Preface

All three peroxisome proliferator-activated receptor (PPAR) subtypes—PPARα, PPARβ/δ, and PPARγ—share a high degree of structural homology yet they differ in function, tissue distribution, and ligand specificity. Since these receptors play critical roles as regulators of numerous physiological as well as pathophysiological pathways, significant efforts are currently underway to fully characterize their functioning and to develop safer and more effective PPAR modulators as therapeutic agents to treat a myriad of diseases and conditions.

This volume of *Methods in Molecular Biology* contains details of experimental protocols essential to the task of investigating these receptors. This provides researchers in the PPAR arena with a wide array of advanced techniques which, no doubt, will prove to be valuable to their efforts of advancing knowledge in the field. Chapters contributed by renowned experts contain details of methods ranging from the cloning of receptors to their knockdown. In addition, experimental protocols to explore posttranslational modifications of PPARs and coactivators as well as receptor subcellular localization are included. Furthermore, specific steps on how to screen a chemical moiety for its ability to modulate PPAR subtype activities and the quantification of ligand metabolites in biological samples are presented. In addition, methods to evaluate an emerging facet in PPAR research, namely the involvement of these receptors in behavior functions, are also detailed in this volume.

We are grateful to Dr. John Walker, the *Methods in Molecular Biology* series editor, for his kind invitation to organize this volume devoted to PPARs. We are also most indebted to all colleagues who have shared their expertise and vast experience with the world-wide PPAR research community through the chapters contributed to this volume.

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