Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine*

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This is the most authoritative and wide-ranging reference yet assembled on Functional Genomics (the systematic analysis and identification of genes and their function) and Proteomics (the study of the complex structures and functions of proteins) in the rapidly expanding field of Molecular Medicine.

The two-volume reference work offers a comprehensive overview of the terms, topics and issues in both molecular biology and molecular medicine, with particular emphasis placed on the molecular causes of diseases. It provides up-to-the minute information about developments in the field, including pharmacogenetics and pharmacoproteomics, gene regulation and gene therapy.

Print version

2006. Approx. 2.100 p. 650 illus. in color, 2 vol. Hardcover
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**Lymphocyte Trafficking in Health and Disease**

Since the discovery of chemokines and of chemokine receptors it has become evident that expression of chemokines at the site of inflammation may regulate the composition of cellular infiltrate, thereby directing the type of immune response. Recently, the molecular characterization of inherited disorders of immune system, (e.g., Wiskott-Aldrich syndrome, WHIM syndrome, leukocyte adhesion deficiency), which are characterized by cytoskeleton/adhesion defects or by altered response of chemokine receptors has contributed to clarifying the key players of immune response in normal physiology and in disease. This book, which deals with the description of the role of chemokines in immune response and underlines potential targets of therapeutic intervention, offers a series of contributions of the most challenging aspects of lymphocyte migration in homeostasis and in disease.

**Features**
- Special focus on diseases and targets of therapeutical intervention
- International authorship

**From the contents**
Lymphocyte trafficking: from immunology paradigms to disease mechanisms.- Biology of chemokines.- Lymphocyte-endothelial cell interaction.- Chemokine receptor expression in effector and memory T cell subsets.- Migration of dendritic cell subsets.- Migration of NK cells.

**Field of interest**
Immunology

**Target groups**
Scientific libraries; researchers and clinicians from inflammation research, immunology, biomedicine, cell biology; pharmaceutical industry

**Type of publication**
Monograph

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**Hyperthermia In Cancer Treatment**

A Primer

Following an introductory overview, Hyperthermia In Cancer Treatment: A Primer comprehensively describes the biological reasons for associating hyperthermia with radiation and chemotherapy and the biological and clinical effects of hyperthermia on cancerous and normal tissues. The volume's 20 chapters are arranged in three principal parts: physical and methodological studies, biologic principles, and clinical studies.

**Features**
- An accessible volume for medical students and clinicians
- The principal aim of the book is clinical and it must be considered a primer or a reference for those in the field
- Provides physicists and engineers with information on the biological effects of heat on tumors, aspects not deeply discussed in bioengineering study programs

**From the contents**

**Field of interest**
Cancer Research

**Target groups**
Oncologists, cancer researchers, medical students, biomedical researchers, clinicians

**Type of publication**
Contributed volume

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**CD137 Pathway**

**Immunology and Diseases**

The immune system has evolved in large part to enable organisms to resist microbial infection. Microorganisms have long been used as experimental tools by immunologists, and the study of the immune responses to viruses, disease and bacteria has contributed much to our understanding of basic immunological mechanisms. The most practical and clinical reasons for attempting to understand the immunology of infections and disease revolves around the CD137 and CD137/41BB receptor and ligand molecules. These primary antibodies consist of new pathway and play central roles in the control of immune responses. In recent years, this pathway is emerging as one for the most important targets for manipulation of immune responses for disease diagnosis and treatment.

Dr. Chen discovered the CD-137 and B7H1 molecules in 1999 and his lab recently identified and described a new member of the important B7 family of immune system costimulatory molecules. He is the foremost expert in the field.

**Features**
- CD 137 pathway is emerging as one of the most important targets for manipulation of immune responses for disease diagnosis and treatment

**From the contents**
Genes, Transcripts and Proteins of CD137 Receptor and Ligand.- The CD137 signal transduction. - Significance of reverse signal transduction for the biology of the CD137 receptor/ligand system.- CD137 Signal in the Regulation of Innate Immunity.- Regulation of T Cell-Dependent Humoral Immunity Through CD137 (4-1BB) Mediated Signals.- CD137 in the Regulation of T Cell Response to Antigen.- Autoimmune diseases.

