

Contents

Part I Behavioral Analysis

1 Behavioral Analysis in <i>Caenorhabditis elegans</i>	3
Yuki Tsukada and Ikue Mori	
2 Classical Conditioning of the Proboscis Extension Reflex in the Honeybee	15
Yukihisa Matsumoto, Jean-Christophe Sandoz, and Martin Giurfa	

Part II Electrophysiology

3 Mining Spatio-Spectro-Temporal Cortical Dynamics: A Guideline for Offline and Online Electrographic Analyses	39
Zenas C. Chao and Naotaka Fujii	
4 Computational Analysis of Behavioural and Neural Data Through Bayesian Statistical Modelling	57
Raymond Wai Mun Chan and Fabrizio Gabbiani	

Part III Optical Recording Techniques

5 In Vivo Ca^{2+} Imaging of Neuronal Activity.....	71
Hiroto Ogawa and John P. Miller	
6 Optical Imaging Techniques for Investigating the Function of Earthworm Nervous System.....	89
Kotaro Oka and Hiroto Ogawa	

Part IV Optogenetics

7 Monitoring Neural Activity with Genetically Encoded Ca^{2+} Indicators.....	103
Azusa Kamikouchi and André Fiala	
8 Controlling Behavior Using Light to Excite and Silence Neuronal Activity	115
Ali Cetin and Shoji Komai	

Part V Molecular Biological Techniques

9 Detecting Neural Activity-Dependent Immediate Early Gene Expression in the Brain	133
Kazuhiro Wada, Chun-Chun Chen, and Erich D. Jarvis	
10 Epigenetic Regulation of Gene Expression in the Nervous System.....	151
Dai Hatakeyama, Sascha Tierling, Takashi Kuzuhara, and Uli Müller	
Index.....	173



<http://www.springer.com/978-4-431-54330-5>

Methods in Neuroethological Research

Ogawa, H.; Oka, K. (Eds.)

2013, X, 175 p., Hardcover

ISBN: 978-4-431-54330-5