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Core Ethics for Health Professionals
Principles, Issues, and Compliance
R. F. Phalen, University of California, Irvine, CA, USA

A timely overview of ethics, emphasizing applications to biomedical researchers, health providers, and administrators. There are no simple rules to guide ethical conduct in daily practice, health professionals must have a basic understanding of several topics including ethical theories; ethical scandals; laws, regulations, and institutional policies; and public perceptions.

Contents

July 2017
IX, 152 p. 20 illus. Hardcover.
155 x 235 mm
£ 40.99 | € 54.99
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Principles of Bone and Joint Research
P. Pietschmann, Medical University of Vienna, Wien (Ed)

This textbook discusses the basics and clinical aspects of bone research in an accessible way. It aims at enhancing students’ understanding of the structure, pathophysiology and regeneration of bone and associated connective tissues.

Contents

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Learning Materials in Biosciences

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Pediatric Vaccines and Vaccinations
A European Textbook
T. Vesikari, University of Tampere Medical School, Tampere, Finland; P. Van Damme, University of Antwerp, Antwerpen, Belgium (Eds)

This graduate textbook serves as a highly readable guide on vaccines and vaccination in infants, children and adolescents from an European perspective. The first part of the book is dedicated to childhood and adolescent vaccine schedules, maternal and neonatal immunization and safety of vaccines. In a second part we focus on viral and bacterial vaccines.

Contents
Foreword.- Part I: General Vaccinology.- Expected and unexpected effects of vaccination.- How vaccinating people can also protect others.- Childhood and adolescent immunization programmes in Europe.- Vaccine hesitancy, acceptance and demand.- Adjuvants in pediatric vaccines.- Maternal immunization.- Neonatal immunization.- Part II: Viral vaccines and vaccinations.- Poliovirus vaccines.- Measles-mumps-rubella (MMR) vaccine.- Varicella vaccine.- Rotavirus vaccine.- Hepatitis A vaccine.- Hepatitis B vaccine.- Influenza vaccines.- Human papillomavirus (HPV) vaccines.

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All Language Rights Available
Bee products - chemical and biological properties

J. M. Alvarez-Suarez, Universidad de Las Américas Facultad de Ciencias de la Salud, Quito (Ed)

This book presents an updated discussion of the chemical composition and biological properties of the main bee products. Specific attention is focused on the beneficial biological activities of bee products in human health. Honey, royal jelly, propolis, bee pollen and bee venom are used as nutriment and in traditional medicine. […]

Contents

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ISBN 978-3-319-59688-4

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Human Chromosome Atlas

Introduction to diagnostics of structural aberrations

C. Behrend, Praxis für Medizinische Genetik, Düsseldorf. J. Karimzad Hagh, Praxis für Medizinische Genetik, Düsseldorf. P. Mehdipour, Tehran University of Medical Sciences, Tehran; G. Schwanitz, Universitätsklinikum Bonn,

This atlas presents the results of cases of structural chromosome aberrations based on the currently available methods of analysis for different types of abnormality. […]

Contents

July 2017
VIII, 207 p. 97 illus. Hardcover.
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Case Studies in Medical Toxicology

From the American College of Medical Toxicology

L. R. Dye, Elsevier Clinical Solutions, Cincinnati, OH, USA; C. Murphy, Carolinas Medical Center, Charlotte, NC, USA; D. P. Calello, New Jersey Medical School, Morristown, NJ, USA; M. Levine, Banner Good Samaritan Medical Center, Phoenix, AZ, USA; A. Skolnik, University of Pittsburgh Medical Center, Pittsburgh, PA, USA (Eds)

The ACMT National Case Conference (NCC) is a monthly discussion of novel or interesting cases in medical toxicology. Participation is through online webinar, and the conferences are recorded to allow for review at any time. The cases in this book are taken from recordings of NCC with edits and revisions by contributors and editors to demonstrate educational points. […]

