构 Microstructure of cerebellum                                                          | 49 |
| 159. 大脑微细结构 Microstructure of cerebrum                                                            | 49 |
| 160. 脊髓微细结构 Microstructure of spinal cord                                                         | 49 |
| 161. 脊髓灰质核团和分层示意图 Diagram showing the nuclei of gray matter and structure of layer in spinal cord | 50 |
| 162. 脊髓灰质微细结构 Microstructure of gray matter of spinal cord                                        | 50 |
| 163. 脊髓白质微细结构 Microstructure of white matter of spinal cord                                       | 50 |
| 164. 周围神经结构示意图 Diagram showing the structure of peripheral nerve                                  | 51 |
| 165. 周围神经结构示意图 Diagram showing the structure of peripheral nerve                                  | 51 |
| 166. 交感神经节 Sympathetic ganglion                                                                   | 52 |
| 167. 交感神经节细胞超微结构立体图 Three-dimensional diagram of ultrastructure of sympathetic ganglion cell      | 52 |
| 168. 微循环的结构示意图 Diagram showing the structure of microcirculation                                  | 53 |
| 169. 毛细血管超微结构图 Diagram illustrating the ultrastructure of capillaries                             | 53 |
| 170. 猴胰腺毛细血管 Capillaries of monkey pancreas                                                       | 54 |
| 171. 毛细血管 Capillary                                                                               | 54 |
| 172. 猴下颌腺毛细血管的周细胞 Pericyte of capillary in monkey submaxillary gland                              | 54 |
| 173. 人骨髓窦状毛细血管 Sinusoidal capillary of human bone marrow                                          | 54 |
| 174. 人真皮内的微静脉 Venule of human dermis                                                              | 54 |
| 175. 小血管和淋巴管 Small blood vessels and lymphatic vessels                                            | 55 |
| 176. 中动脉立体结构图 Three-dimensional diagram of medium-sized artery                                    | 55 |
| 177. 中动脉 (左) 和中静脉 (右) Medium-sized artery (left) and medium-sized vein (right)                    | 55 |
| 178. 大动脉横切面 Cross section of large artery                                                         | 56 |
| 179. 大动脉 Large artery                                                                             | 56 |
| 180. 心脏微细结构 Microstructure of heart                                                               | 56 |
| 181. 淋巴小结微细结构 Microstructure of lymphoid nodule                                                   | 57 |
| 182. 小结内细胞 Cells in the nodule                                                                    | 57 |
| 183. 小结细胞的分化 Differentiation of cells in nodule                                                   | 57 |
| 184. 淋巴结结构 Structure of lymph node                                                                | 57 |
| 185. 深皮质单位结构 Structure of deep cortex unit                                                        | 57 |
| 186. 淋巴结髓质的结构 Medullary structure of lymph node                                                   | 57 |
| 187. 髓质内细胞 Cells in the medulla                                                                   | 57 |
| 188. 淋巴结的微细结构示意图 Diagram illustrating the microstructure of lymph node                            | 58 |
| 189. 淋巴细胞再循环示意图 Diagram illustrating the recirculation of lymphocyte                              | 58 |
| 190. 脾微细结构 Microstructure of spleen                                                               | 59 |
| 191. 脾血循环示意图 Diagram showing the blood circulation through spleen                                 | 59 |
| 192. 脾红髓微细结构 Microstructure of red pulp of spleen                                                 | 59 |
| 193. 胸腺微细结构 Microstructure of thymus                                                              | 59 |
| 194. 血-胸腺屏障模式图 Diagram of blood-thymus barrier                                                    | 59 |
| 195. 胸腺微细结构 Microstructure of thymus                                                              | 59 |
| 196. 腭扁桃体微细结构 Microstructure of palatine tonsil                                                   | 59 |

