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BOOK REVIEW

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## Essentials of Apoptosis. A Guide for Basic and Clinical Research

(Yin, X.-M., and Dong, Z., eds., Humana Press, 2003, 259 p., \$89.50)

This book considers topical problems of programmed cell death/apoptosis. In the Editors' Preface, it is quite correctly said that during the last decade descriptions of morphological changes in cells are supplemented with striking achievements in comprehension of molecular and biochemical mechanisms of apoptosis. These achievements have given an extremely essential stimulus for development of biology and medicine.

The book consists of three parts written by experts in the appropriate fields.

The first part (seven chapters) describes types of molecules and metabolic pathways responsible for apoptosis in cells. In particular, caspases are characterized including their structure, activation mechanism triggering these proteolytic enzymes, and protein substrates. Some chapters of this part consider the Bcl-2 protein family involved in regulation of apoptosis. A separate chapter characterizes inhibitors of apoptotic proteins, structural changes in cells during apoptosis, specific receptor systems, and pathways of apoptosis development in cells. A special chapter describes apoptosis in mitochondria.

The second part of the book (eight chapters) presents data on apoptosis in plants, yeast, bacteria, nematodes (*C. elegans*), fruit fly, and during the development of mammals. About half of this part of the book is dedicated to apoptosis in cancer, immune disorders, inflammation, and stress. Separate chapters enlighten special features of apoptosis in neurodegenerative diseases: cerebral ischemia and Parkinson's and Huntington's diseases. The conclusive chapter of this part describes apoptosis in ischemic disease.

The third part of the book includes one chapter, which summarizes the basic principles and approaches in studies on apoptosis. The approaches described are analysis of the plasma membrane state, staining of cells, determination of caspase activities, of Bcl-2 proteins, as well as methods used in investigations of apoptosis in mitochondria and the nucleus.

A bibliography in each chapter, good photos, figures, and tables, and also a subject index allow the reader to easily perceive the material presented in the book.

No doubt, this book will be valuable for many researchers, both those starting in studies on apoptosis and those experienced in this field.

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