Contents
Case 1: Laundry Pod Ingestion in an Adult.- Case 2: Coma and Metabolic Acidosis.- Case 3: Diet Pill Ingestion in a Child.- Case 4: Salicylate Ingestion.- Case 5: Exotic Snake Envenomation.- Case 6: Medication Error in the Delivery Room.- Case 7: Delirium and Bradycardia Following Opioid Dependency Treatment.- […]

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Ticks of Europe and North Africa
A Guide to Species Identification
A. Estrada-Peña, University of Zaragoza, Zaragoza; A. D. Mihalca, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Cluj-Napoca; T. N. Petney, Karlsruhe Institute of Technology, Karlsruhe (Eds)

This book includes descriptive keys for identifying every stage of all the species of ticks reported in Europe and northern Africa. It includes descriptive texts on the ecology and prominent features of each species, together with ink illustrations and distribution maps of more than 60 species of hard and soft ticks. 

Contents

Developmental and Reproductive Toxicology
A. S. Faqi, MPI Research, Mattawan, MI, USA (Ed)

This meticulous volume covers metabolism and drug-drug interactions during pregnancy, critical periods of developmental toxicology, in vivo and alternative methods to assess potential developmental toxicity for drugs and chemicals, and effects of chemicals on testes and mammary glands. 

Contents

Series Title
Methods in Pharmacology and Toxicology

MicroRNA Technologies
M. J. Kye, University of Cologne, Cologne (Ed)

This volume examines different approaches toward understanding the function of microRNA (miRNA) and the tools used to regulate microRNA expression in nervous systems. MicroRNA Technologies also explores newly established techniques to study the role of miRNAs in the nervous system. 

Contents

Series Title
Neuromethods
Prion Diseases

P. Liberski. Medical University of Lodz, Lodz, Poland (Ed)

This volume provides comprehensive information and detailed laboratory protocols used in the study of prion diseases. The chapters in this book cover topics such as: electron microscopy, neuropathology, immunohistochemistry, and immune-gold electron microscopy of prion diseases. [..]

Contents


Series Title
Neuromethods

Point-of-care testing


The underlying technology and the range of test parameters available are evolving rapidly. The primary advantage of POCT is the convenience of performing the test close to the patient and the speed at which test results can be obtained, compared to sending a sample to a laboratory and waiting for results to be returned. [..]

Contents

Definitions and Application Fields.- Role of POCT in the Healthcare system.- Device categories.- Pre- and Postanalytics.

Biochemical Approaches for Glutamatergic Neurotransmission

S. Parrot. University Lyon 1 Lyon Neuroscience Research Center, Lyon; L. Denoroy, University Lyon 1 Lyon Neuroscience Research Center, Lyon (Eds)

This volume presents techniques and recent developments in biochemical approaches to study glutamatergic neurotransmission. This book contains detailed discussions on tracing neuronal pathways, functional or spectroscopic imaging, optogenetic or pharmacological tools, and extracellular neurochemistry in experimental clinical models. [..]

Contents


Series Title
Neuromethods
Current Proteomic Approaches Applied to Brain Function
E. Santamaría, Public University of Navarra, Proteored-Institute of Health Carlos III (ISCIII), Navarra Institute for Health Research (IdiSNA), Pamplona, Spain; J. Fernández-Irigoyen, Public University of Navarra, Proteored-Institute of Health Carlos III (ISCIII), Navarra Institute for Health Research (IdiSNA), Pamplona, Spain (Eds)

This volume focuses on protein analysis covering a wide spectrum of the utility of mass spectrometry within neurobiological disciplines. The chapters in this book discuss label (iTRAQ, TMT, protein arrays) and label-free workflows (SWATH, MALDI Imaging, and label-free quantitation). [...] Contents
Brain Proteomics: Decoding Neuroproteomes using Mass-Spectrometry.- Applications of Amine-Reactive Tandem Mass Tags (TMT) in Human Neuroproteomics.- Application of Isobaric Tags for Relative and Absolute Quantitation (iTRAQ) to Monitor Olfactory Proteomes during Alzheimer’s Disease Progression.- Protein Microarrays in Neurodegenerative Diseases.- [...] Series Title Neuromethods