|                                                                                          |    |
|------------------------------------------------------------------------------------------|----|
| 197. 人腭扁桃体 Human tonsilla palatina                                                       | 60 |
| 198. 猫血-胸屏障 Cat blood-thymus barrier                                                     | 60 |
| 199. 胸腺上皮性网状细胞间的桥粒 Desmosome between epithelial reticular cells of thymus                | 60 |
| 200. 人淋巴结的小结皮质淋巴细胞 Lymphocyte of nodular cortex of human lymph node                      | 60 |
| 201. 淋巴窦 Lymph sinus                                                                     | 60 |
| 202. 淋巴窦 Lymph sinus                                                                     | 60 |
| 203. 人脾索和脾窦 Human splenic cords and splenic sinusoids                                    | 61 |
| 204. 人脾窦和脾索 Human splenic sinusoid and splenic cord                                      | 61 |
| 205. 人皮肤表皮 Epidermis of human skin                                                       | 61 |
| 206. 表皮基底层和真皮 Stratum basale of epidermis and dermis                                     | 61 |
| 207. 朗格汉斯细胞 Langerhans cell                                                              | 61 |
| 208. 人的黑素细胞 Human melanocyte                                                             | 61 |
| 209. 指皮微细结构 Microstructure of skin from fingertip                                        | 62 |
| 210. 头皮微细结构 Microstructure of skin from head                                             | 62 |
| 211. 指甲 Microstructure of nail                                                           | 62 |
| 212. 舌的各种乳头 Various papillae of tongue                                                   | 63 |
| 213. 舌的各种乳头立体图 Three-dimensional diagram of various papillae of tongue                   | 63 |
| 214. 牙和牙龈微细结构 Microstructure of a tooth and gingiva                                      | 64 |
| 215. 牙横切面 Cross section of a tooth                                                       | 64 |
| 216. 食管微细结构 Microstructure of esophagus                                                  | 64 |
| 217. 胃微细结构 Microstructure of stomach                                                     | 65 |
| 218. 胃底腺超微结构立体图 Three-dimensional diagram of ultrastructure of fundic gland              | 66 |
| 219. 壁细胞超微结构 Ultrastructure of parietal cell                                             | 66 |
| 220. 壁细胞合成盐酸示意图 Diagram illustrating the synthesis of hydrochloric acid in parietal cell | 66 |
| 221. 肠绒毛微细结构 Microstructure of intestinal villus                                         | 67 |
| 222. 肠绒毛和小肠腺 Intestinal villus and gland                                                 | 67 |
| 223. 肠绒毛的立体观 Three-dimensional diagram of intestinal villus                              | 67 |
| 224. 小肠腺微细结构 Microstructure of small intestinal gland                                    | 67 |
| 225. 消化管黏膜上皮内的 M 细胞 M cell in epithelium mucosae of digestive tract                      | 67 |
| 226. 消化管内分泌细胞超微结构 Ultrastructure of gastrointestinal endocrine cell                      | 67 |
| 227. 空肠的纵切面 Longitudinal section of jejunum                                              | 68 |
| 228. 十二指肠的纵切面 Longitudinal section of duodenum                                           | 68 |
| 229. 回肠的纵切面 Longitudinal section of ileum                                                | 68 |
| 230. 小肠肌间神经丛 Myenteric nervous plexus                                                    | 69 |
| 231. 吸收细胞和杯状细胞超微结构 Ultrastructure of absorptive cell and goblet cell                     | 69 |
| 232. 吸收细胞功能示意图 Diagram showing the function of absorptive cell                           | 69 |
| 233. 小肠分泌免疫功能示意图 Diagram showing the secretory immune function of small intestine        | 69 |
| 234. 空肠微细结构 Microstructure of jejunum                                                    | 70 |
| 235. 结肠微细结构 Microstructure of colon                                                      | 70 |
| 236. 小肠黏膜上皮立体结构图 Three-dimensional diagram of epithelium of small intestine              | 70 |
| 237. 大肠纵切面 Longitudinal section of large intestine                                       | 71 |
| 238. 阑尾 Vermiform appendix                                                               | 71 |
| 239. 直肠肛门移行部 Transitive portion of rectum and anus                                       | 71 |

