

Contents

1 Imaging of Dopaminergic Neurons and the Implications for Parkinson’s Disease	1
Wakoto Matsuda	
2 Modelling and Simulation of Brain Energy Metabolism: Energy and Parkinson’s Disease	19
Peter Wellstead and Mathieu Cloutier	
3 Systems Biology of Aging: Opportunities for Parkinson’s Disease	39
Andres Kriete	
4 Mitochondrion- and Endoplasmic Reticulum-Induced SK Channel Dysregulation as a Potential Origin of the Selective Neurodegeneration in Parkinson’s Disease	57
Guillaume Drion, Vincent Seutin, and Rodolphe Sepulchre	
5 Energetics of Ion Transport in Dopaminergic <i>Substantia nigra</i> Neurons	81
Febe Francis, Míriam R. García, and Richard H. Middleton	
6 Real-Time <i>In Vivo</i> Sensing of Neurochemicals	111
Fiachra B. Bolger, Niall J. Finnerty, and John P. Lowry	
7 Modeling Protein and Oxidative Metabolism in Parkinson’s Disease	131
Mathieu Cloutier and Peter Wellstead	
8 Mathematical Models of Dopamine Metabolism in Parkinson’s Disease	151
Zhen Qi, Gary W. Miller, and Eberhard O. Voit	
Index	173



<http://www.springer.com/978-1-4614-3410-8>

Systems Biology of Parkinson's Disease

Wellstead, P.; Cloutier, M. (Eds.)

2012, XVI, 176 p., Hardcover

ISBN: 978-1-4614-3410-8