Stem Cell Technologies in Neuroscience
A. K. Srivastava, University of Texas Health Science Center at Houston McGovern Medical School, Houston, TX, USA; E. Y. Snyder, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA, USA; Y. D. Teng, Spaulding Rehabilitation Network and Brigham & Women’s Hospital, Boston, MA, USA (Eds)

This volume provides comprehensive knowledge on the fundamental techniques and detailed laboratory protocols used in stem cell research and their potential application in the field of neuroscience. [...] Contents
Three-Dimensional Cultures of Human Neural Stem Cells: An Application for Modeling Alzheimer’s Disease Pathogenesis.- Neural Stem Cell Fate Control on Micropatterned Substrates.- Dopaminergic and GABAergic Neuron In Vitro Differentiation from Embryonic Stem Cells.- Transfection of Cultured Primary Neurons.- Reprogramming of Mouse Fibroblasts to Induced Oligodendrocyte Progenitor Cells.- Isolation and Culture of Oligodendrocyte Precursor Cells from Pre- and Postnatal Rodent Brain. [...] Series Title Neuromethods

Dermal Drug Selection and Development: An Industrial Perspective
L. Trottet, Centre de Recherches François Hyafil, Villebon sur Yvette, France; H. Maibach, MD, Medical School, University of California, San Francisco, CA, USA

The authors show how the pharmaceutical industry faces the development of dermal drugs and provide the only book of its kind that describes how the industry develops and selects dermal drugs, complete with the challenges and opportunities of the field. [...] Contents
This book is about the roles and importance of Ultraviolet (UV) light from sun and from man-made UV lamps in our daily life, on health and diseases, also its application in sterilization and treatment.

Contents

Series Title
Advances in Experimental Medicine and Biology

Neurotoxicity of Metals
M. Aschner, Albert Einstein Coll Med, Dept, Bronx, NY. L. Costa, Univ of Washington, Seattle, WA, USA (Eds)

Assembles international authorities to address contemporary research in metal neurotoxicity. Essential and non-essential metals play an important role in neurodevelopmental and neurodegenerative diseases.

Contents

Series Title
Advances in Neurobiology

Protein and Sugar Export and Assembly in Gram-positive Bacteria
F. Bagnoli, GSK Vaccines, Siena; R. Rappuoli, GSK Vaccines, Siena (Eds)

This book focuses on the envelope of Gram-positive bacteria including its composition, the latest discoveries in the mechanisms behind its assembly, and its role in pathogenesis. Furthermore, new applications in biotechnology and vaccine development involving these bacteria are discussed in detail.

Contents
Envelope structures of Gram-positive bacteria.- Translocation of proteins across the plasma membrane and cell envelope.- Type I signal peptidases.- The Sec system.- The twin-arginine protein translocation (Tat) system.- ExPortal: a microdomain for protein secretion in Gram-positive bacteria.- Spatial positioning of cell wall-anchored proteins.- Anchoring of LPXTG-like proteins to the cell wall envelope.- Export and processing of lipoproteins.- Pilus assembly in Gram-positive bacteria.

Series Title
Current Topics in Microbiology and Immunology
Uptake and Trafficking of Protein Toxins

H. Barth, University of Ulm Medical Center, Ulm (Ed)

This volume focuses on the transport of medically relevant bacterial protein toxins into mammalian cells, and on novel pharmacological strategies to inhibit toxin uptake. [...] 

Contents

Two feet on the membrane: uptake of clostridial neurotoxins. - Receptors and binding structures for Clostridium difficile Toxins A and B. - Cell entry of C3 exoenzyme from Clostridium botulinum. - Receptor-binding and up-take of binary actin-ADP-ribosylating toxins. - Clostridial Binary Toxins: Basic Understandings that Include Cell-Surface Binding and an Internal "Coup de Grace". - Host cell chaperones Hsp70/Hsp90 and peptidyl-prolyl cis/trans isomerasers are required for the membrane translocation of bacterial ADP-ribosylating toxins. [...] 

