

# ANTIBODIES

VOLUME 2: NOVEL  
TECHNOLOGIES AND  
THERAPEUTIC USE

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## VOLUME 2: NOVEL TECHNOLOGIES AND THERAPEUTIC USE

Edited by

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*Littlebourne, Kent, United Kingdom*

**Springer Science+Business Media, LLC**

Library of Congress Cataloging-in-Publication Data

Antibodies / edited by G. Subramanian.

p. ; cm.

Includes bibliographical references and index.

Contents: v. 1. Production and purification -- v. 2. Novel technologies and therapeutic use.

(divisible set)

1. Monoclonal antibodies--Synthesis. 2. Monoclonal antibodies--Therapeutic use. 3.

Monoclonal antibodies--Biotechnology. I. Subramanian, G., 1935-

[DNLM: 1. Antibodies, Monoclonal--isolation & purification. 2. Antibodies,

Monoclonal--therapeutic use. 3. Biotechnology--methods. 4. Chromatography--methods.

QW 575.5.A6 A6283 2004]

TP248.65.M65A55 2004

615'.37--dc22

2003069160

ISBN 978-1-4613-4702-6

ISBN 978-1-4419-8877-5 (eBook)

DOI 10.1007/978-1-4419-8877-5

©2004 Springer Science+Business Media New York

Originally published by Kluwer Academic Publishers/Plenum Publishers, New York in 2004

Softcover reprint of the hardcover 1st edition

<http://www.wkap.nl/>

10 9 8 7 6 5 4 3 2 1

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## **Preface**

It is now over one hundred years since von Behring and Kitasato first concluded experiments that led to the use of passive immunisation, employing antibodies raised in animals against tetanus and diphtheria toxins. The advancement of technology both in manufacturing purity product in a cost effective way and the clinical research has proved that antibodies are one of the most successful products in biotechnology.

Monoclonal antibodies account for between one-third and one-half of all pharmaceutical products in development and human clinical trials. Both the nature of monoclonal antibody therapies and the relatively large size of the monoclonal antibody dictate the production requirements, for many of these therapeutics the monoclonal antibody product will be 100 kilogrammes or more per year. It is widely acknowledged that there is currently a worldwide shortage of biomanufacturing capacity, and the active pharmaceutical ingredient material requirements for these products are expected to increase. Thus the industry is looking for new sources and extensive studies are being carried out not only for alternative technology to meet the needs but also to reveal the new therapeutic applications of antibodies.

This book brings to the forefront current advances in novel technologies for the manufacturing of monoclonal antibodies and also their extensive clinical importance. The first four chapters give an overview of the new technologies and the successful application in the manufacture of monoclonal antibodies with clinical purity. The next chapters address the application of antibodies in cancer therapy and functional genomic therapy. The last chapter projects the importance of antibodies and the prospects of antibody engineering and therapy for the future.

It is my hope that this book will bring together accumulated knowledge in a way which will promote the advancement of the antibody field, which will continue to grow and develop new antibodies that are useful to society at large.

I gratefully acknowledge the authors for their time and motivation in preparing their contributions, without which this book would not have been possible. I should be most grateful for any suggestions, which could serve to improve future editions of this book

Finally I would like to thank Jo Lawrence of Kluwer Academic/Plenum for her keen interest and help throughout the completion of this book.

*G. Subramanian*

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