

Stem Cell Biology and Regenerative Medicine  
Kursad Turksen, *Series Editor*

Krishnarao Appasani · Raghu K. Appasani *Editors*

## Stem Cells & Regenerative Medicine

From Molecular Embryology to Tissue Engineering

Defined as, “The science about the development of an embryo from the fertilization of the ovum to the fetus stage,” embryology has been a mainstay at universities throughout the world for many years. Throughout the last century, embryology became overshadowed by experimental-based genetics and cell biology, transforming the field into developmental biology, which replaced embryology in Biology departments in many universities. Major contributions in this young century in the fields of molecular biology, biochemistry and genomics were integrated with both embryology and developmental biology to provide an understanding of the molecular portrait of a “development cell.” That new integrated approach is known as stem-cell biology; it is an understanding of the embryology and development together at the molecular level using engineering, imaging and cell culture principles, and it is at the heart of this seminal book.

*Stem Cells and Regenerative Medicine: From Molecular Embryology to Tissue Engineering* is completely devoted to the basic developmental, cellular and molecular biological aspects of stem cells as well as their clinical applications in tissue engineering and regenerative medicine. It focuses on the basic biology of embryonic and cancer cells plus their key involvement in self-renewal, muscle repair, epigenetic processes, and therapeutic applications. In addition, it covers other key relevant topics such as nuclear reprogramming induced pluripotency and stem cell culture techniques using novel biomaterials.

A thorough introduction to stem-cell biology, this reference is aimed at graduate students, post-docs, and professors as well as executives and scientists in biotech and pharmaceutical companies.

Life Sciences

ISBN 978-1-60761-859-1



► [springer.com](http://springer.com)

STEM  
CELL

Appasani · Appasani  
*Eds.*



Stem Cells & Regenerative Medicine

Stem Cell Biology and Regenerative Medicine

Krishnarao Appasani  
Raghu K. Appasani  
*Editors*

# Stem Cells & Regenerative Medicine

From Molecular Embryology  
to Tissue Engineering

 Humana Press