Series Title

Current Topics in Microbiology and Immunology

Neuropharmacology of New Psychoactive Substances (NPS)

The Science Behind the Headlines

M. H. Baumann, National Institute on Drug Abuse, Baltimore, MD, USA; R. A. Glennon, Virginia Commonwealth University, Richmond, VA, USA; J. L. Wiley, RTI International, Research Triangle Park, NC, USA (Eds)

Designer drugs, or new psychoactive substances (NPS), are synthetic chemicals that mimic the effects of classic drugs of abuse. There has been an alarming worldwide increase in the abuse of NPS in recent years. NPS are cheap, easy to obtain, and often legally available. [...] 

Contents

Preface. [...] 

Series Title

Current Topics in Behavioral Neurosciences

Focus on Gynecologic Malignancies

N. Berger, Case Western Reserve University, Cleveland, OH, USA; A. Klopp, MD Anderson Cancer Center Department of Radiation Oncology, Houston, TX, USA; K. Lu, MD Anderson Cancer Center, Houston, TX, USA (Eds)

Gynecologic malignancies, especially endometrial and ovarian cancers are among the most important and most severely affected by obesity. [...] 

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Series Title

Energy Balance and Cancer
Translating Molecules into Medicines

Cross-Functional Integration at the Drug Discovery-Development Interface

S. N. Bhattachar, Eli Lilly and Company, Indianapolis, IN, USA; J. S. Morrison, Bristol-Myers Squibb, Wallingford, CT, USA; D. R. Mudra, Eli Lilly and Company, IN, USA; D. M. Bender, Eli Lilly and Company, Indianapolis, IN, USA (Eds)

Tackling translational medicine with a focus on the drug discovery development interface, this book integrates approaches and tactics from multiple disciplines, rather than just the pharmaceutical aspect of the field. The authors of each chapter address the paradox between the molecular understanding of diseases, drug discovery, and drug development. [...]

Contents

Pharmaceutical Industry Performance.- Scope: productivity, success rates and costs.- Competitive landscape and regulatory requirements across different geographies. Drivers for increased efficiency, innovative approaches, and outlook for the next decade.- Unmet needs, major therapeutic areas of R&D focus and investment. [...] [...

Series Title

AAPS Advances in the Pharmaceutical Sciences Series

Extracellular Matrix in Tumor Biology

R. A. Brekken, UT Southwestern Medical Center, Dallas, TX, USA; D. Stupack, University of California, La Jolla, CA, USA (Eds)

This volume provides an overview on the influence of Extracellular Matrix (ECM) on tumor progression. It covers topics such as signaling induced by structural ECM proteins including collagen and fibronectin, the control of ECM deposition and the turnover in tumors. [...]

Contents


Series Title

Biology of Extracellular Matrix

Safety and Efficacy of Gene-Based Therapeutics for Inherited Disorders

N. Brunetti-Pierri, University of Naples Federico II, Naples (Ed)

In this book, leading international experts analyze state-of-the-art advances in gene transfer vectors for applications in inherited disorders and also examine the toxicity profiles of these methods. [...]

Contents


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Next Generation Point-of-care Biomedical Sensors Technologies for Cancer Diagnosis
P. Chandran Institute of Technology,
Guwahati Dept. of Biosciences and Bioengineering, Guwahati; Y. N. Tan, Bioinspired Materials Lab Inst. of Materials Research & Engineering, Singapore, Singapore; S. P. Singh, Electron & Ion Microscopy Group CSIR- National Physical Laboratory, New Delhi (Eds)

This book presents recent research on cancer detection methods based on nanobiosensors, which offer ultrasensitive point-of-care diagnosis. Several methods for diagnosing cancer have been discovered and many more are currently being developed. [...] 

Contents
Cancer Biomarkers: Important Tools for Cancer Diagnosis and Prognosis.- Transcription factors as detection and diagnostic biomarkers in cancer.- Cancer biomarkers immunosensing strategies based on graphene surface engineered materials.- Label-free biosensors for early diagnosis of cancer based on G-quadruplex and isothermal amplification.- Point-of-care and implantable biosensors in cancer research and diagnosis.- Electrochemical Redox Cycling Amplification Technology for Point-of-Care Cancer Diagnosis. [...] 

