# Contents

## Part I Genetic Regulation of Longevity

1. Neuronal Genes and Developmental Neuronal Pathways in *Drosophila* Life Span Control .......................... 3
   Elena Pasyukova, Alexander Symonenko, Natalia Roshina,
   Mikhail Trostnikov, Ekaterina Veselkina and Olga Rybina

2. Gadd45 Proteins in Aging and Longevity of Mammals and *Drosophila* ........................................... 39
   Alexey A. Moskalev, Ekaterina N. Proshkina
   and Mikhail V. Shaposhnikov

3. Superoxide Dismutase (SOD) Genes and Aging in *Drosophila* ............ 67
   John Tower

4. Effect of *Wolbachia* Infection on Aging and Longevity-Associated Genes in *Drosophila* .......................... 83
   Oleksandr M. Maistrenko, Svitlana V. Serga, Alexander M. Vaiserman
   and Iryna A. Kozeretska

## Part II *Drosophila* Models for Aging-Associated Diseases

5. Skeletal Muscle Homeostasis and Aging in *Drosophila* ................. 107
   Melissa J. Puppa and Fabio Demontis

6. *Drosophila* Models of Cardiac Aging and Disease ......................... 127
   Alyson Sujkowski and Robert Wessells
7 Parallels Between Mammals and Flies in Inflammatory Bowel Disease .............................................. 151
Christofi Theodoulakis and Yiorgos Apidianakis

8 Protein Quality Control in Brain Aging: Lessons from Protein Misfolding Disorders in Drosophila ...................... 191
Lorena de Mena, Pedro Fernandez-Funez and Diego E. Rincon-Limas

9 Drosophila Models in Therapeutic Drug Discovery Related to Aging .............................................. 213
Charles D. Nichols

Part III Life-Extending Treatments

10 Life-Extending Effect of Phytochemicals in Drosophila .............. 229
Lee Shin-Hae and Min Kyung-Jin

11 Life Extension in Drosophila by Histone Deacetylase Inhibitors .... 245
Alexander M. Vaiserman and Elena G. Pasyukova

12 An Evolutionary Analysis of Healthspan Extension Using Diet: Have We Come to the End of the Ponce de Leon Trail? .............. 265
Grant A. Rutledge and Michael R. Rose

13 Atmosphere, Metabolism and Longevity .............................................. 285
Khatchik Muradian

14 Effects of Mild Stresses Applied in Adults on Aging and Longevity .............................................. 301
Éric Le Bourg

15 Strategies for Stage-Specific Extension of Longevity.............. 321
Robert Arking

Erratum to: Parallels Between Mammals and Flies in Inflammatory Bowel Disease ................................. E1
Theodoulakis Christofi and Yiorgos Apidianakis

Index .............................................. 349
Life Extension
Lessons from Drosophila
Vaiserman, A.; Moskalev, A.; Pasyukova, E. (Eds.)
2015, VIII, 353 p. 49 illus., 26 illus. in color., Hardcover
ISBN: 978-3-319-18325-1