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Nota di contenuto	Molecular Biology in Medicinal Chemistry; Contents; Preface; Foreword; Contributors; Part I Molecular Targets; 1 Cellular Assays in Drug Discovery; 1.1 Introduction; 1.1.1 Positioning Cellular Assays; 1.1.2 Impact on Drug Discovery; 1.1.3 Classification of Cellular Assays; 1.1.4 Progress in Tools and Technologies for Cellular Compound Profiling; 1.2 Membrane Proteins and Fast Cellular Responses; 1.2.1 Receptors; 1.2.1.1 FLIPR Technology for Detection of Intracellular Calcium Release; 1.2.1.2 Competitive Immunoassay for Detection of Intracellular cAMP 1.2.1.3 Enzyme Fragment Complementation (EFC) Technology1.2.2 Membrane Transport Proteins; 1.2.2.1 Ion Channels; 1.2.2.2 MDR Proteins; 1.3 Gene and Protein Expression Profiling in High-throughput Formats; 1.3.1 Reporter Gene Assays in Lead Finding; 1.3.2 Reporter Gene Assays in Lead Optimization; 1.4 Spatio-temporal Assays and Subpopulation Analysis; 1.4.1 Phosphorylation Stage-specific

Antibodies; 1.4.2 Target-protein-specific Antibodies; 1.4.3 Protein-GFP Fusions; 1.4.4 Fluorescence Resonance Energy Transfer (FRET)
1.4.5 GPCR Activation using Bioluminescence Resonance Energy Transfer (BRET)1.4.6 Protein Fragment Complementation Assays (PCA); 1.5 Phenotypic Assays; 1.5.1 Proliferation/Respiration/Toxicity; 1.5.2 Apoptosis; 1.5.3 Differentiation; 1.5.4 Monitoring Cell Metabolism; 1.5.5 Other Phenotypic Assays; Acknowledgments; References; 2 Gene Knockout Models; 2.1 Introduction; 2.2 Gene Knockout Mice; 2.2.1 ES Cells; 2.2.2 Targeting Vector; 2.2.3 Selection of Recombinant ES Cells; 2.2.4 Injection of Recombinant ES Cells into Blastocysts and Blastocyst Transfer to Pseudopregnant Recipients
2.2.5 Chimeras and F1 and F2 Offspring2.3 Tissue-Specific Gene Expression; 2.3.1 Ligand-Activated CRE Recombinases; 2.3.2 The Tetracycline/Doxycycline-Inducible Expression System; 2.4 Transgenic Mice; 2.5 Targeted Gene Disruption in Drosophila; 2.6 Targeted Gene Knockdown in Zebrafish; 2.7 Targeted Caenorhabditis Elegans Deletion Strains; References; 3 Reporter Gene Assay Systems for the Investigation of G-protein-coupled Receptors; 3.1 Receptors and Cellular Communication; 3.1.1 Ion Channel-linked Receptors; 3.1.2 Enzyme-linked Cell-surface Receptors; 3.1.3 GPCRs
3.2 Affinity and Activity of GPCR Ligands3.3 The Role of Transcription Factors in Gene Expression; 3.3.1 CREB; 3.3.2 SRF; 3.3.3 STAT Proteins; 3.3.4 c-Jun; 3.3.5 NF-AT; 3.4 Reporter Genes; 3.4.1 CAT; 3.4.2 -Gal; 3.4.3 -Glucuronidase; 3.4.4 AP; 3.4.5 SEAP; 3.4.6 -Lactamase; 3.4.7 Luciferase; 3.4.8 GFP; 3.5 Reporter Gene Assay Systems for the Investigation of GPCRs; 3.5.1 Application of Luciferase as a Reporter Gene; 3.5.2 Application of other Reporter Genes for the Investigation of GPCRs; References; 4 From the Human Genome to New Drugs: The Potential of Orphan G-protein-coupled Receptors
4.1 Introduction

Sommario/riassunto

This readily comprehensible book explains the identification of molecular targets via cellular assays, reporter genes or transgenic models, as well as surveying recent advances in the synthesis, separation and analysis of drugs. A special section is devoted to molecular genetics methods.With its examination of these novel methods and generous practical advice, this is essential reading for all pharmaceutical chemists, molecular biologists and medical researchers using molecular methods to study drugs and their action.