Vestibulo-Oculomotor Research in Space
A. H. Clarke, Charité Medical School, Berlin

This monograph describes the findings of spaceflight research related to spatial orientation, sensorimotor coordination and mental function. Exposed to the microgravity conditions of spaceflight, the human experiences a variety of physiological and psychological problems, which are presented here. [...] 

Contents

Series Title
SpringerBriefs in Space Life Sciences

Gastric Cancer Prewarning and Early Diagnosis System
D. Cui, Shanghai Jiao Tong University, Shanghai, China (Ed)

The book explores recent developments in the application of nanotechnology in the early detection of gastric cancer. [...] 

Contents
Background of Gastric Cancer Prewarning and Early Diagnosis System.- Human Serum Protein Markers for Gastric Cancer Detection.- Screening and Detection of Gastric Cancer Circulating microRNA biomarkers.- Screening and Identification of Biomarkers from Gastric Cancer Saliva Metabolites .- Metabolic Profiles and High-accuracy Diagnosis Model Based on Plasma Metabolomics of Gastric Cancer Patients.- Identification of Volatile Organic Compound Biomarkers associated with Gastric Cancer Cells and Their Ultrasensitive Electrochemical Detection. [...] 

Series Title
Translational Medicine Research
Decoding the Antibody Repertoire
High Throughput Sequencing of Multiple Transcripts from Single B Cells
B. DeKosky, The University of Kansas, Lawrence, KS, USA

This thesis outlines the development of the very first technology for high-throughput analysis of paired heavy and light-chain antibody sequences, opening an entirely new window for antibody discovery and the investigation of adaptive immune responses to vaccines and diseases. [...] 

Contents
Background.- High-throughput Sequencing of the Paired Human Immunoglobulin Heavy and Light Chain Repertoire.- In-Depth Determination and Analysis of the Human Paired Heavy and Light Chain Antibody Repertoire.- Paired VH:VL Analysis of Naïve B Cell Repertoires and Comparison to Antigen-Experienced B Cell Repertoires in Healthy Human Donors.- Conclusions and Future Perspectives.- Appendices.

Series Title
Springer Theses

Gastrointestinal Pharmacology
B. Greenwood-Van Meerveld, The University of Oklahoma, Oklahoma City, OK, USA (Ed)

This volume aims to connect current ideas and concepts about GI disorders with the search for novel therapeutics. Towards this goal, authors provide a timely state-of-the-art overview of the GI tract in health and disease, current treatment approaches and ongoing developments in drug discovery, and their potential for the better treatment of patients with GI disorders.

Contents

Series Title
Handbook of Experimental Pharmacology

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XXVIII, 87 p. 34 illus. Hardcover. 155 x 235 mm
£ 74,50 | € 99,99
ISBN 978-3-319-58517-8

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Drug Design: Principles and Applications
A. Grover, School of Biotechnology Jawaharlal Nehru University, New Delhi (Ed)

This book offers an in-depth discussion of the latest strategies in the field of drug design and their applications in various disorders, in order to encourage readers to undertake their own projects. It also includes the contemporary application of drug-designing methodologies to inspire others to further expand the utility of this field in other diseases. It is intended for advanced undergraduate [...] 

Contents
Applications of Computer aided drug design.
- Advanced drug discovery for Alzheimer’s disease: Challenges and strategies.
- Modern approaches in Cancer pharmacology.
- Contemporary approach for Malaria drug discovery.
- The story of kinase inhibitors development with special reference to allosteric site.
- Recent advancement in the chemotherapy of visceral leishmaniasis.
- Strategies for tackling drug resistance in Tuberculosis.
- ADMET properties: Overview and current topics.
- Cheminformatics approaches in modern drug discovery.
- Pharmacogenetics and personalized medicines.

Nutritional Anemia in Preschool Children
A. Gupta, Eklavya dental college and hospital, Kotputli

The book highlights intricate predisposing factors for pathogenesis of nutritional anemia. It delivers valuable information related to this public health hazard influencing the nutritional health of preschool children. The book is valuable for readers in diverse fields to gain insight of the concept of nutritional anemia in preschool children. [...] 

