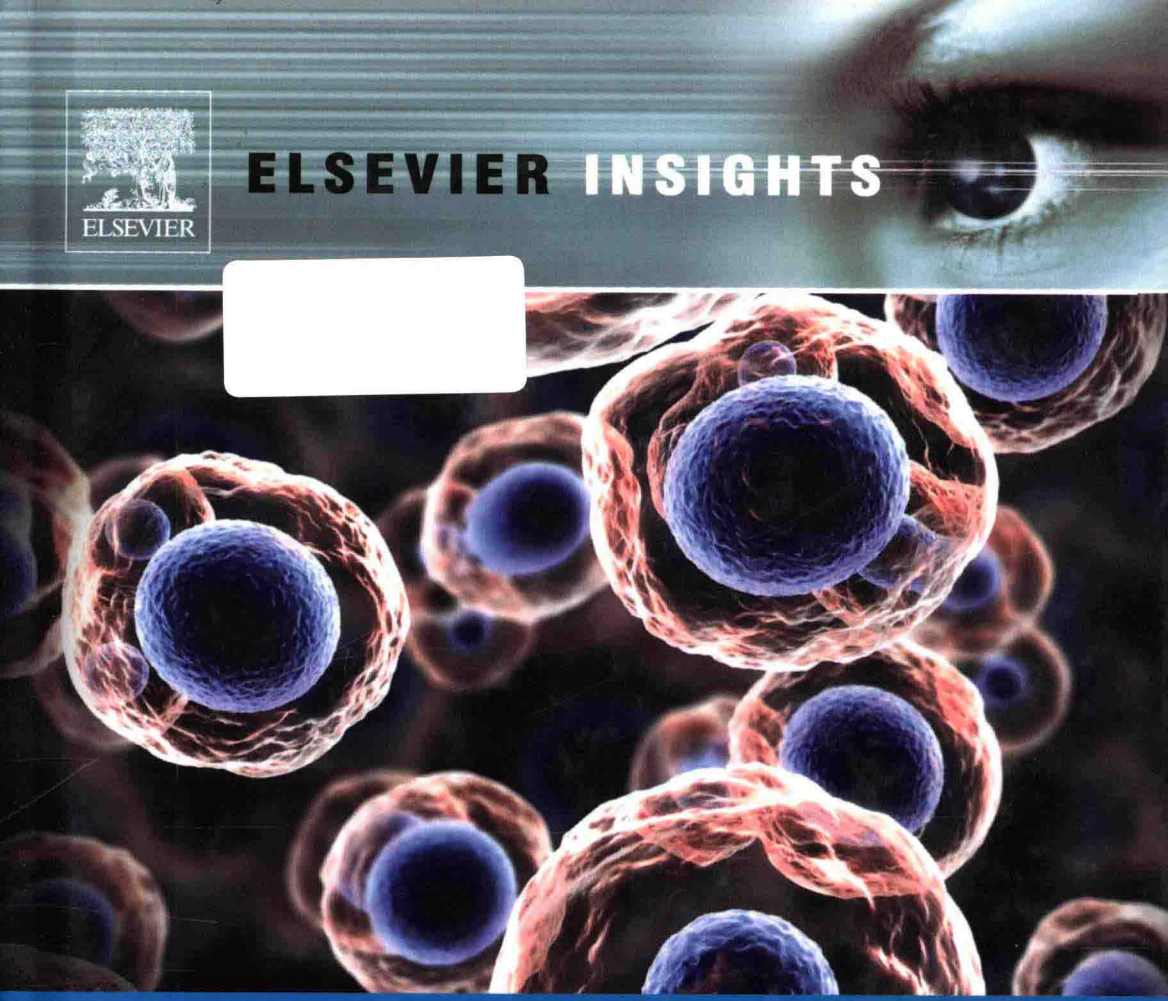

ELSEVIER INSIGHTS

TRANSGENIC ANIMAL TECHNOLOGY

A LABORATORY HANDBOOK

THIRD EDITION

Edited by
CARL A. PINKERT

Transgenic Animal Technology

A Laboratory Handbook

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Carl A. Pinkert

The University of Alabama
Tuscaloosa, AL, USA

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Preface

In discussions regarding the third edition of "Transgenic Animal Technology: A Laboratory Handbook," we wrestled with the changing tide of technologies and a revision of the title for 2014. It has, after all, been over two decades since the original title was established. Was *transgenic* now a limiting term? Were the embryological, animal husbandry, reproductive biology, and molecular techniques something that should be highlighted in some bolder fashion? Yet it remained true that transgenic animal technologies and the ability to introduce and modify functional genes in animal models continue to represent powerful, dynamic, and evolving tools for dissecting complex biological processes. The questions to be addressed span the scientific spectrum from biomedical and biological applications to production agriculture. And yes, as transgenic methodologies continue to evolve, they have dramatically influenced a cross section of disciplines and are recognized as instrumental in expanding our understanding of gene expression, regulation, and function.

There are many general reviews on the topic of animal transgenesis and genetic engineering that are indeed very useful and timely. However, aside from the manuals devoted to mouse embryology, a single text illustrating the methodologies employed by leading laboratories in their respective disciplines had not previously been compiled prior to the first edition of this text. This third edition covers technical aspects of gene transfer in animals—from molecular methods to whole animal considerations across a host of species. Consequently, we kept the title and focus for this handbook, and it is envisioned as a bridge for researchers and a tool to facilitate training of students and technicians in the development and use of numerous transgenic animal model systems.

Clearly, much has changed from a technological perspective since the first two editions in 1994 and 2002. With this in mind, I would like to acknowledge all of the contributing authors both past and present, as well as those individuals in my laboratory who have assisted over the course of these three editions. In preparation of the three editions, a number of colleagues have graciously provided assistance in reviewing specific chapters and in some cases providing additional data for consideration prior to publication, for which we are all most grateful. I would also like to acknowledge all of my mentors, colleagues, and those who came through my laboratory over the years. Lastly, I am appreciative of the consideration and help provided by Halima Williams, Radhakrishnan Lakshmanan and their colleagues at Elsevier for facilitating publication of this third edition.

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