

PREFACE

G protein-coupled receptors (GPCRs) represent the largest family of cell surface receptors and are responsible for mediating the signals from a diverse group of signaling molecules. GPCRs function to integrate these extracellular signals and transduce them into intracellular signals to alter various aspects of cellular function. In order to accomplish this rapidly, efficiently, and selectively, GPCRs interact with a wide range of mediators, including neighboring GPCRs in oligomeric arrays, which have important regulatory effects on eventual signaling events. The study of the GPCR signaling complex and signaling pathways, shown to dynamically regulate so many aspects of intracellular function, has rapidly expanded the number of proteins shown to interact with GPCRs. The analysis of such GPCR systems therefore requires methodologies that can study receptor–receptor and receptor–protein interactions in biochemical and cell biological contexts. A variety of methodologies have been applied to the study of such interactions, and we have assembled together a spectrum of such methods in this book. The authors are leading authorities in their fields and have used and often pioneered certain approaches to the study of GPCR interactions. The authors have provided the principles guiding their approaches, in addition to methodological details and practical tips. The chapters are organized to cover a range of techniques analyzing the receptor itself and associated and interacting proteins. The methods presented here should be of interest to scientists studying GPCR signal transduction systems using biochemical, pharmacological, and cell biological approaches.

We thank the authors for their state-of-the-art contributions, Dr. Robert Lefkowitz for the Foreword and Dr. David Sibley, Series Editor, for his valuable input. Lastly, we express sincere gratitude to our administrative assistant Susan Desveaux for her dedicated efforts in ensuring the completion of the volume.

We would like to dedicate this book to all of our graduate students, postdoctoral fellows, and research associates for their commitment to finding and perfecting the best methodologies for the experimental purpose.

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Toronto, Ontario, Canada
October 2004