Lipid Binding Proteins Within Molecular And Cellular Biochemistry 1st Edition

#Lipid binding proteins #Molecular and cellular biochemistry #Protein-lipid interactions #Biochemistry 1st edition #Cellular lipid metabolism

Explore the fundamental roles of lipid binding proteins within the intricate landscape of molecular and cellular biochemistry. This 1st edition offers comprehensive insights into their structure, function, and critical involvement in various cellular processes and lipid metabolism pathways, providing an essential resource for researchers and students.

Lipid Binding Proteins within Molecular and Cellular Biochemistry

The breadth of modern biology is characterized by a comprehension of phenomena at many levels of organization. Such levels of understanding range from the organismal to the molecular. It is when all these levels can be discussed together that a sense of true achievement begins to be felt. The topical area of fatty acid transport and metabolism was the focus of the Third International Conference on Lipid-Binding Proteins held at the University of Minnesota in May 1997. This volume contains a sampling of the proceedings of this meeting.

Cellular Lipid Binding Proteins

It is well established that cellular lipid binding proteins serve central roles in cellular lipid uptake and metabolism. Evidence has been presented that various metabolic diseases, such as hyperlipidemia, atherosclerosis, insulin resistance, and diabetes, are characterized by malfunctioning or deficiencies in cellular lipid binding proteins. For better understanding of the action of lipids as signaling compounds and the role of lipids in intermediary metabolism, it is essential to have detailed knowledge of the interactions between lipids and their cognant binding proteins. In view of this growing interest in lipid-protein interaction, the 4th International Conference on Lipid Binding Proteins was held in Maastricht, The Netherlands, in June 2001. The proceedings of the previous three meetings have been published in Molecular and Cellular Biochemistry. The present focused issue of Molecular and Cellular Biochemistry comprises selected papers based on the lectures and posters presented during the 4th conference, and provides insight into the significance of these proteins for the functioning of the cell.

Cellular Fatty Acid-binding Proteins

Twenty years have elapsed since cytoplasmic proteins exhibiting high-affinity binding of long-chain fatty acids were first identified (Ockner et al., Science 177:56-58, 1972). These cellular fatty acid-binding proteins (FABPs) are now well established to comprise a ligand-defined group of macromolecules belonging to a family of cytoplasmic lipid binding proteins. Unique features of the FABPs are the existence of distinct types of FABP and that these are found in a variety of tissues in remarkable abundance, with some cells expressing more than one type. The physiological significance of the FABPs has only partly been elucidated. By increasing the cytoplasmic solubilization of fatty acids, the cellular FABPs are considered to function primarily in intracellular fatty acid transport, but may also be assigned important regulatory roles in cellular lipid homeostasis as well as in the modulation of cell growth and differentiation. The broad interests in cellular FABPs has led to the organization of the 1st International Workshop on Fatty Acid-Binding Protein, held in Maastricht, the Netherlands, in 1989. Prompted by the success of the first meeting, the 2nd International Workshop on Fatty-Acid-Binding Proteins, which was held again in Maastricht, on August 31 and September 1, 1992, brought together scientific scpecialists in the field of FABP research for two days of intensive and fruitful discussion. This volume is a collection of selected papers from this conference, and thus provides the state-of-the-art knowledge of cellular FABPs. The contributors to this issue represent pioneering as well as new investigators, and also reflect the multidisciplinary nature of research in this exciting and rapidly progressing field.

Cellular Fatty Acid-Binding Proteins II

Knowledge of cholesterol and its interaction with protein molecules is of fundamental importance in both animal and human biology. This book contains 22 chapters, dealing in depth with structural and functional aspects of the currently known and extremely diverse unrelated families of cholesterol-binding and cholesterol transport proteins. By drawing together this range of topics the Editor has attempted to correlate this broad field of study for the first time. Technical aspects are given considerable emphasis, particularly in relation cholesterol reporter molecules and to the isolation and study of membrane cholesterol- and sphingomyelin-rich "raft" domains. Cell biological, biochemical and clinical topics are included in this book, which serve to emphasize the acknowledged and important benefits to be gained from the study of cholesterol and cholesterol-binding proteins within the biomedical sciences and the involvement of cholesterol in several clinical disorders. It is hoped that by presenting this topic in this integrated manner that an appreciation of the fact that there is much more that needs to be taken into account, studied and understood than the widely discussed "bad and good cholesterol" associated, respectively, with the low- and high-density lipoproteins, LDL and HDL.