|                                                                                                       |    |
|-------------------------------------------------------------------------------------------------------|----|
| 240. 人胃底腺的颈黏液细胞 Mucous neck cell of human fundic gland                                                | 72 |
| 241. 人胃底腺的主细胞 Chief cell of human fundic gland                                                        | 72 |
| 242. 人胃底腺壁细胞 Parietal cell of human fundic gland                                                      | 72 |
| 243. 人小肠黏膜上皮的吸收细胞 Absorptive cell in epithelium mucosae of human small intestine                      | 72 |
| 244. 人小肠黏膜上皮的杯状细胞 Goblet cell in epithelium mucosae of human small intestine                          | 72 |
| 245. 人大肠黏膜上皮的柱状细胞 Columnar cell in epithelium mucosae of human large intestine                        | 72 |
| 246. 猴十二指肠黏膜上皮吸收细胞的微绒毛 Microvilli of absorptive cell in monkey duodenal epithelium mucosae            | 73 |
| 247. 豚鼠大肠黏膜上皮柱状细胞的微绒毛 Microvilli of columnar cell in epithelium mucosae of guinea pig large intestine | 73 |
| 248. 人胃幽门腺内的 G 细胞 Gastrin cell of human pyloric gland                                                 | 73 |
| 249. 人小肠腺的 S 细胞 Secretin cell of human intestinal gland                                               | 73 |
| 250. 人十二指肠腺内的 EC 细胞 Enterocnromaffin cell of human duodenal gland                                     | 73 |
| 251. 人十二指肠腺内的基底颗粒细胞 Basal granular cell of human duodenal gland                                       | 73 |
| 252. 唾液腺结构模式图 Diagram of structure of salivary gland                                                  | 74 |
| 253. 腮腺微细结构 Microstructure of parotid gland                                                           | 74 |
| 254. 下颌下腺微细结构 Microstructure of submandibular gland                                                   | 74 |
| 255. 舌下腺微细结构 Microstructure of sublingua gland                                                        | 74 |
| 256. 胰腺微细结构 Microstructure of pancreas                                                                | 75 |
| 257. 胰腺微细结构 Microstructure of pancreas                                                                | 75 |
| 258. 胰腺泡微细结构 Microstructure of a pancreatic acinus                                                    | 75 |
| 259. 胰腺内、外分泌细胞超微结构 Ultrastructure of exocrine and endocrine cells of pancreas                         | 75 |
| 260. 肝小叶模式图 Diagram of hepatic lobule                                                                 | 76 |
| 261. 肝小叶、门管小叶和肝腺泡示意图 Diagram showing the hepatic lobules, portal lobule and hepatic acinus            | 76 |
| 262. 肝小叶的微细结构 Microstructure of hepatic lobule                                                        | 76 |
| 263. 肝网状纤维 Reticular fibers of liver                                                                  | 76 |
| 264. 肝细胞索和肝血窦 Hepatic cell cords and sinusoids                                                        | 76 |
| 265. 胆小管和胆闰管 Bile canaliculus and Hering duct                                                         | 77 |
| 266. 肝细胞超微结构图 Diagram of ultrastructure of a hepatocyte                                               | 77 |
| 267. 肝板超微结构立体图 Three-dimensional diagram of ultrastructure of hepatic plate                           | 77 |
| 268. 肝细胞合成蛋白质示意图 Diagram showing the protein synthesis in hepatocyte                                  | 78 |
| 269. 肝细胞合成胆汁示意图 Diagram showing the bile acid synthesis in hepatocyte                                 | 78 |
| 270. 肝细胞分泌胆红素示意图 Diagram showing the bilirubin synthesis in hepatocyte                                | 78 |
| 271. 胆囊微细结构 Microstructure of vesica fellea                                                           | 78 |
| 272. 人腮腺浆液性腺细胞 Serous cell of human parotid gland                                                     | 79 |
| 273. 大鼠下颌下腺的浆液性腺细胞 Serous cell of rat submandibular gland                                             | 79 |
| 274. 人胰腺外分泌部细胞 Exocrine cell of human pancreas                                                        | 79 |
| 275. 人胰腺外分泌部细胞 Exocrine cell of human pancreas                                                        | 79 |
| 276. 人胰岛 A 细胞 A cell of human pancreatic islet                                                        | 79 |
| 277. 人胰岛 B 细胞 B cell of human pancreatic islet                                                        | 79 |
| 278. 小鼠胰岛 Mouse pancreatic islet                                                                      | 80 |
| 279. 人肝细胞 Human hepatocyte                                                                            | 80 |

