
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
1. Approaches and Species in the History of Vertebrate Embryology <i>Nick Hopwood</i>	1
2. Manipulating and Imaging the Early <i>Xenopus laevis</i> Embryo <i>Michael V. Danilchik</i>	21
3. Manipulation of Gene Function in <i>Xenopus laevis</i> <i>Mizuho S. Mimoto and Jan L. Christian</i>	55
4. Developmental Genetics in <i>Xenopus tropicalis</i> <i>Timothy J. Geach and Lyle B. Zimmerman</i>	77
5. Embryological and Genetic Manipulation of Chick Development <i>Laura S. Gammill and Catherine E. Krull</i>	119
6. Embryological Manipulations in Zebrafish <i>Yuhua Sun, Dorota Wloga, and Scott T. Dougan</i>	139
7. Practical Approaches for Implementing Forward Genetic Strategies in Zebrafish <i>Sreelaja Nair and Francisco J. Pelegri</i>	185
8. Essential Techniques for Introducing Medaka to a Zebrafish Laboratory—Towards the Combined Use of Medaka and Zebrafish for Further Genetic Dissection of the Function of the Vertebrate Genome <i>Sean R. Porazinski, Huijia Wang, and Makoto Furutani-Seiki</i>	211
9. Ex Utero Culture and Live Imaging of Mouse Embryos <i>Anna Piliszek, Gloria S. Kwon, and Anna-Katerina Hadjantonakis</i>	243
10. Detection of Gene Expression in Mouse Embryos and Tissue Sections <i>Edwina McGlinn and Jennifer H. Mansfield</i>	259
11. Gene Targeting in the Mouse <i>Anne E. Griep, Manorama C. John, Sakae Ikeda, and Akihiro Ikeda</i>	293
12. Creating a “Hopeful Monster”: Mouse Forward Genetic Screens <i>Vanessa L. Horner and Tamara Caspary</i>	313
13. Assisted Reproductive Technology in Nonhuman Primates <i>Tien-cheng Arthur Chang and Anthony W.S. Chan</i>	337
14. Embryological Methods in Ascidians: The Villefranche-sur-Mer Protocols <i>Christian Sardet, Alex McDougall, Hitoyoshi Yasuo, Janet Chenevert, Gérard Pruliere, Rémi Dumollard, Clare Hudson, Celine Hebras, Ngan Le Nguyen, and Alexandre Paix</i>	365

15.	<i>Ciona</i> Genetics	401
	<i>Michael T. Veeman, Shota Chiba, and William C. Smith</i>	
16.	Analyses of Gene Function in <i>Amphioxus</i> Embryos by Microinjection of mRNAs and Morpholino Oligonucleotides	423
	<i>Linda Z. Holland and Takayuki Onai</i>	
17.	Reptile Embryology	439
	<i>Matthew K. Vickaryous and Katherine E. McLean</i>	
18.	Reproductive and Developmental Manipulation of the Marsupial, the Tammar Wallaby <i>Macropus eugenii</i>	457
	<i>Marilyn B. Renfree and Andrew J. Pask</i>	
19.	Mutant Generation in Vertebrate Model Organisms by TILLING	475
	<i>Sylke Winkler, Nicola Gscheidel, and Michael Brand</i>	
20.	Inducing High Rates of Targeted Mutagenesis in Zebrafish Using Zinc Finger Nucleases (ZFNs)	505
	<i>Jasmine M. McCammon, Yannick Doyon, and Sharon L. Amacher</i>	
21.	Derivation of Mouse Embryonic Stem Cell Lines from Blastocysts Produced by Fertilization and Somatic Cell Nuclear Transfer	529
	<i>Zhongde Wang</i>	
22.	Cloning Mice and ES Cells by Nuclear Transfer from Somatic Stem Cells and Fully Differentiated Cells	551
	<i>Zhongde Wang</i>	
23.	Keeping Two Animal Systems in One Lab – A Frog Plus Fish Case Study	571
	<i>Hazel Sive</i>	
24.	Laboratory Guidelines for Animal Care	579
	<i>Marcelo Couto</i>	
	<i>Index</i>	601

Vertebrate Embryogenesis

Embryological, Cellular, and Genetic Methods

Pelegri, F. (Ed.)

2011, XI, 605 p. 92 illus., 9 illus. in color., Hardcover

ISBN: 978-1-61779-209-0

A product of Humana Press