Cellular Fatty Acid-binding Proteins

In 17 contributions by leading research groups, this first comprehensive handbook in the field covers the interactions between proteins and lipids that make the fabric of biological membranes from every angle. It examines the relevant hermodynamic and structural issues from a basic science perspective, and goes on to discuss biochemical and cell biological processes. The book covers physical principles as well as mechanisms of membrane fusion and fission. Additionally, chapters on bilayer structure and protein-lipid interactions as well as on how proteins shape lipids and vice versa, membrane penetration by toxins, protein sorting, and allosteric regulation of signal transduction across membranes make this a valuable information source for researchers in academia and industry.

Cholesterol Binding and Cholesterol Transport Proteins:

Protein-lipid interactions as a field of study is now a mature area, and this volume of New Comprehensive Biochemistry has been published with two objectives in mind. Firstly, to look to the future, and try to envisage how the subject may develop in the near to medium future. Secondly, to present contrasting or complementary views on the same system. For example, the acetylcholine receptor is discussed from a predominantly structural aspect by Barrantes, and from the kinetic standpoint by Rankin, et al. The volume not only gives an update on specific aspects of the field, but also shows the way in which the phenomenon of protein-lipid interactions is now seemingly infiltrating many areas of biomembrane research, from recombinant DNA studies, protein insertion and assembly and reconstitution considerations to structural studies of membrane proteins.

Protein-Lipid Interactions

Biological membranes have long been identified as key elements in a wide variety of cellular processes including cell defense communication, photosynthesis, signal transduction, and motility; thus they emerge as primary targets in both basic and applied research. This book brings together in a single volume the most recent views of experts in the area of protein–lipid interactions, providing an overview of the advances that have been achieved in the field in recent years, from very basic aspects to specialized technological applications. Topics include the application of X-ray and neutron diffraction, infrared and fluorescence spectroscopy, and high-resolution NMR to the understanding of the specific interactions between lipids and proteins within biological membranes, their structural relationships, and the implications for the biological functions that they mediate. Also covered in this volume are the insertion of proteins and peptides into the membrane and the concomitant formation of definite lipid domains within the membrane.

Cellular Fatty Acid-binding Proteins II.

The Protein Reviews series serves as a publication vehicle for reviews that focus on crucial contemporary and vital aspects of protein structure, function, evolution and genetics. Volume 20, Purinergic Receptors, has ten chapters. The first five chapters deal with various aspects of membrane binding. The first chapter focuses on the phox-homology (PX) domain, which is a phosphoinositide-binding domain conserved in all eukaryotes and present in forty-nine human proteins. The next chapter deals with the modeling of PH domains/phosphoinositides interactions. This is followed by a chapter on BAR domain proteins regulate Rho GTPase signaling. The BAR (Bin–Amphiphysin–Rvs) domain is a membrane lipid binding domain present in a wide variety of proteins, often proteins with a role in Rho-regulated signaling pathways. The fourth article presents AP180 N-terminal homology (ANTH) and Epsin N-terminal homology (ENTH) domains and discusses their physiological functions and involvement in disease. The fifth article reviews the polyphosphoinositide-binding domains and presents insights from peripheral membrane and lipid-transfer proteins. This is followed by a chapter on the physiological functions of phosphoinositide-modifying enzymes and their interacting proteins in Arabidopsis, then by a chapter on the molecular mechanisms of Vaspin action in various tissues such as adipose tissue, skin, bone, blood vessels, and the brain. The eighth chapter deals with exceptionally selective substrate targeting by the metalloprotease anthrax lethal factor followed by an article on Salmonella, E. coli, and Citrobacter type III secretion system effector proteins that alter host innate immunity. The last chapter presents New techniques to study intracellular receptors in living cells, with insights into RIG-I-like receptor signaling. Volume 20 is intended for research scientists, clinicians, physicians and graduate students in the fields of biochemistry, cell biology, molecular biology, immunology and genetics.