|                                                                                                      |    |
|------------------------------------------------------------------------------------------------------|----|
| 280. 气管微细结构 Microstructure of trachea                                                                | 81 |
| 281. 气管上皮超微结构 Ultrastructure of tracheal epithelium                                                  | 81 |
| 282. 肺小叶模式图 Diagram of pulmonary lobule                                                              | 81 |
| 283. 肺微细结构 Microstructure of lung                                                                    | 81 |
| 284. 细支气管上皮细胞超微结构 Ultrastructure of epithelium of bronchiole                                         | 81 |
| 285. 肺泡超微结构 Ultrastructure of pulmonary alveolus                                                     | 81 |
| 286. II 型肺泡上皮细胞超微结构 Ultrastructure of type II alveolar cell                                          | 81 |
| 287. 猫嗅上皮 Cat olfactory epithelium                                                                   | 82 |
| 288. 肺泡上皮 Alveolar epithelium                                                                        | 82 |
| 289. 人 II 型肺泡细胞 Human type II alveolar cell                                                          | 82 |
| 290. 血-气屏障 Blood-air barrier                                                                         | 82 |
| 291. 人 I 型肺泡细胞 Human type I alveolar cell                                                            | 82 |
| 292. 人气管上皮的纤毛细胞 Ciliated cell in epithelium of human trachea                                         | 82 |
| 293. 肾单位的各段和集合小管在肾脏内的分布 Localization of nephron segments and collecting tubules in the kidney        | 83 |
| 294. 肾单位、集合小管的微细结构和超微结构 Microstructure and ultrastructure of nephron segments and collecting tubules | 83 |
| 295. 近曲小管上皮细胞超微结构模式图 Diagram of ultrastructure of proximal convoluted tubule cell                    | 83 |
| 296. 肾皮质微细结构 Microstructure of renal cortex                                                          | 84 |
| 297. 肾皮质微细结构 Microstructure of renal cortex                                                          | 84 |
| 298. 肾小体模式图 Diagram of renal corpuscle                                                               | 84 |
| 299. 有孔毛细血管和足细胞 Ultrastructure of fenestrated capillary and podocyte                                 | 84 |
| 300. 滤过屏障模式图 Diagram of filtration barrier                                                           | 84 |
| 301. 血管球内系膜模式图 Diagram of mesangium                                                                  | 84 |
| 302. 膀胱微细结构 Microstructure of vesica urinaria                                                        | 84 |
| 303. 足细胞 Podocytes                                                                                   | 85 |
| 304. 肾小体 Renal corpuscle                                                                             | 85 |
| 305. 人肾小体 Human renal corpuscle                                                                      | 85 |
| 306. 小鼠肾小囊 Mouse renal capsule                                                                       | 86 |
| 307. 滤过屏障 Filtration barrier                                                                         | 86 |
| 308. 大鼠肾小管 Rat renal tubule                                                                          | 86 |
| 309. 垂体远侧部 Pars distalis of pituitary gland                                                          | 87 |
| 310. 甲状腺微细结构 Microstructure of thyroid gland                                                         | 87 |
| 311. 肾上腺微细结构 Microstructure of adrenal gland                                                         | 87 |
| 312. 大鼠垂体前叶生长激素细胞 Somatotroph of rat anterior pituitary gland                                        | 88 |
| 313. 促甲状腺激素细胞 Thyrotroph                                                                             | 88 |
| 314. 促性腺激素细胞 Gonadotroph                                                                             | 88 |
| 315. 人甲状腺滤泡上皮细胞 Follicular epithelial cell of human thyroid gland                                    | 88 |
| 316. 大鼠肾上腺皮质细胞 (左上) 和髓质细胞 (右上) Rat adrenal cortex cell and adrenal medullar cell                     | 88 |
| 317. 人肾上腺髓质细胞 Human adrenal medullar cell                                                            | 88 |
| 318. 眼睑和眼球前部示意图 Diagram showing the eyelid and anterior part of eyeball                              | 89 |
| 319. 眼球壁的结构 Structure of coat of eyeball                                                             | 89 |
| 320. 角膜微细结构 Microstructure of cornea                                                                 | 89 |

