
Table of Contents

Chapter 1	Quantitative Trait Locus (QTL) Mapping in Mice	1
<i>Abraham A. Palmer and Tamara J. Phillips</i>		
Chapter 2	Knockout and Knockin Mice	31
<i>Gregg E. Homanics</i>		
Appendix 2.1	Preparation of Mouse Embryonic Fibroblast Feeder Cells	57
Appendix 2.2	ES Cell Transformation by Electroporation	59
Chapter 3	Molecular Studies by Chimeragenesis and Mutagenesis.....	63
<i>Michael J. Beckstead, Gregory F. Lopreato, Kent E. Vrana and S. John Mihic</i>		
Chapter 4	Combining Patch-Clamp Recording and Gene Profiling in Single Neurons.....	83
<i>Hermes H. Yeh, Stavros Therianos and Shao-Ming Lu</i>		
Appendix 4.1	Protocol for Single-Cell mRNA Amplification/Reverse Northern Analysis.....	99
Appendix 4.2	Protocol for Single-Cell RT-PCR.....	109
Appendix 4.3	Protocol for Single-Cell Multiplex RT-PCR.....	111
Chapter 5	Quantitative Analysis of Neurotransmitter Receptor Expression with Antibody-Based Techniques.....	113
<i>C. Fernando Valenzuela and Daniel D. Savage</i>		
Appendix 5.1	Detailed Protocols for Western Immunoblotting	139
Chapter 6	Artificial Bilayer Techniques in Ion Channel Study	143
<i>Steven N. Treistman, Robert O'Connell and John Crowley</i>		

Chapter 7	Rapid Drug Superfusion and Kinetic Analysis	159
<i>David M. Lovinger, Suzanne Sikes and Qing Zhou</i>		
Chapter 8	Electrophysiological Assessment of Synaptic Transmission in Brain Slices	191
<i>Jeff L. Weiner</i>		
Chapter 9	Cognitive Correlates of Single Neuron Activity in Task-Performing Animals	219
<i>Bennet Givens and T. Michael Gill</i>		
Chapter 10	Multichannel Neural Ensemble Recording During Alcohol Self-Administration	241
<i>Patricia H. Janak</i>		
Chapter 11	Combined Single-Neuron Recording and Microdialysis in the Brain of Freely Behaving Animals (Rodents and Non-Human Primates).....	259
<i>Nandor Ludvig</i>		
Chapter 12	Quantitative Microdialysis for <i>in vivo</i> Studies of Pharmacodynamics	287
<i>Rueben A. Gonzales, Amanda Tang and Donita L. Robinson</i>		
Chapter 13	Structural Magnetic Resonance Imaging (MRI) of the Human Brain	319
<i>Terry L. Jernigan</i>		
Chapter 14	Biochemical, Functional and Microstructural Magnetic Resonance Imaging (MRI)	345
<i>Elfar Adalsteinsson, Edith V. Sullivan and Adolf Pfefferbaum</i>		
Index		373