

Stem Cell Biology and Regenerative Medicine

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Adult Stem Cells

Biology and Methods of Analysis

This is comprehensive overview of a vital area of scientific enquiry, which covers a broad spectrum of issues. With contributions from some of the key researchers in the field, *Adult Stem Cells: Biology and Methods of Analysis* offers readers a historical perspective as well as unique insights into cutting-edge thoughts. The volume contextualizes the recent discovery of stem/progenitor cell populations resident in many adult tissues and organs. It confronts the complexities scientists face in trying to validate these cells, while it also describes and critically evaluates the methods currently used to assess stem cell self-renewal. The chapters also seek to distinguish this process from other aspects of cell survival, such as the regulation of life span, senescence, and immortalization at a molecular level.

The monograph begins with a section that examine the basic biology of adult stem cells, including chapters on the emerging role of microRNAs in regulating their fate and the molecular mechanisms that govern their self-renewal, the book moves on to analyze the varying methodologies employed in characterizing these elusive elements of our genetic make-up. The second section details in-vivo lineage tracing of tissue-specific stem cells, explores the neural stem cell paradigm, and considers the function of ABC transporters and aldehyde dehydrogenase in adult stem-cell biology. The final section shifts the focus to the life-span regulation and immortalization and features a chapter on the cancer stem cell paradigm.

This is an authoritative volume on one of the frontiers of genetic research, and will serve as a valuable resource, not just for established scientists but also for those now entering the field of stem cell biology.

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