**Field of interest**
Immunology

**Target groups**
Immunologists, microbiologists, cancer researchers, molecular biologists, biochemists, and pharmaceutical and biotechnology company scientists

**Type of publication**
Reference work
Insights into Receptor Function and New Drug Development Targets

We are now on the verge of viewing effector molecules and other regulatory sites as therapeutic targets for the amelioration of human and animal disease. The recognition, for example, that mutant proteins are frequently misrouted molecules, rather than functionally defective ones, changes our approach to “inborn errors of metabolism” and offers new approaches for pharmacological discovery, based on rescue of receptors, ion channels and enzymes with pharmacopeiores. Ion channels, regulators of G-protein signaling and enzymes engaged in regulation, now present present opportunities for drug development. The state of our art also benefits by the availability of superior tools that allow measurement of interactions and afford unprecedented insight into the biomolecular interactions that present novel approaches to drug design.

From the contents
Molecular and Functional Diversity of the TRP Family of Ion Channels. TRPC Channels and the ROCE/SOCE Conundrum. - Functional rescue of misfolded receptor mutants. - Obesity-related mutations of leptin and melanocortin receptors. - cAMP and cGMP-dependent control of lipolysis and lipid mobilization in humans: putative targets for fat cell management. - Central neuropeptide receptors involved in water balance: application to apelin. - Targeting regulators of G protein signaling (RGS proteins) to enhance agonist selectivity. - Dimeric GPCRs: what did we learn from the metabotropic glutamate receptors? - Guiding principles applied in the design of GPCR-selective hypothalamic hormone agonists and antagonists.

Field of interest
Biomedicine general

Target groups
Researchers and scientists in the fields of the endocrinology and pharmacology

Type of publication
Proceedings

Due June 2006
2006. Approx. 235 p. 58 illus., 41 in color. (Research and Perspectives in Endocrine Interactions) Hardcover
ISBN 3-540-34446-2 ► € 104,95 | £80.50

M. Conn, Oregon Health and Science University, Beaverton, OR, USA; C. Kordon, Institut Necker, Paris, France; Y. Christen, Fondation Ipsen, Paris, France (Eds.)

Molecular Mechanisms of Synaptogenesis

Some of the molecules critical for building neuronal contacts have been shown to be affected in psychiatric disorders such as autism and mental retardation. Also, a reduction in synapse number in specific brain regions has been found in patients with brain disorders. Thus, imbalance in synaptic contact formation may result in the formation of abnormal neuronal circuits and the aberrant behavior manifested in these brain diseases. Recent findings also suggest that fine tuning of neuronal circuits rather than a major loss of neurons may be the cause of some of these brain disorders. In certain cases, loss of neurons could be a secondary event reflecting problems in improper neuronal communication.

Features
► Provides a new compilation of information that link changes in the basic structure of synapses and brain diseases, which have not been done yet

Contents
Experimental models of synaptogenesis. - Roles of cell adhesion and secreted molecules in synaptic differentiation. - Transport of synaptic proteins. - Synaptic cytoskeleton and morphogenetic signaling. - Synaptic plasticity in learning and memory. - Synaptogenesis and brain disorders.

Field of interest
Neurosciences

Target groups
Neuroscientists, molecular biologists, cell biologists and geneticists

Type of publication
Contributed volume

Due August 2006
Advertised in Springer News: 05/2006
2006. Approx. 495 p. 59 illus., 43 in color. Hardcover
ISBN 0-387-32560-3 ► € 96,95 | £74.50

A. El-Husseini, University of British Columbia, Vancouver, BC, Canada; A. Dityatev, University of Eppendorf, Hamburg, Germany (Eds.)

Development & Plasticity in Sensory Thalamus & Cortex

Development & Plasticity in Sensory Thalamus & Cortex is based on a 2-day symposium offered for the first time at SFN 2003. The symposium focused on the latest findings and ideas, focusing on visual and somatosensory thalamus and neocortex in rodents and carnivores and functional imaging studies in developing and aging human neocortex, as well as plastic changes after spinal cord injury. This volume will cover recent advances in understanding sensory thalamic and cortical function, organization, and plasticity. Chapters will cover a broad range of approaches from single cell recordings to viral gene transfer to transgenic and knockout mouse models to functional imaging in human cortex. The text is intended to provide an update on the multitude of technical and experimental approaches in understanding the development and plasticity of the mammalian sensory thalamus and neocortex and provide a synthetic theoretical framework for future studies.

