
Preface

Since the first edition of *Epigenetics Protocols* was published in 2004, the field of epigenetics has continued to have a major role at the forefront not only of molecular biology, but also of medical genetics and clinical medicine. Few disciplines have experienced growth comparable to that we have witnessed for epigenetics in the past decade. I believe that much of the innovative force driving the remarkable development of epigenetics can be attributed to a steady flow of novel techniques in this field. Due to the rapid pace of development of new methods in epigenetics and the exponentially increasing interest in this area, a second edition of *Epigenetics Protocols* seems timely. Moreover, for the same reasons, the second edition differs significantly from the first edition as new methods have been devised and new areas of focus have evolved.

It would not be realistic to attempt to amass all of the epigenetic techniques that have been invented in one book. Rather, the goal of this volume has been to highlight select techniques that have been mainstays in the field and to also cover methods that are especially relevant to extant discoveries in epigenetics. Leading the way in the renaissance this field is currently enjoying is the advent of numerous tools for studying the epigenome, both in terms of deriving experimental findings and in analyzing these data to unravel the power of epigenetic processes to influence phenotypic expression of the genome.

The two broad areas of epigenetics that receive the most attention in this book are DNA methylation and chromatin modifications. These major epigenetic processes can be further subdivided into topics related to gene- or region-specific analyses, genome-wide studies, and analyses of modulation or measurement of the mediators of DNA methylation and chromatin modifications. Lastly, this volume covers the complex topic of computational methods for epigenetic analyses which is essential to a complete understanding of the vast body of information that is being derived with the use of these newly developed tools.

The protocols detailed in this book are intended to provide advanced students, basic scientists, and clinical researchers as well as clinicians and biotechnology investigators with a contemporary set of tools that can be applied to understanding epigenetics. The methods covered in *Epigenetics Protocols II* will continue to drive the exciting field of epigenetics and facilitate even more fascinating discoveries of the many important roles of epigenetics in basic molecular biology, medical sciences, and clinical applications.

Birmingham, AL, USA

Trygve O. Tollefsbol



<http://www.springer.com/978-1-61779-315-8>

Epigenetics Protocols

Tollefsbol, T. (Ed.)

2011, XI, 332 p. 54 illus., Hardcover

ISBN: 978-1-61779-315-8

A product of Humana Press