

Contents

Preface	vii
Color Plates	xiii
Volume 1	
Part I Cell Biology and Biochemistry of the Nervous System	1
1 Single Cell Neurobiology	3
<i>Jennifer Spaethling, Emily Rozak, and James Eberwine</i>	
2 Neuron Chemistry	23
<i>Bonnie L. Firestein</i>	
3 Receptor Biochemistry	51
<i>Tatsuya Haga and Kimihiko Kameyama</i>	
4 Rhythmic and Temporal Processes in Biology	93
<i>Russell G. Foster, Stuart Peirson, and David Whitmore</i>	
5 Sense of Smell	163
<i>Robert P. Lane, Gregory S. Smutzer, and Richard L. Doty</i>	
6 Pain Transduction: Gating and Modulation of Ion Channels	233
<i>Peter A. McNaughton</i>	
7 Invertebrate Neuropeptides	257
<i>Edward P. Masler</i>	
Part II Neurodevelopmental Biology	273
8 Brain Development	275
<i>Takayoshi Inoue</i>	
9 Stem Cells in the Adult Brain: Their Identification and Role in Neurogenesis	321
<i>Arturo Alvarez-Buylla and Erica L. Jackson</i>	

10 Behavior Genes	349
<i>Tanya Button and Peter McGuffin</i>	
11 Neurobiology and Development of Nematodes	381
<i>Darren R. Brooks, Ian A. Hope, and R. Elwyn Isaac</i>	

Volume 2

Part III Neurological Diseases	403
12 Prions	405
<i>Stanley B. Prusiner</i>	
13 Motor Neuron Diseases: Molecular Mechanism, Pathophysiology, and Treatments	465
<i>Michael Sendtner</i>	
14 Motor Neuron Diseases: Cellular and Animal Models	481
<i>Georg Haase</i>	
15 Alzheimer's Disease	499
<i>Jun Wang, Silva Hecimovic, and Alison Goate</i>	
16 Molecular Genetics of Down Syndrome	529
<i>Charles J. Epstein</i>	
17 Fragile X-linked Mental Retardation	541
<i>Ilse Gantois, R. Frank Kooy, and Ben A. Oostra</i>	
18 Triplet Repeat Diseases	589
<i>Stephan J. Guyenet and Albert R. La Spada</i>	
19 Molecular Biology of Neural Tube Defects	649
<i>Andrew J. Copp</i>	
20 Receptor, Transporter and Ion Channel Diseases	669
<i>J. Jay Gargus</i>	
21 Pathophysiology of Stroke	743
<i>Andreas Meisel, Konstantin Prass, Tilo Wolf, and Ulrich Dirnagl</i>	
Index	775