Molecular Biology of The Cell

Liposomes are cellular structures made up of lipid molecules. Important as a cellular model in the study of basic biology, liposomes are also used in clinical applications such as drug delivery and virus studies. Liposomes in Biochemistry Liposomes in Molecular Cell Biology Liposomes in Molecular Virology

Protein-Lipid Interactions

Biological membranes provide the fundamental structure of cells and viruses. Because much of what happens in a cell or in a virus occurs on, in, or across biological membranes, the study of membranes has rapidly permeated the fields of biology, pharmaceutical chemistry, and materials science. The Structure of Biological Membranes, Third Edition provides readers with an understanding of membrane structure and function that is rooted in the history of the field and brought to the forefront of current knowledge. The first part of the book focuses on the fundamentals of lipid bilayers and membrane proteins. Three introductory chapters supply those new to the field with the tools and conceptual framework with which to approach the state-of-the-art chapters that follow. The second part of the book presents in-depth analyses of focused subjects within the study of membranes, covering topics that include: Phase behavior of lipid bilayers Lipid bilayers as an isolated structure Cholesterol’s role in cell biology Lateral organization of membranes The role of membrane lipids in initial membrane protein folding Membrane protein synthesis and assembly of oligomeric membrane proteins Membrane protein stability with relationships to function and protein turnover Membrane protein function using a transport protein Interactions between membrane proteins and membrane lipids A final chapter pulls together many of the topics, examining in detail the complexity inherent in the synthesis and assembly of lipids and proteins in mitochondrial membranes. With contributions from leading researchers, this completely revised and updated third edition reflects recent advances in the field of biological membranes. It

offers a valuable resource for students, as well as structural biologists, biophysicists, cell biologists, biochemists, and researchers in the pharmaceutical and biotechnology industries. What's New in This Edition: Three accessible chapters introduce students to the field of biological membranes Completely revised and updated chapters present current topics in membrane research

Protein-Lipid Interactions

Current Topics in Membranes is targeted toward scientists and researchers in biochemistry and molecular and cellular biology, providing the necessary membrane research to assist them in discovering the current state of a particular field and in learning where that field is heading. This volume offers an up to date presentation of current knowledge in the field of Lipid Domains. Written by leading experts Contains original material, both textual and illustrative, that should become a very relevant reference material The material is presented in a very comprehensive manner Both researchers in the field and general readers should find relevant and up-to-date information

Protein Reviews – Purinergic Receptors

The second edition of this book on lipids, lipoprotein and membrane biochemistry has two major objectives - to provide an advanced textbook for students in these areas of biochemistry, and to summarise the field for scientists pursuing research in these and related fields. Since the first edition of this book was published in 1985 the emphasis on research in the area of lipid and membrane biochemistry has evolved in new directions. Consequently, the second edition has been modified to include four chapters on lipoproteins. Moreover, the other chapters have been extensively updated and revised so that additional material covering the areas of cell signalling by lipids, the assembly of lipids and proteins into membranes, and the increasing use of molecular biological techniques for research in the areas of lipid, lipoprotein and membrane biochemistry have been included. Each chapter of the textbook is written by an expert in the field, but the chapters are not simply reviews of current literature. Rather, they are written as current, readable summaries of these areas of research which should be readily understandable to students and researchers who have a basic knowledge of general biochemistry. The authors were selected for their abilities both as researchers and as communicators. In addition, the editors have carefully coordinated the chapters so that there is little overlap, yet extensive cross-referencing among chapters.

Liposomes

There are scattered reports in the published literature citing relationships between actin, actin-binding proteins and disease. This volume brings this information together for the first time, with a focus on human disorders. The volume is relevant to a wide readership including cell biologists interested in understanding how structural and functional changes in proteins impact on the organism as a whole.

The Structure of Biological Membranes, Third Edition

Disorders of Protein Synthesis, Volume 132 in the Advances in Protein Chemistry and Structural Biology series, highlights new advances in the field, with this new volume presenting interesting chapters written by an international board of authors. Provides the authority and expertise of leading contributors from an international board of authors Presents the latest release in the Advances in Protein Chemistry and Structural Biology series Includes the latest information on disorders of protein synthesis

Lipid Domains

Membrane Proteins, Volume 128 in the Advances in Protein Chemistry and Structural Biology series highlights new advances in the field, with this new volume presenting interesting chapters written by an international board of authors. Provides the authority and expertise of leading contributors from an international board of authors Presents the latest release in the Advances in Protein Chemistry and Structural Biology series Updated release includes the latest information on the membrane proteins

