

Cambridge University Press

0521529565 - Apoptosis in Health and Disease: Clinical and Therapeutic Aspects

Edited by Martin Holcik, Eric C. LaCasse, Alex E. MacKenzie and Robert G. Korneluk

Table of Contents

[More information](#)

Contents

	<i>page</i>
<i>List of contributors</i>	vii
<i>Preface</i>	ix
1 Apoptosis in health, disease, and therapy: overview and methodology	1
Eric C. LaCasse, Martin Holcik, Robert G. Korneluk, and Alex E. MacKenzie	
1.1 Introduction: life cannot exist without cellular death	1
1.2 Apoptosis: roles in health	10
1.3 Apoptosis: roles in disease	11
1.4 Therapeutic strategies targeting apoptosis	17
1.5 Methods in apoptosis research	24
1.6 Conclusion	28
2 Developmental apoptosis in health and disease	49
Hyung Don Ryoo and Hermann Steller	
2.1 Introduction	49
2.2 Apoptosis in <i>C. elegans</i>	50
2.3 Apoptosis in <i>Drosophila</i>	54
2.4 Apoptosis during mammalian development	61
3 Apoptosis and cancer	75
Erinn L. Soucie, Gerard Evan, and Linda Z. Penn	
3.1 Introduction	75
3.2 Defining cancer in apoptotic terms	75
3.3 Molecular mechanisms of apoptotic deregulation in cancers	77
3.4 Reactivating the death pathway to combat cancer	82
3.5 On the horizon	88
3.6 Conclusions	89
4 Neuronal cell death in human neurodegenerative diseases and their animal/cell models	96
Lee J. Martin, Zhiping Liu, Juan Troncoso, and Donald L. Price	
4.1 Introduction	96
4.2 Types of cell death	96
4.3 Molecular and cellular regulation of apoptosis	102

Cambridge University Press

0521529565 - Apoptosis in Health and Disease: Clinical and Therapeutic Aspects

Edited by Martin Holcik, Eric C. LaCasse, Alex E. MacKenzie and Robert G. Korneluk

Table of Contents

[More information](#)

vi**Contents**

4.4	Regulation of developmental PCD in the nervous system	115
4.5	Cell death in human neurodegenerative diseases	115
5	Apoptosis in the cardiovascular system: incidence, regulation, and therapeutic options	156
	Martin R. Bennett	
5.1	Incidence of apoptosis	156
5.2	Regulation of apoptosis	162
5.3	Therapeutic options for apoptosis treatment	170
5.4	Outstanding questions	174
5.5	Summary	175
6	Cytotoxic lymphocytes, apoptosis, and autoimmunity	188
	Pere Santamaria and R. Chris Bleackley	
6.1	Introduction	188
6.2	Cell-mediated cytotoxicity: kissing the offender	189
6.3	TNF/TNFR family members and CTL killing without target cell engagement: looks can kill	192
6.4	Apoptosis and autoimmunity	194
6.5	Concluding remarks	204
7	Pro- and anti-apoptotic strategies of viruses	219
	Helmut Fickenscher, Bernhard Fleckenstein, and Armin Ensser	
7.1	Introduction	219
7.2	Major anti-apoptotic pathways targeted by viruses	220
7.3	Specific viral strategies to induce or block apoptosis	228
7.4	Conclusions	234
	<i>Index</i>	246