## Contents

### Part I  Models and Markers in Aging

**Drosophila melanogaster: A Prime Experimental Model**

*System for Aging Studies* ................................................. 3  
Renu Yadav, Soram Idiyasan Chanu, Kritika Raj, Nisha and Surajit Sarkar

**Dictyostelium discoideum: A Model System to Study**

*Autophagy Mediated Life Extension* ................................... 35  
Punita Jain, Priyanka Sharma, Anju Shrivastava and Shweta Saran

**Down Regulation of Sirtuins in the Serum of Frail Elderly as Compared to Non-frail Elderly:**

*Promising Diagnostic Protein Marker for Frailty* ................. 57  
Sharmistha Dey

**Morphology of the Human Pancreas During Development and Aging** ........................................... 67  
Renu Gupta, Shubhi Saini, Saroj Sharma, Tony G. Jacob and T.S. Roy

### Part II  Metabolic and Molecular Changes in Aging

**Insulin-like Growth Factor-1 and Its Related Signalling During Aging: Modulation by Dietary Restriction** ................. 93  
Ibanylla Kynjai Hynniewta Hadem and Ramesh Sharma

**Arginase I Regulation by Dexamethasone in the Liver of Aging Mouse** ........................................ 109  
Teikur Majaw and Ramesh Sharma

**Inorganic Pyrophosphatase of Cardiac and Skeletal Muscle is Enhanced by Dietary Restriction in Mice During Aging** ........ 117  
Wanaiborlang Jala Kharbhiih and Ramesh Sharma
Oxidative Stress and the Brain: An Insight into Cognitive Aging .................................................. 123
Sambe Asha Devi and Abhijit Satpati

Age-Related Changes in Antioxidant Enzymes of Rat Kidney and Oxidative Stress Parameters with Special Reference to Methylation of the Catalase Promoter .................. 141
Srikanta Jena, Suresh K. Bunker, Jagneshwar Dandapat and G.B.N. Chainy

Differential Expression of Long Noncoding RNA in the Rat Brain During Aging .............................. 161
Sukhleen Kour and Pramod C. Rath

Chromatin and Aging ........................................... 205
Jogeswar Satchidananda Purohit and Madan Mohan Chaturvedi

Part III Neuromodulations in Aging

Changing Population of Neurons and Glia in the Human Cochlear Nucleus During Aging .................. 245
Saroj Sharma, Tony G. Jacob, Tapas C. Nag, Daya N. Bhardwaj and T.S. Roy

Changes in Social Behavior Associated with Alzheimer’s Disease-Related Aβ Pathology .................. 253
Neha Mishra, Rameshwar Singh and Deepak Sharma

Recovery of Age-Related Memory Loss: Hopes and Challenges ........ 267
Mahendra Kumar Thakur, Arpita Konar, Dhiraj Kumar, Meghraj Singh Baghel and Padmanabh Singh

Expression and Regulation of Pax6 in Brain of Aging Mice .............. 279
Shashank Kumar Maurya, Ratnakar Tripathi, Suman Mishra and Rajnikant Mishra

Electrophysiological Ageing of the Brain: Ageing-Related Impairments in Neural and Cognitive Functions ........... 291
Rameshwar Singh

Antiaging Neurosteroid Dehydroepiandrosterone Counters
Epileptiform Activity in Iron-Induced Experimental Epilepsy ........... 303
Monika Mishra, Rameshwar Singh and Deepak Sharma

Part IV Interventions for Healthy Aging

The Holistic Principles of Ayurvedic Geriatrics ......................... 313
Ram H. Singh
Dietary Restriction, an Intervention for Healthy Aging ............... 327
Ramesh Sharma

Diabetes Mellitus Type 2 Induces Brain Aging and
Memory Impairment in Mice: Neuroprotective Effects
of *Bacopa monnieri* Extract ................................................. 335
Surya Prakash Pandey and S. Prasad
Topics in Biomedical Gerontology
Rath, P.C.; Sharma, R.; Prasad, S. (Eds.)
2017, XXI, 355 p. 77 illus., Hardcover
ISBN: 978-981-10-2154-1