|                                                                                       |    |
|---------------------------------------------------------------------------------------|----|
| 321. 巩膜、脉络膜微细结构 Microstrucure of sclera and choroid                                   | 89 |
| 322. 虹膜角膜角微细结构 Microstructure of iridocorneal angle                                   | 89 |
| 323. 晶状体的结构 Structure of lens                                                         | 89 |
| 324. 泪腺微细结构 Microstru cture of lacrimal grand                                         | 89 |
| 325. 视网膜 Microstructure of retina                                                     | 90 |
| 326. 黄斑和中央凹微细结构 Microstructure of macula lutea and central fovea                      | 90 |
| 327. 视网膜内神经元示意图 Diagram showing the neurons in the retina                             | 90 |
| 328. 耳蜗微细结构 Microstructure of cochlea                                                 | 90 |
| 329. 视网膜节细胞 Ganglion cell of retina                                                   | 91 |
| 330. 视细胞 Visual cell                                                                  | 91 |
| 331. 视网膜内的突触 Synapse of retina                                                        | 91 |
| 332. 视锥细胞和视杆细胞 Cone cell and rod cell                                                 | 91 |
| 333. 连接纤毛 Connecting cilium                                                           | 91 |
| 334. 色素上皮细胞 Pigment epithelial cell                                                   | 91 |
| 335. 睾丸生精小管和间质 Seminiferous tubule and interstitial tissue of testis                  | 92 |
| 336. 附睾内输出小管和附睾管 Efferent duct and epididymal duct of epididymis                      | 92 |
| 337. 小鼠生精小管的生精上皮 Spermatogenic epithelium of mouse seminiferous tubule                | 93 |
| 338. 初级精母细胞 Primary spermatocyte                                                      | 93 |
| 339. 精子头部 Head of spermatozoon                                                        | 93 |
| 340. 精子尾部 Tail of sperma tozoor                                                       | 93 |
| 341. 卵巢微细结构 Microstructure of ovary                                                   | 94 |
| 342. 输卵管微细结构 Microstructure of oviduct                                                | 94 |
| 343. 输卵管上皮增生期(左)和分泌期 Proliferative phase and secretory phase of epithelium of oviduct | 94 |
| 344. 子宫内膜的周期改变 Endometrium in different phases of menstrual cycle                     | 94 |
| 345. 小鼠卵巢的原始卵泡 Primordial follicle of mouse ovary                                     | 95 |
| 346. 初级卵泡 Primary follicle                                                            | 95 |
| 347. 人子宫内膜上皮 Epithelium of human endometrium                                          | 95 |
| 348. 人输卵管上皮 Epithelium of human oviduct                                               | 95 |
| 349. 子宫颈阴道部 Portio vaginalis cervicis                                                 | 96 |
| 350. 阴道微细结构 Microstructure of vagina                                                  | 96 |
| 351. 乳腺 Mammary gland                                                                 | 96 |
| 352. 静止期乳腺 Mammary gland of rest state                                                | 96 |
| 353. 妊娠期乳腺 Mammary gland of pregnant state                                            | 96 |
| 354. 授乳期乳腺 Mammary gland of lactating state                                           | 96 |
| 355. 乳腺分泌细胞超微结构 Uitrastructure of secretory cell of mammary gland                     | 96 |

## 胚胎学 EMBRYOLOGY

97

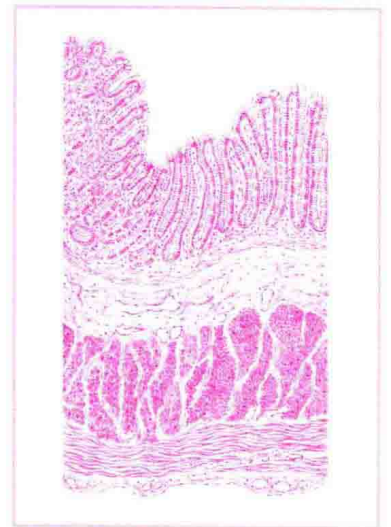
|                                                                          |    |
|--------------------------------------------------------------------------|----|
| 356. 精子和卵子 Spermatozoon and ovum                                         | 98 |
| 357. 受精经过 The process of fertilization                                   | 98 |
| 358. 卵裂和胚泡形成 Cleavage and formation of blastocyst                        | 98 |
| 359. 运卵和植入 Transport of zygote and implantation                          | 99 |
| 360. 植入过程中胚泡改变 Change of blastocyst of implantation into the endometrium | 99 |

