
Contents

<i>Preface</i>	v
<i>Contributors</i>	ix
1 Cell Senescence Culturing Methods	1
<i>Huaping Chen, Yuanyuan Li, and Trygve O. Tollefsbol</i>	
2 Digital Image Analysis of Cells Stained with the Senescence-Associated β -Galactosidase Assay	11
<i>Liran I. Shlush and Sara Selig</i>	
3 Analysis of Biomarkers of Caloric Restriction in Aging Cells	19
<i>Yuanyuan Li and Trygve O. Tollefsbol</i>	
4 Cell Sorting of Young and Senescent Cells.	31
<i>Graeme Hewitt, Thomas von Zglinicki, and João F. Passos</i>	
5 Studying the Replicative Life Span of Yeast Cells	49
<i>David A. Sinclair</i>	
6 Methods for Creating Mutations in <i>C. elegans</i> That Extend Lifespan	65
<i>Dayong Wang, Min Cao, Jessica Dinh, and Yuqing Dong</i>	
7 Aging Studies in <i>Drosophila Melanogaster</i>	77
<i>Yaning Sun, Jason Yolitz, Cecilia Wang, Edward Spangler, Ming Zhan, and Sige Zou</i>	
8 The Use of Calorie Restriction Mimetics to Study Aging	95
<i>Munehiro Kitada and Daisuke Koya</i>	
9 Using Somatic-Cell Nuclear Transfer to Study Aging	109
<i>Satoshi Kishigami, Ah Reum Lee, and Teruhiko Wakayama</i>	
10 Induction of Cellular Senescence by Oncogenic RAS	127
<i>Romi Gupta and Narendra Wajapeyee</i>	
11 Methods of Cellular Senescence Induction Using Oxidative Stress	135
<i>Zhe Wang, Dandan Wei, and Hengyi Xiao</i>	
12 Methods of Testing Pharmacological Drugs Effects on Aging and Life Span in Mice.	145
<i>Vladimir N. Anisimov, Irina G. Popovich, and Mark A. Zabezhinski</i>	
13 Mitochondria-Targeted Antiaging Gene Therapy with Adeno-associated Viral Vectors	161
<i>Dejia Li and Dongsheng Duan</i>	
14 Real-Time Bioluminescence Functional Imaging for Monitoring Tissue Formation and Regeneration	181
<i>Nadav Bleich Kimelman, Ilan Kallai, Dmitriy Sheyn, Wafa Tawackoli, Zulma Gazit, Gadi Pelled, and Dan Gazit</i>	
15 Exometabolomic Mapping of <i>Caenorhabditis elegans</i> : A Tool to Noninvasively Investigate Aging	195
<i>Robert J. Mishur, Jeffrey A. Butler, and Shane L. Rea</i>	

16	Detecting Polymorphisms in Human Longevity Studies: HLA Typing and SNP Genotyping by Amplicon Sequencing	215
	<i>Gilberto Vargas-Alarcón and Carmina Flores-Domínguez</i>	
17	Gel Electrophoresis-Based Proteomics of Senescent Tissues	229
	<i>Steven Carberry and Kay Ohlendieck</i>	
18	Single-Cell Semiconductor Sequencing	247
	<i>Andrea B. Kohn, Tatiana P. Moroz, Jeffrey P. Barnes, Mandy Netherton, and Leonid L. Moroz</i>	
19	Application of DNA Microarray Technology to Gerontological Studies	285
	<i>Kiyoshi Masuda, Yuki Kuwano, Kensei Nishida, and Kazuhito Rokutan</i>	
20	Epigenetic Biomarker to Determine Replicative Senescence of Cultured Cells	309
	<i>Carmen M. Koch and Wolfgang Wagner</i>	
21	Single-Neuron Transcriptome and Methylome Sequencing for Epigenomic Analysis of Aging	323
	<i>Leonid L. Moroz and Andrea B. Kohn</i>	
	<i>Index</i>	353



<http://www.springer.com/978-1-62703-555-2>

Biological Aging

Methods and Protocols

Tollefsbol, T. (Ed.)

2013, XI, 354 p. 54 illus., 35 illus. in color. With online files/update., Hardcover

ISBN: 978-1-62703-555-2

A product of Humana Press