
BOOK REVIEW

Stem Cells Handbook

(Sell, S. (ed.) Humana Press, 2004, 509 p., \$175.00)

During recent years interest in stem cells (SC) has significantly increased. Experts believe that studies in this direction not only extend our basic knowledge about cells but also open very promising possibilities in treatment of numerous diseases including malignant transformation of cells.

This book consists of 43 chapters written by an international group of distinguished experts in this field. The first three chapters give definition of SC, their characterization, and isolation from human embryos. Subsequent chapters (4-10) deal with maturation of SC and their conversion into mature functioning cells. These chapters also consider problems related to SC cloning and their role in regeneration in amphibia and in wound healing. Chapters 11-15 highlight problems of SC involvement into hematopoiesis under normal conditions and in leukemia and lymphomas. Chapters 16 and 17 give information about nervous system SC and practical approaches for application of these cells for substitutions of altered nerve cells. Chapters 18-20 consider problems of isolation and application of retinal, endothelial, and cardiovascular SC. Chapters 21-25 describe application of SC for induction of cardiomyocyte regeneration in heart and kidney diseases (including nephroblastoma). Chapters 26-30

describe various approaches employed for certain cancers of skin and gastrointestinal tract. Chapters 31-36 consider various aspects of biology and application of SC isolated from various hepatic cells. One of these chapters deals with problems of hepatic SC transplantation for treatment of liver diseases. The subsequent six chapters (37-42) contain information on SC from pancreas, mammary gland epithelium, lung, and other organs with special emphasis on use of SC for treatment of various diseases including tumor transformation of these organs.

The concluding chapter 43 considers perspectives of studies on SC in the near future. It is suggested that cell therapy employing SC may become a highly effective method for treatment of various human diseases including such poorly curable (or even incurable) diseases as cancer, Parkinson's and Alzheimer's diseases, etc. However, practical solution of this cardinal problem requires solutions of numerous problems related to basic biology of SC.

Besides valuable information given in this book, it should be noted that the book itself is well published. It will be very useful for both beginners and experienced researchers working in the field of biochemistry of SC, biotechnology, molecular and cell biology, and medicine.

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