|                                                                                 |     |
|---------------------------------------------------------------------------------|-----|
| 361. 三胚层的形成 Formation of the trilaminar germ layer                              | 100 |
| 362. 体节和胚内体腔形成 Formation of the somites and intraembryonic coelom               | 101 |
| 363. 三胚层分化 Differentiation of the trilaminar germ layer                         | 102 |
| 364. 4 周人胚 Drawings of a 4-week embryo                                          | 103 |
| 365. 胎膜和子宫内膜的关系 Relation of fetal membrane and endometrium                      | 103 |
| 366. 5 周人胚 Drawings of a 5-week embryo                                          | 104 |
| 367. 6 周人胚 Drawing of a 6-week embryo                                           | 104 |
| 368. 7 周人胚在羊膜腔内 Drawing of a 7-week embryo in amniotic cavity                   | 105 |
| 369. 9 周胎儿 Drawing of a 9-week fetus                                            | 105 |
| 370. 9 周胎儿在羊膜腔内 Drawing of a 9-week fetus in amniotic cavity                    | 106 |
| 371. 12 周胎儿 Drawing of a 12-week fetus                                          | 106 |
| 372. 26 周人胎儿 Drawing of a 26-week fetus                                         | 107 |
| 373. 胎盘结构模式图 Diagram of structure of the placenta                               | 107 |
| 374. 28 周胎儿在子宫内自然位置 Normal location of a 28-week fetus in the uterus            | 108 |
| 375. 胚龄和胚胎早期发生 Embryonic age and early development of the embryo                | 109 |
| 376. 颜面的发生 Development of the face                                              | 110 |
| 377. 各型唇裂和面斜裂 Types of cleft lip and oblique facial cleft                       | 111 |
| 378. 咽囊及其所演变的器官 Pharyngeal pouch and organs from pharyngeal pouch               | 111 |
| 379. 腭突和鼻中隔的发生 Development of palatine process and nasal septum                 | 112 |
| 380. 牙的发生 Development of teeth                                                  | 113 |
| 381. 椎骨的发生 Development of vertebrae                                             | 114 |
| 382. 肢芽的发生 Development of limb bud                                              | 114 |
| 383. 四肢皮节发生的神经分布 Development of dermatomere of limbs and distribution of nerves | 114 |
| 384. 4 周人胚 Drawing of a 4-week embryo                                           | 115 |
| 385. 气管和食管的分隔 Partitioning of the trachea and esophagus                         | 115 |
| 386. 喉的发生 Development of the larynx                                             | 115 |
| 387. 支气管和肺的发生 Development of the bronchi and lung                               | 115 |
| 388. 5 周人胚 Drawing of a 5-week embryo                                           | 116 |
| 389. 胃和网膜囊的发生 Development of the stomach and omental bursa                      | 116 |
| 390. 5 周人胚 Drawing of a 5-week embryo                                           | 117 |
| 391. 肠的发生 Development of gut                                                    | 117 |
| 392. 泄殖腔的分隔 The partition of cloaca                                             | 118 |
| 393. 胰腺的发生 Development of pancreas                                              | 118 |
| 394. 前、中肾的发生 Development of pronephros and mesonephros                          | 119 |
| 395. 后肾的发生 Development of metanephros                                           | 119 |
| 396. 外生殖器发生示意图 Diagram illustrating development of external genital organs      | 120 |
| 397. 血岛和血管的形成 The formation of the blood island and vessels                     | 121 |
| 398. 体蒂时期血循环 The blood circulation during the body stalk                        | 121 |
| 399. 人胚三种血循环 Three types of blood circulations of the embryo                    | 121 |
| 400. 动脉弓及其改变 Aortic arches and their change                                     | 121 |
| 401. 心管和围心腔的位置变化 Change of location of the cardiac tube and pericardial coelom  | 122 |
| 402. 心脏外形的改变 The change of heart shape                                          | 122 |
| 403. 房室管的分隔 Partitioning of the atrioventricular canal                          | 123 |