Biochemistry of Lipids, Lipoproteins and Membranes

This book updates the latest development in production, stabilization and structural analysis techniques of membrane proteins. This field has made significant advances since the elucidation of the first 3-D structure of a recombinant G Protein Coupled Receptor (GPCR), rhodopsin, with the structure

of several more GPCRs having been solved in the past five years. In fact, the 2012 Nobel Prize in Chemistry was awarded for groundbreaking discoveries on the inner workings of GPCRs. This book is essential reading for all researchers, biochemists and crystallographers working with membrane proteins, who are interested by the structural characterization of their favorite protein and who wish to follow the expression, migration, modifications and recycling of a membrane protein.

Actin-Binding Proteins and Disease

Lipobiology is an interdisciplinary field which incorporates critical aspects of lipid and lipoprotein chemistry into the disciplines of cell biology and physiology. During the last decade, advances in our understanding of the structure and function of lipids, biological membranes and lipid-derived second messengers have underscored the importance of lipids in the regulation of cellular function. This series focuses on salient aspects of the role of lipids in metabolic regulation and cellular activation, with emphasis on emerging concepts and technologies. One goal of this series is to formulate cohesive criteria upon which a foundation for the evaluation of recent work can be based and future directions of research identified.

Disorders of Protein Synthesis

This is the first compilation of protein lipidation enzymes. This volume summarizes recent dramatic developments regarding enzymes responsible for protein lipidation, a process critical for a number of physiological functions, including cell proliferation and morphology. Inhibitors of protein lipidation have recently been shown to be useful as anticancer drugs. Enzymatic mechanisms, mutation-al analysis, and structural studies are presented. The enzymatic mechanisms of protein lipidation Three-dimensional structures of protein farnesytransferase, protein geranylgeranytransferase II, and n-myristoryltransferase

Membrane Proteins

Protein conversion from a water-soluble native conformation to the insoluble aggregates and fibrils, which can deposit in amyloid plaques, underlies more than 20 human diseases, representing a major public health problem and a scientific challenge. Such a conversion is called protein misfolding. Protein misfolding can also involve errors in the topology of the folded proteins and their assembly in lipid membranes. Lipids are found in nearly all amyloid deposits in vivo, and can critically influence protein misfolding in vitro and in vivo in many different ways. This book focuses on recent advances in our understanding of the role of lipids in modulating the misfolding of various proteins. The main emphasis is on the basic biophysical studies that address molecular basis of protein misfolding and amyloid formation, and the role of lipids in this complex process.

Membrane Proteins Production for Structural Analysis

The present book gives a multi-disciplinary perspective on the physics of life and the particular role played by lipids (fats) and the lipid-bilayer component of cell membranes. The emphasis is on the physical properties of lipid membranes seen as soft and molecularly structured interfaces. By combining and synthesizing insights obtained from a variety of recent studies, an attempt is made to clarify what membrane structure is and how it can be quantitatively described. Furthermore, it is shown how biological function mediated by membranes is controlled by lipid membrane structure and organization on length scales ranging from the size of the individual molecule, across molecular assemblies of proteins and lipid domains in the range of nanometers, to the size of whole cells. Applications of lipids in nanotechnology and biomedicine are also described. The first edition of the present book was published in 2005 when lipidomics was still very much an emerging science and lipids about to be recognized as being as important for life as proteins, sugars, and genes. This significantly expanded and revised edition takes into account the tremendous amount of knowledge gained over the past decade. In addition, the book now includes more tutorial material on the biochemistry of lipids and the principles of lipid self-assembly. The book is aimed at undergraduate students and young research workers within physics, chemistry, biochemistry, molecular biology, nutrition, as well as pharmaceutical and biomedical sciences. From the reviews of the first edition: "This is a highly interesting book and a pleasure to read. It represents a new and excellent pedagogical introduction to the field of lipids and the biophysics of biological membranes. I reckon that physicists and chemists as well as biologists will benefit from this approach to the field and Mouritsen shows a deep insight into the physical chemistry of lipids." (Göran Lindblom, Chemistry and Physics of Lipids 2005, vol. 135, page 105-106) "The book

takes the reader on an exciting journey through the lipid world, and Mouritsen attracts the attention with a lively style of writing ... . a comprehensive view of the ‘lipid sea’ can be easily achieved, gaining the right perspectives for envisaging future developments in the nascent field of lipidomics." (Carla Ferreri, ChemBioChem, Vol. 6 (8), 2005)

