The Nuclear Receptor Superfamily

Methods and Protocols

Edited by

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Humana Press
Preface

It is just over 20 years since the first steroid receptor cDNAs were cloned, a development that led to the concept of a superfamily of ligand-activated transcription factors: The nuclear receptors. Nuclear receptors share a common architecture at the protein level, but a remarkable diversity is observed in terms of natural ligands and xenobiotics that bind to and regulate receptor function. Natural ligands for nuclear receptors are generally lipophilic in nature and include steroid hormones, bile acids, fatty acids, thyroid hormones, certain vitamins, and prostaglandins. A significant proportion of the family members have been described as orphans, as the natural ligand, if it exists, remains to be identified. Nuclear receptors act principally to directly control patterns of gene expression and play vital roles during development and in the regulation of metabolic and reproductive functions in the adult organism. Since the original cloning experiments, considerable progress has been made in our understanding of the structure, mechanisms of action, and biology of this important family of proteins. The aims of this volume of Methods in Molecular Biology are to describe a range of molecular, structural, and cell biological protocols currently used to investigate the structure–function of nuclear receptors, together with experimental approaches that may lead to new therapeutic strategies for treating nuclear receptor-associated diseases.

This volume will be of great benefit and use to those starting out in the nuclear receptor research field (life sciences graduate students and postdoctoral fellows) as well as to more established researchers who wish to apply different methods to a particular receptor/research problem. The volume will also be of use to medical students and clinicians undertaking research in this ever-growing field of study.

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