|                                                                                            |     |
|--------------------------------------------------------------------------------------------|-----|
| 404.心房和心室的分隔 Partitioning of the cardiac atrium and cardiac ventricle                      | 123 |
| 405.胚胎期心脏内的血液流向 The direction of blood flow in heart during the embryonic phase            | 124 |
| 406.心球和动脉干的分隔 The partition of the bulbus cordis and truncus arteriosus                    | 124 |
| 407.心脏发育异常 Abnormal development of the heart                                               | 125 |
| 408.动脉导管异常 Abnormal ductus arteriosus                                                      | 125 |
| 409.胎儿血液循环图 Diagram of fetus blood circulation                                             | 126 |
| 410.神经管和三个脑泡发生示意图 Diagram illustrating development of neural tube and three brain vesicles | 127 |
| 411.三个脑泡发育的示意图 Diagram illustrating development of three brain vesicles                    | 127 |
| 412.三个脑泡正中矢状切面 Median and sagittal section of three brain vesicles                         | 127 |
| 413.脑室和纹状体的发育 Development of cerebral ventricle and corpus striatum                        | 127 |
| 414.脊髓发生示意图 Diagram illustrating the development of spinal cord                            | 128 |
| 415.中枢神经系统的组织分化 Differentiation of tissue in central nerve system                          | 128 |
| 416.垂体的发生 Development of hypophysis                                                        | 129 |
| 417.神经嵴分化示意图 Diagram illustrating differentiation of neural crest                          | 129 |
| 418.眼的发生 Development of eye                                                                | 130 |
| 419.内、中耳的发生 Development of internal and middle ear                                         | 130 |
| 420.外耳的发生 Development of external ear                                                      | 130 |

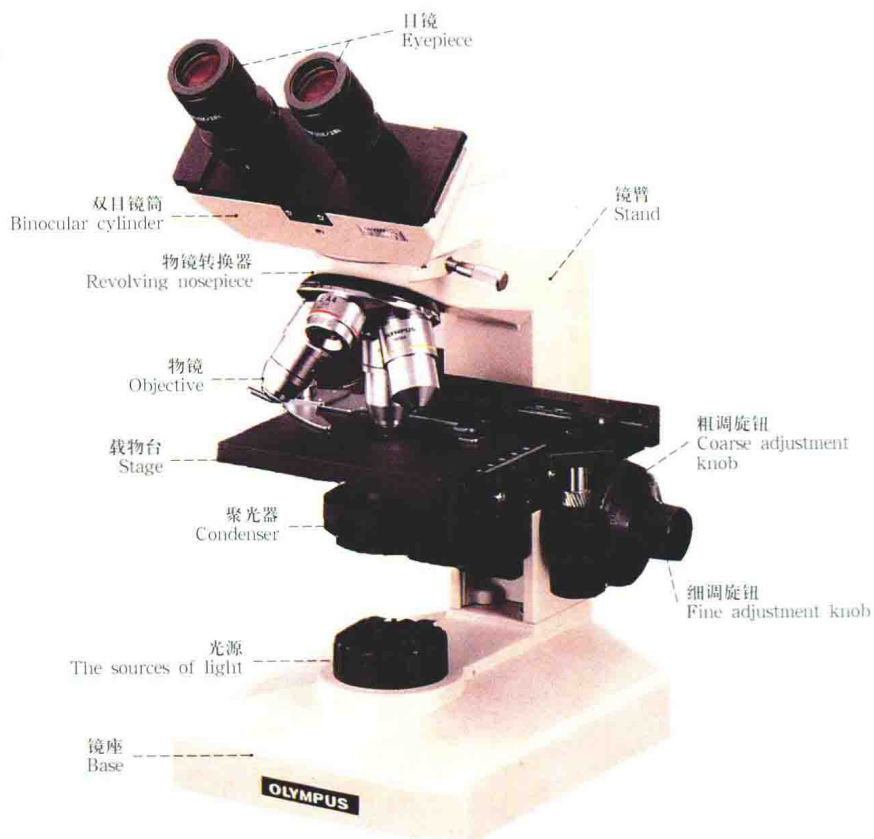
# HISTOLOGY

## 组织学





1. 单筒型显微镜  
Monocular microscope



2. 双筒型显微镜  
Binocular microscope