
Contents

Preface	v
Contributors	ix

PART I. NUCLEAR TRANSFER

1. Origin and Progress of Nuclear Transfer
In Nonmammalian Animals 3
Marie A. Di Berardino

A. Culture and Maintenance of Nuclear Transfer Embryos

2. In Vitro Maturation and Embryo Production in Cattle 35
Marc-André Sirard and Karine Coenen
3. Activation of Oocytes After Nuclear Transfer 43
Zoltán Macháty
4. Culture Medium Preferences of Pre-Implantation Cloned
Mouse Embryos 59
Björn Heindryckx, Josiane Van der Elst, and Marc Dhont
5. Maintenance of Pregnancy in Pigs With Limited Viable Embryos 79
Tim King and Paul A. De Sousa
6. Health and Neonatal Care of Bovine Clones 91
Jacqui T. Forsyth and David N. Wells

B. Nuclear Transfer Methods

7. Optimization of Procedures for Cloning by Somatic Cell
Nuclear Transfer in Mice 111
Young Gie Chung, Shaorong Gao, and Keith E. Latham
8. Production of Cloned Calves Using Roscovitine-Treated
Adult Somatic Cells as Donors 125
Kazuchika Miyoshi, Sezen Arat, and Steven L. Stice
9. A Double Nuclear Transfer Technique for Cloning Pigs 135
Irina A. Polejaeva, Shawn Walker, and Keith Campbell
10. Nuclear Transfer in Nonhuman Primates 151
Shoukhrat M. Mitalipov and Don P. Wolf
11. Cloning of Exotic/Endangered Species: *Desert Bighorn Sheep* 169
**James “Buck” Williams, Taeyoung Shin, Ling Liu,
Gabriela Flores-Foxworth, Juan Romano, Alice Blue-McClendon,
Duane Kraemer, and Mark E. Westhusin**

12. Handmade Somatic Cell Cloning in Cattle 183
Gábor Vátja, Ian M. Lewis, and R. Tayfur Tecirlioglu

C. Transgenesis

13. Genetic Modification of Sheep by Nuclear Transfer
 With Gene-Targeted Somatic Cells 199
A. John Clark, Sarah Burl, and Chris Denning
14. Transgenesis Using Nuclear Transfer in Goats 213
**Anthoula Lazaris, Rebecca Keyston, Costas N. Karatzas,
 and Carol L. Keefer**

PART II. REPROGRAMMING NUCLEI

15. Nuclear Reprogramming: *An Overview* 229
Takashi Tada
16. Expression of Imprinted Genes in Cloned Mice 237
Takashi Kohda, Fumitoshi Ishino, and Atsuo Ogura
17. Nuclear Remodeling Assay in *Xenopus* Egg Extract 247
Koichi Gonda and Nobuaki Kikyo
18. In Vitro Reprogramming of Nuclei and Cells 259
**Anne-Mari Håkelién, Thomas Küntziger, Kristine G. Gaustad,
 Anne Marstad, and Philippe Collas**
19. Techniques for Nuclear Transfer to Mouse Embryonic Stem Cells 269
Danielè Pralong and Paul J. Verma
20. Gene Expression and Methylation Patterns
 in Cloned Embryos 285
**Christine Wrenzycki, Doris Herrmann, Claudia Gebert,
 Joseph W. Carnwath, and Heiner Niemann**

PART III. CONCLUDING REMARKS

21. Are There Any Normal Clones? 307
Ian Wilmut
22. Future and Applications of Cloning 319
Alan O. Trounson

- Index 333



<http://www.springer.com/978-1-58829-280-3>

Nuclear Transfer Protocols
Cell Reprogramming and Transgenesis
Verma, P.J. (Ed.)
2006, XII, 338 p., Hardcover
ISBN: 978-1-58829-280-3
A product of Humana Press