Contents
Introduction To Nutritional Anaemia In Preschool Children.
- Epidemiology Of Nutritional Anemia.
- Functional Role Of Iron In Nutritional Anemia.
- Functional Role Of Vitamin B12 & Folic Acid In Nutritional Anemia.
- Functional Role Of Vitamin A In Nutritional Anemia.
- Functional Role Of Zinc, Copper And Selenium In Nutritional Anemia.
- Impact Of Diarrhoea & Malnutrition In Nutritional Anemia.
- Nterventional Strategies.
- Bibliography.

Biobanking of Human Biospecimens
Principles and Practice
P. Hainaut, Institute for Advanced Biosciences, Inserm U1209 CNRS UMR 5309, Université Grenoble-Alpes, Grenoble, France; J. Vaught, Biopreservation and Biobanking, Kensington, MD, USA; K. Zatloukal, Medical University of Graz, Auenbruggerplatz 25, A-8036, Graz; M. Pasterk, Biobanking and Biomolecular resources Research Infrastructure (BBMRI-ERIC), Graz (Eds)

This volume is the first comprehensive text on human biobanking, authored by scientists and regulatory officers who have led the field over the past 10 years. It covers biobanking issues and its importance in advancing the field of research in cancer, cardiovascular, metabolic, and other diseases. [...] 

Contents
- 1. 20 years of biobanking: dawning or a new era (Volume Editors).
- SECTION 1: BIOBANKS IN PRACTICE.
- 5. Biobank governance and sustainability- M. Pasterk (IPRI, France).
- 6. Biobanking in low resource contexts-R. Lawlor (University of Verona).
Photoaffinity Labeling for Structural Probing Within Protein
Y. Hatanaka, University of Toyama, Toyama, Japan; M. Hashimoto, Hokkaido University, Sapporo, Japan (Eds)

This book covers the most up-to-date photoaffinity labeling method to tackle the key loop module involved in the binding process of a bioactive small molecule to its host protein. The book introduces rational points for preparing powerful photoaffinity probes, keys for the efficient analysis of labeled products, and recent successful applications for protein probing. [...] 

Contents
Preface.- Chapter 1 Multifunctional Photoprobes for Identification of Ligand Sites within Biomolecules.- Chapter 2 Tag-Creation Approaches for Highly Efficient Profiling of Interacting Proteins and Domains.- Chapter 3 Recent Developments in Designing Compact Biological Photoprobes.- Chapter 4 Utilities of Anti-Ligand Antibody and Mass Spectrum to Euclidean Photolabelled Sites.- Chapter 5 Combination of Photoaffinity Label and Site-Directed Antibody for Target Proteins.- Chapter 6 Synthesis of diazirinyl photophore and optically pure diazirinyl-phenylalanines for photoaffinity labeling. [...] 

Histamine and Histamine Receptors in Health and Disease
Y. Hattori, University of Toyama, Toyama, Japan; R. Seifert, Medical School of Hannover (Eds)

This book provides a comprehensive overview on current histamine and histamine receptor research in context of human health and disease and reflect the multidisciplinary nature of the field. [...] 

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Series Title
Handbook of Experimental Pharmacology

Formaldehyde and Cognition
R. He, Institute of Biophysics Chinese Academy of Sciences, Beijing, China

This book introduces important, new knowledge regarding formaldehyde, especially endogenous formaldehyde, revealing its many key roles in the human body. [...] 

Contents
Formaldehyde from environment.- Anabolism and metabolism of formaldehyde in vivo.- Formaldehyde playing a role in (de)methylation for memory.- Dehydration, formaldehyde and age-related cognitive impairment.- The role of formaldehyde in cell proliferation and death.- Gut microbiota, formaldehyde dysmetabolism, and cognitive impairment.- Effects of formaldehyde on protein (Tau) aggregation and cytotoxicity.- Cognitive ability and impairment related to formaldehyde. [...] 

