

Principles of Cloning

Second Edition

Jose Cibelli, John Gurdon, Ian Wilmut, Rudolf Jaenisch,
Robert Lanza, Michael D. West and Keith H. S. Campbell

Fully revised edition of the authoritative book on the science of cloning

KEY FEATURES

- First and most comprehensive book on animal cloning
- Includes a broad array of information, from the early experiments in amphibians to the latest one in mammals
- Presents basic biological mechanisms on how cloning works and all their current and potential applications
- Describes an in-depth analysis of current limitations of the technology and research areas to explore
- Offers cloning applications on basic biology, agriculture, biotechnology, and medicine
- Discusses ethical and regulatory issues around cloning technology

Principles of Cloning, Second Edition is the fully revised edition of the authoritative book on the science of cloning. The book presents the basic biological mechanisms of how cloning works and progresses to discuss current and potential applications in basic biology, agriculture, biotechnology, and medicine. Beginning with the history and theory behind cloning, the book goes on to examine methods of micromanipulation, nuclear transfer, genetic modification, and pregnancy and neonatal care of cloned animals. The cloning of various species—including mice, sheep, cattle, and non-mammals—is considered as well.

The Editors have been involved in a number of breakthroughs using cloning technique, including the first demonstration that cloning works in differentiated cells done by the Recipient of the 2012 Nobel Prize for Physiology or Medicine – Dr. John Gurdon; the cloning of the first mammal from a somatic cell – Drs. Keith Campbell and Ian Wilmut; the demonstration that cloning can reset the biological clock – Drs. Michael West and Robert Lanza; the demonstration that a terminally differentiated cell can give rise to a whole new individual – Dr. Rudolf Jaenisch and the cloning of the first transgenic bovine from a differentiated cell – Dr. Jose Cibelli. The majority of the contributing authors are the principal investigators on each of the animal species cloned to date and are expertly qualified to present the state-of-the-art information in their respective areas.

While the topics of cloning and stem cell use remain controversial, research continues on many promising and varied applications, including cell replacement through nuclear transfer (CRNT), therapeutic protein production by transgenic animals, and the cloning of endangered species. Cloning is becoming an indispensable tool for the future of research. The future of cloning is bright, as it is advancing to benefit a broad array of research.



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