Features
► Provides an update on the multitude of technical and experimental approaches in understanding the development and plasticity of the mammalian sensory thalamic and neocortex and provides a synthetic theoretical framework for future studies

From the contents
Pioneer neurons and interneurons in the developing subplate: molecular markers, cell birthdays, and neurotransmitters. - Dual roles of transcription factors in forebrain morphogenesis and development of axonal pathways. - Subcortical and neocortical guidance of area-specific thalamic innervation. - The earliest thalamocortical interactions. - Molecular basis for the formation of lamina-specific thalamocortical projections. - Role of Citron K in the development of Cerebral Cortex.

Field of interest
Neurosciences

Target groups
Neuroscience (neurochemistry, neurobiology), developmental biology, neurology, psychology

Type of publication
Contributed volume

Due August 2006
Advertised in Springer News: 05/2006
2006. Approx. 320 p. 36 illus., 29 in color. Hardcover
ISBN 0-387-31798-8 ► € 96,95 | £74.50

R. Erzurumlu, W. Guido, LSU Health Sciences Center, New Orleans, LA, USA; Z. Molnar, University of Oxford, UK (Eds.)
Clinical Trial Registries: A Practical Guide for Sponsors and Researchers of Medicinal Products

Clinical Trial Registries: A Practical Guide for Sponsors and Researchers of Medicinal Products is a necessary addition to the library of all researchers who plan to publish their results in top-tier, peer-reviewed journals. ICMJE editors and other journal editors require registration of clinical trial information on publicly available Web sites before enrollment of study subjects and some countries and regions also require this information, as well as timely publication of study results. Not only does Clinical Trial Registries: A Practical Guide for Sponsors and Researchers of Medicinal Products discuss the genesis of these requirements, the book also provides practical information for researchers and sponsors on how to establish a workflow for a clinical registry project, how to file to a registry, and how to post results. More than 25 current Web addresses for registries are provided as well as a comprehensive annotated bibliography of papers on the topic of clinical trial registries.

Features
- Numerous practical hints for everyone involved in registration of clinical projects
- Useful Web addresses
- Different countries’ regulations are considered

Contents
The Journal Editor’s Perspective - The Industry Perspective on Public Clinical Trial Registries and Results Databases - Public and Patient Usage and Expectations for Clinical Trial - The Japanese Perspective - A Project Management Approach to the Planning and Execution of Clinical Trial Registries - Biopharmaceutical Companies Tackle Clinical Trial Transparency - In Search of “Clinical Trial Register – Version 2.0”

Field of interest
Pharmacology/Toxicology

Target groups
Medical writers, pharmaceutical industry, sponsors and researchers of medicinal products

Type of publication
Handbook

Regulation of Carcinogenesis, Angiogenesis and Metastasis by the Proprotein Convertases (PC’s)

A New Potential Strategy In Cancer Therapy

Convertases are widely expressed activating enzymes involved in various physiological and pathological processes. The purpose of this book is to provide detailed and updated information on the role of these molecules in cancer. This book is the first to summarize current knowledge about the importance of protein precursors maturation by the convertases in tumor progression, angiogenesis and metastasis. In each chapter, the importance of the convertases in the activation of various cancer-related molecules including growth factors, adhesion molecules and proteases is discussed. Also this book covers the role of some convertases in the clinical setting. The book will be of interest to basic researchers as well as clinicians. It will also interest those working in the cancer research area and the pharmaceutical industry, who are looking for new strategies in cancer therapy.

Features
- Convertases are widely expressed activating enzymes involved in various physiological and pathological processes.
- Provides detailed and updated information on the role of these molecules in cancer
- To date, there has not been a book published that covers this topics, which makes it the first comprehensive study guide covering all aspects of the importance of the convertases in cancer

Field of interest
Cancer Research

Target groups
Researchers working in the area of cancer biology, cell biology, biochemistry, chemistry, oncology, and the pharmaceutical industry (drugs development)

Type of publication
Monograph