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Viruses, Genes, and Cancer

E. Hunter, Emory University, ATLANTA, GA, USA; K. Bister, University of Innsbruck (Eds)

This volume focuses on virus-host cell interactions, cellular genes acquired or modulated by viruses, the pathological effects of these interactions, and therapeutic interventions. Several chapters specifically address the role of viruses and genes – such as oncogenes, proto-oncogenes, or tumor suppressor genes – in the etiology of human cancer. [...] 

Contents


Series Title

Current Topics in Microbiology and Immunology

Cardiac Regeneration

M. Ieda, Keio Univ School of Med Department of Cardiology, Tokyo, Japan; W. Zimmermann, Universitätsmedizin Göttingen Georg-August-Universität, Göttingen (Eds)

This Volume of the series Cardiac and Vascular Biology offers a comprehensive and exciting, state-of-the-art work on the current options and potentials of cardiac regeneration and repair. [...] 

Contents


Series Title

Cardiac and Vascular Biology

Patient-specific Hemodynamic Computations: Application to Personalized Diagnosis of Cardiovascular Pathologies

L. M. Itu, Transilvania University of Brasov, Brasov, Romania; P. Sharma, Siemens Healthcare, Princeton, NJ, USA; C. Suciu, Siemens Corporate Technology, Brasov, Romania (Eds)

Hemodynamic computations represent a state-of-the-art approach for patient-specific assessment of cardiovascular pathologies. The book presents the development of reduced-order multiscale hemodynamic models for coronary artery disease, aortic coarctation and whole body circulation, which can be applied in routine clinical settings for personalized diagnosis. [...] 

Contents


Series Title

Cardiac and Vascular Biology
Neuroanatomy for the Neuroscientist
S. Jacobson, Boston, MA, USA; T. E. o. E. M. Marcus, Jamaica Plain, MA, USA; S. Pugsley, South Abington Twp., PA, USA

The purpose of this textbook is to enable a Neuroscientist to discuss the structure and functions of the brain at a level appropriate for students at many levels of study including undergraduate, graduate, dental or medical school level. [...]

Contents
Metabolic Engineering for Bioactive Compounds

Strategies and Processes

V. C. Kalia, Microbial Biotechnology and Genomics CSI Delhi University Campus, New Delhi; A. K. Saini, Faculty of Applied Sciences and Biotech Shoolini University of Biotech & Mgt Sc, SOLAN (Eds)

This book comprehensively discusses the latest research in the area of metabolic engineering. Metabolic engineering solutions for bioactive compounds are now being derived by means of heterologous gene expression, in a wide range of organisms. [...]

Contents

Transport Across Natural and Modified Biological Membranes and its Implications in Physiology and Therapy
J. Kulbacka, Wroclaw Medical University Dept. of Medical Biochemistry, Wroclaw, Poland; S. Satkauskas, Vytautas Magnus Univ Bio Res Group/Bio Dept, Kaunas, Lithuania (Eds)

This book elucidates the mechanisms involved in biological membrane functions. It describes the new modalities and characterization for basic in vitro as well as computer models of biological membranes. Biological membranes are analyzed in terms of advances in molecular dynamics. The individual chapters provide an in depth analysis of images from various biological models. […]

Contents
Atomistic simulations of transport across membranes models.- Bioinformatical modeling of transmembrane ionic channels.- Cell membrane transport mechanisms – ion channels and electrical properties of cell membranes.- Cell membrane electropulsation: chemical analysis of cell membrane modifications in the electropertmeabilized state.- Drug and gene delivery methods through the cell plasma membrane.- […]

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Microbial Biomass Process Technologies and Management
B. Kumara Behera, Amity University Uttar Pradesh, Noida; A. Varma, Amity University Uttar Pradesh, Noida

This book describes how microbes can be used as effective and sustainable resources to meet the current challenge of finding suitable and economical solutions for biopharmaceuticals, enzymes, food additives, nutraceuticals, value added biochemicals and microbial fuels, and discusses various aspects of microbial regulatory activity and its applications. […]