Advances in Lipobiology

Carrier Proteins—Advances in Research and Application: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Carrier Proteins. The editors have built Carrier Proteins—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Carrier Proteins in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Carrier Proteins—Advances in Research and Application: 2012 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Cellular Fatty Acid-binding Proteins

Introduction to Proteins provides a comprehensive and state-of-the-art introduction to the structure, function, and motion of proteins for students, faculty, and researchers at all levels. The book covers proteins and enzymes across a wide range of contexts and applications, including medical disorders, drugs, toxins, chemical warfare, and animal behavior. Each chapter includes a Summary, Exercies, and References. New features in the thoroughly-updated second edition include: A brand-new chapter on enzymatic catalysis, describing enzyme biochemistry, classification, kinetics, thermodynamics, mechanisms, and applications in medicine and other industries. These are accompanied by multiple animations of biochemical reactions and mechanisms, accessible via embedded QR codes (which can be viewed by smartphones) An in-depth discussion of G-protein-coupled receptors (GPCRs) A wider-scale description of biochemical and biophysical methods for studying proteins, including fully accessible internet-based resources, such as databases and algorithms Animations of protein dynamics and conformational changes, accessible via embedded QR codes Additional features Extensive discussion of the energetics of protein folding, stability and interactions A comprehensive view of membrane proteins, with emphasis on structure-function relationship Coverage of intrinsically unstructured proteins, providing a complete, realistic view of the proteome and its underlying functions Exploration of industrial applications of protein engineering and rational drug design Each chapter includes a Summary, Exercies, and References Approximately 300 color images Downloadable solutions manual available at www.crcpress.com For more information, including all presentations, tables, animations, and exercises, as well as a complete teaching course on proteins' structure and function, please visit the author's website: http://ibis.tau.ac.il/wiki/nir_bental/index.php/Introduction_to_Proteins_Book. Praise for the first edition "This book captures, in a very accessible way, a growing body of literature on the structure, function and motion of proteins. This is a superb publication that would be very useful to undergraduates, graduate students, postdoctoral researchers, and instructors involved in structural biology or biophysics courses or in research on protein structure-function relationships." --David Sheehan, ChemBioChem, 2011 "Introduction to Proteins is an excellent, state-of-the-art choice for students, faculty, or researchers needing a monograph on protein structure. This is an immensely informative, thoroughly researched, up-to-date text, with broad coverage and remarkable depth. Introduction to Proteins would provide an excellent basis for an upper-level or graduate course on protein structure, and a valuable addition to the libraries of professionals interested in this centrally important field." --Eric Martz, Biochemistry and Molecular Biology Education, 2012

Protein Lipidation

Monomeric GTP-Binding Proteins—Advances in Research and Application: 2012 Edition is a ScholarlyBrief™ that delivers timely, authoritative, comprehensive, and specialized information about Monomeric GTP-Binding Proteins in a concise format. The editors have built Monomeric GTP-Binding Proteins—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Monomeric GTP-Binding Proteins in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative,

informed, and relevant. The content of Monomeric GTP-Binding Proteins—Advances in Research and Application: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Subcellular Biochemistry

