

METHODS IN MOLECULAR BIOLOGY™

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The Myc Gene

Methods and Protocols

Edited by

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 **Humana Press**

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Preface

Many brilliant scientists have been working on Myc since its discovery 30 years ago, providing tremendous and invaluable insights into its mechanism of action. However, after a quarter of a century, this infamous pleiotropic transcription factor still represents a challenging but rewarding area of research. Myc controls multiple cellular functions, including cell proliferation, growth, differentiation, and death, both directly and indirectly, through its modulation of downstream transcriptional programs. Such secondary programs not only ramify into all aspects of cell and tissue biology but they also feed back in a context and cell-type specific way to modulate how Myc acts. Despite its wide variety of physiological functions, Myc is mostly known for the role it plays in the development of cancer. Indeed, Myc overexpression or deregulation is associated with more than half of human cancers—a number that is possibly an underestimation. Because of its crucial role in governing intracellular and extracellular aspects of tumorigenesis, Myc represents an obvious and provocative candidate for targeted cancer therapy.

In this book *Myc: Methods and Protocols*, experts in the field summarize the standard and novel techniques that allow the studying of Myc mechanism of action in normal and cancer cells, in vitro and in vivo, in one succinct manual. It also offers a glance at therapeutic approaches for targeting Myc, which will potentially translate soon into clinical applications. This book is directed to biochemists, cell biologists, molecular biologists, medical doctors, and any researcher who is interested in exploring the Myc world. Chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls.

This book has been made possible by the wonderful contribution of several colleagues in the Myc field, whose work has been invaluable. To them goes our deepest gratitude for making this project so enjoyable. We would also like to thank our day-to-day laboratory colleagues and friends for their encouragement and moral support. Finally, our warmest welcome goes to those readers who, thanks to this book, will start the fascinating trip into the Myc world. The adventure has just begun!

Barcelona, Spain
Cambridge, UK

Laura Soucek
Nicole M. Sodir

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