

Contents

<i>Preface</i>	v
<i>Contributors</i>	ix
PART I: DETECTION OF APOPTOSIS	
1 Analysing Caspase Activation and Caspase Activity in Apoptotic Cells	3
<i>Sharad Kumar and Loretta Dorstyn</i>	
2 Flow Cytometry-Based Apoptosis Detection	19
<i>Donald Wlodkowic, Joanna Skommer, and Zbigniew Darzynkiewicz</i>	
3 Live to Dead Cell Imaging	33
<i>Stephen W.G. Tait, Lisa Bouchier-Hayes, Andrew Oberst, Samuel Connell, and Douglas R. Green</i>	
4 Detection of Apoptosis in Tissue Sections	49
<i>Eva Csizmadia and Vilmos Csizmadia</i>	
5 Detection of Apoptosis in Cell-Free Systems	65
<i>Dhyan Chandra and Dean G. Tang</i>	
PART II: DETECTION OF NON-APOPTOTIC CELL DEATH	
6 Methods to Analyze Cellular Necroptosis	79
<i>Benchun Miao and Alexei Degterev</i>	
7 Detection of Cell Death by Autophagy	95
<i>Narasimman Gurusamy and Dipak K. Das</i>	
PART III: MODIFICATIONS OF APOPTOTIC PROTEINS DURING APOPTOSIS	
8 Methods to Analyze Transglutamination of Proteins Involved in Apoptosis	107
<i>Zoltán Nemes and László Fésüs</i>	
9 Methods to Analyze S-nitrosylation of Proteins Involved in Apoptosis	117
<i>Neelam Azad, Anand Krishnan V. Iyer, and Yon Rojanasakul</i>	
10 Application of In Vivo EPR for Tissue pO ₂ and Redox Measurements	131
<i>Nadeem Khan and Dipak K. Das</i>	
PART IV: ANALYSIS OF THE FUNCTION OF MAJOR REGULATORS OF APOPTOSIS/CELL SURVIVAL	
11 Assays to Measure p53-Dependent and -Independent Apoptosis	143
<i>Darren C. Phillips, Sean P. Garrison, John R. Jeffers, and Gerard P. Zambetti</i>	
12 Measurement of Changes in Cdk2 and Cyclin O-Associated Kinase Activity in Apoptosis	161
<i>Ramon Roset and Gabriel Gil-Gómez</i>	

13	Fluorometric Methods for Detection of Mitochondrial Membrane Permeabilization in Apoptosis	173
	<i>Soumya Sinha Roy and György Hajnóczy</i>	
14	Regulation of Apoptosis by the Unfolded Protein Response	191
	<i>Andrew Fribley, Kezhong Zhang, and Randal J. Kaufman</i>	
15	Detection of Uncoupling Protein-2 (UCP2) As a Mitochondrial Modulator of Apoptosis	205
	<i>Zoltan Derdak, Tamako A. Garcia, and Gyorgy Baffy</i>	
16	Multiple Approach to Analyzing the Role of MicroRNAs in Apoptosis	219
	<i>Riccardo Spizzo and George A. Calin</i>	
17	Assessment of Apoptotic Cell Phagocytosis by Macrophages	247
	<i>Kathleen A. McPhillips and Lars-Peter Erwig</i>	
PART V: ANALYSIS OF APOPTOSIS IN DIFFERENT ORGANS		
18	Detection of Apoptosis in Mammalian Development	259
	<i>Lin Lin, Carlos Penaloza, Yixia Ye, Richard A. Lockshin, and Zahra Zakeri</i>	
19	Detection of Apoptosis in the Central Nervous System	273
	<i>Youngsoo Lee and Peter J. McKinnon</i>	
20	Genetic Mapping of Anti-Apoptosis Pathways in Myeloid Progenitor Cells	283
	<i>Dan Liu and Zhou Songyang</i>	
21	Analysis of Apoptosis in Isolated Primary Cardiac Myocytes	293
	<i>Adel Mandl, Ambrus Toth, and Peter Erhardt</i>	
22	Cell Death in Myoblasts and Muscles	313
	<i>Lawrence M. Schwartz, Zhengliang Gao, Christine Brown, Sangram S. Parelkar, and Honor Glenn</i>	
PART VI: ANALYSIS OF APOPTOSIS IN MODEL ORGANISMS		
23	Reliable Method for Detection of Programmed Cell Death in Yeast	335
	<i>Xinchen Teng and J. Marie Hardwick</i>	
24	Detection of Cell Death in <i>Drosophila</i>	343
	<i>Kimberly McCall, Jeanne S. Peterson, and Tracy L. Pritchett</i>	
25	Detecting Apoptotic Cells and Monitoring Their Clearance in the Nematode <i>Caenorhabditis elegans</i>	357
	<i>Nan Lu, Xiaomeng Yu, Xiangwei He, and Zheng Zhou</i>	
26	Detection of Herpes Simplex Virus Dependent Apoptosis	371
	<i>Christopher R. Cotter and John A. Blaho</i>	
	Index	389