Edited by renowned protein scientist and bestselling author Roger L. Lundblad, with the assistance of Fiona M. Macdonald of CRC Press, this fourth edition of the Handbook of Biochemistry and Molecular Biology represents a dramatic revision — the first in two decades — of one of biochemistry's most referenced works. This edition gathers a wealth of information not easily obtained, including information not found on the web. Offering a molecular perspective not available 20 years ago, it provides physical and chemical data on proteins, nucleic acids, lipids, and carbohydrates. Presented in an organized, concise, and simple-to-use format, this popular reference allows quick access to the most frequently used data. Covering a wide range of topics, from classical biochemistry to proteomics and genomics, it also details the properties of commonly used biochemicals, laboratory solvents, and reagents. Just a small sampling of the wealth of information found inside the handbook: Buffers and buffer solutions Heat capacities and combustion levels Reagents for the chemical modification of proteins Comprehensive classification system for lipids Biological characteristics of vitamins A huge variety of UV data Recommendations for nomenclature and tables in biochemical thermodynamics Guidelines for NMR measurements for determination of high and low pKa values Viscosity and density tables Chemical and physical properties of various commercial plastics Generic source-based nomenclature for polymers Therapeutic enzymes About the Editors: Roger L. Lundblad, Ph.D. Roger L. Lundblad is a native of San Francisco, California. He received his undergraduate education at Pacific Lutheran University and his PhD degree in biochemistry at the University of Washington. After postdoctoral work in the laboratories of Stanford Moore and William Stein at the Rockefeller University, he joined the faculty of the University of North Carolina at Chapel Hill. He joined the Hyland Division of Baxter Healthcare in 1990. Currently Dr. Lundblad is an independent consultant and writer in biotechnology in Chapel Hill, North Carolina. He is an adjunct Professor of Pathology at the University of North Carolina at Chapel Hill and Editor-in-Chief of the Internet Journal of Genomics and Proteomics. Fiona M. Macdonald, Ph.D., F.R.S.C. Fiona M. Macdonald received her BSc in chemistry from Durham University, UK. She obtained her PhD in inorganic biochemistry at Birkbeck College, University of London, studying under Peter Sadler. Having spent most of her career in scientific publishing, she is now at Taylor and Francis and is involved in developing chemical information products.

Lipids in Protein Misfolding

Integrates biochemical, molecular, and cellular health and disease processes into one essential text! Biochemistry, Cell and Molecular Biology, and Genetics: An Integrated Textbook by Zeynep Gromley and Adam Gromley is the first to cover molecular biology, cell biology, biochemistry (metabolism), and genetics in one comprehensive yet concise resource. Throughout the book, these topics are linked to other basic medical sciences, such as pharmacology, physiology, pathology, immunology, microbiology, and histology, for a truly integrated approach. Key Highlights Easy-to-read text enhances understanding of underlying molecular mechanisms of disease Nearly 500 illustrations and tables help reinforce chapter learning objectives Textboxes throughout make connections with other preclinical disciplines End of unit high-order clinical vignette questions with succinct explanations help integrate basic science topics with clinical medicine This textbook provides a robust review for medical students preparing for courses as well as exams. Dental, pharmacy, physician's assistant, nursing, and graduate students in pre-professional/bridge programs will also find this a beneficial learning tool.

LIFE - AS A MATTER OF FAT

For the 6th Edition of this highly regarded textbook devoted to lipids, the title has been modified from Lipid Biochemistry to Lipids to acknowledge the coming together of biological and medical sciences, the increasingly blurred boundaries between them and the growing importance of lipids in diverse aspects of science and technology. The principal aims of this new edition - to inform students and researchers about lipids, to assist teachers and encourage further research – have not changed since previous editions. Significant advances in lipid science have demanded yet another extensive rewriting

for this edition, with the addition of two new authors, to cover new knowledge of genes coding for proteins involved in lipid metabolism, the many lipids involved in cell signalling, the roles of lipids in health and disease and new developments in biotechnology in support of agriculture and industry. An introductory chapter summarizes the types of lipids covered and their identification and provides a guide to the contents. Chapters contain boxes illustrating special topics, key point summaries and suggested further reading. Lipids: Sixth Edition provides a huge wealth of information for upper-level students of biological and clinical sciences, food science and nutrition, and for professionals working in academic and industrial research. Libraries in all universities and research establishments where biological, medical and food and nutritional sciences are studied and taught should have copies of this excellent and comprehensive new edition on their shelves.

Carrier Proteins—Advances in Research and Application: 2012 Edition

The purpose of this book is to introduce the readers on the perspective of the role that unsaturated fatty acids and complex lipids play on health and disease. Bioactive lipids can be modified affecting membrane composition, structure and fluidity in addition to changes in cell signaling associated to lipid-protein (membrane receptors) interactions, issues that are addressed by the authors. This book analyzes key topics involving bioactive lipids and their role in normal signaling and the mechanisms of disease. The book navigates from structural studies of oxidized and non-oxidized lipids to the reactions and cell signaling processes that bioactive lipids play in cardiovascular and neurodegenerative diseases. The book contains the recent advances reported in the literature about lipidomics as well as the role that lipid-derived compounds exert on unfolded protein response and lipid metabolism and disease. This book represents a state of the art introduction to lipid metabolism from a biochemical to an in vivo overview being an useful tool for students and investigators. We hope the mechanistic observations on the role of bioactive lipids in health and disease serve a perspective to improve the existing treatments or propose new lipid-based pharmacology

