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## Preface

The use of an appropriate method for studying or diagnosing breast cancer is imperative for basic research and clinical practice. Although there are many books tackling breast cancer on the market already, none are written systematically for the modern molecular biological technologies spanning from basic research to clinical practice. The focus of this book is to provide resources, ideas, and bench manuals for the study of breast cancer.

This book contains five parts including methods used in clinical laboratory for diagnosis (Detection of Molecular Markers of Breast Cancer), methods used in both clinical and research laboratories for testing genetic alterations (Genetic Detection for Breast Cancer), methods used to isolate breast cancer cells including circulating cancer cells and breast cancer stem cells (Isolation of Breast Cancer Cells), methods used to study the behavior of breast cancer cells (In Vitro Experimental models for Breast Cancer), and methods used for mimicking human breast cancer in a living organism (In Vivo Experimental Models for Breast Cancer). Each part includes 3–11 different assays for readers to use based on their preferences. This book also includes several recently developed techniques for the study of breast cancer progression.

Each chapter of this book was written by professionals who have extensive experience on the corresponding techniques. Although most of these techniques can be found in the published literature, the chapters described here are more comprehensive with detailed step-by-step procedures so readers can successfully carry out the experiments without difficulty. In addition, extensive explanations for critical steps are described in the Notes section of each chapter to ensure the successful completion of the experiments described. These notes are usually essential for dependable results.

This book will be a valuable handbook for both graduate and advanced undergraduate students of biological sciences as well as scientists, technicians, and physicians working in the academic, hospital, or pharmaceutical industry aimed at studying or diagnosing breast cancer. Our goal is to provide this book as a handbook for researchers who routinely work on breast cancer research. I ask the readers to send any corrections or missing information that can be revised in future editions.

Finally, I would like to thank the many authors for their thoughtful and timely contributions. I also like to extend my appreciation to the Series Editor, Professor John Walker, and the Springer staff, especially Dr. David Casey, for their contributions to the development of this book.

I hope you find this book to be valuable for your research.

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Breast Cancer

Methods and Protocols

Cao, J. (Ed.)

2016, XII, 332 p. 71 illus., 58 illus. in color., Hardcover

ISBN: 978-1-4939-3442-3

A product of Humana Press