Introduction to Proteins

Lipids are a broad group of naturally occurring molecules which includes fats, waxes, sterols, fat-soluble vitamins (such as vitamins A, D, E and K), monoglycerides, diglycerides, phospholipids, and others. The main biological functions of lipids include energy storage, as structural components of cell membranes, and as important signaling molecules. This volume of Methods in Cell Biology covers such areas as Membrane structure and dynamics, Imaging, and Lipid Protein Interactions. It will be an essential tool for researchers and students alike. Covers such areas as membrane structure and dynamics, imaging, and lipid protein interactions An essential tool for researchers and students alike International authors Renowned editors

Monomeric GTP-Binding Proteins—Advances in Research and Application: 2012 Edition

This keenly awaited first overview of the field represents a complete guide to the structure and function of the most important mammalian cell membrane organelles. Filling a huge gap in the primary literature, this book is the first to cover the subject in detail. Following an introduction by Kai Simons, the discoverer of lipid rafts and the most prominent scientist in the field, chapters include: Historical background Distinct structures and functions Structural basis Signaling Viral entry and virion budding Cholesterol transport Caveolins Lipid shells Cell polarity and intracellular trafficking Cancer cells Of prime importance to molecular and cell biologists, biochemists, membrane scientists, cancer researchers, and virologists.

Handbook of Biochemistry and Molecular Biology, Fourth Edition

Carrier Proteins: Advances in Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Carrier Proteins. The editors have built Carrier Proteins: Advances in Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Carrier Proteins in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Carrier Proteins: Advances in Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have

a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Biochemistry, Cell and Molecular Biology, and Genetics

This book provides the most updated information of how membrane lipids mediate protein signaling from studies carried out in animal and plant cells. Also, there are some chapters that go beyond and expand these studies of protein-lipid interactions at the structural level. The book begins with a literature review from investigations associated to sphingolipids, followed by studies that describe the role of phosphoinositides in signaling and closing with the function of other key lipids in signaling at the plasma membrane and intracellular organelles.

Lipids

G Protein Coupled Receptors, Second Edition, Volume 143, a new volume in the Methods in Cell Biology series, continues the legacy of this premier serial with quality chapters authored by leaders in the field. It contains a wide array of topics about the G protein coupled receptors, as well as updates of chapters from the first edition. Contains contributions from experts in the field from across the world Covers a wide array of topics on G protein coupled receptors Includes analysis based topics

Bioactive Lipids in Health and Disease

In 1995, Signal Transduction Protocols, edited by David A. Kendall and Stephen J. Hill, was published in the Methods in Molecular Biology series. This second edition represents an update to that previous work with an emp- sis on new methodologies that have developed in the last few years. The goal, then and now, is to provide procedures written by experts with first-hand ex- rience in a detail that goes far beyond what is generally encountered in the “methods” section of most journals and thus actually permits a particular p- cedure to be replicated. In addition, we have had as a secondary goal the id- tification of protocols for the assay of general classes of signal transduction components that, ideally, can be adapted to the assay of any member of that class. The ability to do this has resulted in large part from the use of affini- based assays, the ease with which specific proteins can be specifically tagged, and an explosion in the availability of highly specific antibodies from comm- cial sources, especially antibodies raised against signaling proteins of human origin. The number of available approaches is, fortunately for those working in signaling research, far too great to fit within the confines of this volume, so hard choices as to what to include had to be made.

Lipids

International Review of Cell & Molecular Biology presents current advances and comprehensive re- views in cell biology—both plant and animal. Articles address structure and control of gene expression, nucleocytoplasmic interactions, control of cell development and differentiation, and cell transformation and growth. * Authored by some of the foremost scientists in the field * Provides up-to-date information and directions for future research * Valuable reference material for advanced undergraduates, graduate students and professional scientists

Lipid Rafts and Caveolae

Carrier Proteins: Advances in Research and Application: 2011 Edition