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July 2017
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Canine and Feline Dementia
Molecular Basis, Diagnostics and Therapy
G. Landsberg, North Toronto Veterinary Behaviour Specialty Clinic, Thornhill, ON, Canada; A. Madari, Univ of Veterinary Medicine and Pharmacy Small Animal Clinic, Košice, Slovakia; N. Žilka, Slovak Academy of Sciences Institute of Neuroimmunology, Bratislava, Slovakia (Eds)

The book deeply focuses on the epidemiology, diagnostics, therapy and molecular basis of canine and feline dementia or cognitive dysfunction syndrome. The aim is to provide a broad overview of the current knowledge on canine and feline dementia. Experiences of clinicians are appropriately linked with current scientific knowledge in a readily comprehensible form. […]

Contents
The Clinical Picture Of Feline And Canine Cognitive Impairment.- Medical And Behavioural Differentials Of Cognitive Dysfunction.- Phenotypic Variability And Clinical Staging Of Canine Dementia.- Dog As A Natural Model For Human Alzheimer’s Disease Progression.- Neuropathology Of Canine Cognitive Impairment.- Neuropathology Of Feline Dementia.- Proteomic Approaches For Diagnostics Of Canine And Feline Dementia.- Current Pharmacological And Non-Pharmacological Approaches For Therapy Of Feline And Canine Dementia.- Preventive And Risk Factors Of Canine And Feline Dementia.

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Behavioral Neuroscience of Orexin/Hypocretin

A. J. Lawrence, University of Melbourne, Parkville, VIC, Australia; L. de Lecea, Stanford University, Stanford, CA, USA (Eds)

This issue of Current Topics in Behavioral Neurosciences focuses on the neuropeptide orexin (hypocretin) and brings together scientists from around the world who will provide a timely discussion of how this peptide regulates behavior. This is a fast-moving field, and with the incorporation of novel technologies, new breakthroughs are likely to continue. [...] 

Contents
The Human Orexin/Hypocretin Receptor Crystal Structures.- Orexin/Hypocretin Signaling.- Orexin/Hypocretin and Organizing Principles for a Diversity of Wake-Promoting Neurons in the Brain.- The Hypocretin/Orexin Neuronal Networks in Zebrafish.- Hypocretins and Arousal.- Orexin OX 2 Receptor Antagonists as Sleep Aids.- Roles for Orexin/Hypocretin in the Control of Energy Balance and Metabolism.- Orexin and Central Modulation of Cardiovascular and Respiratory Function.- Role of the Orexin/Hypocretin System in Stress-Related Psychiatric Disorders. [...] 

Series Title
Current Topics in Behavioral Neurosciences

Obesity and Brain Function

L. Letra. University of Coimbra, Faculty of Med Neurology and Physiology Dept, Coimbra; R. Seica. University of Coimbra, Physiology Dept IBILI, Coimbra (Eds)

This compendium provides a wide view covering everything from molecular mechanisms and risk factors for neurological disorders to the effects of bariatric surgery on brain function and functional neuroimaging applied to obesity research. [...] 

Contents

Series Title
Advances in Neurobiology

RNA Activation

L. Li, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences, Beijing, China (Ed)

This book offers an essential guide to RNA activation (RNAa), an emerging and fascinating new field. RNAa is a small RNA-guided and Argonaute-dependent gene regulation phenomenon in which promoter-targeted short double-stranded RNAs (dsRNAs) induce target gene expression at the transcriptional level. [...] 

Contents
PART I Exogenous RNAa.- PART II Endogenous RNAa.- PART III RNA activation guided by other small RNAs.- PART IV Developing RNAa-based therapeutics.- 

Series Title
Advances in Experimental Medicine and Biology
Tissue Repair
Reinforced Scaffolds
X. Li, Beihang University, Beijing, China (Ed)

This book summarizes the effective reinforcement of scaffolds by means of different kinds of fibers and tubes to meet different needs in the context of tissue repair. It covers the fabrication of the reinforced scaffolds, the factors influencing their properties, and their applications for hard and soft tissue repair. [...] 

Contents
Chapter 1. Overview of scaffolds reinforcement for tissue repair (Xiaoming Li).- Part I: FABRICATION AND MATERIAL PROPERTIES.- Chapter 2. The potential matrix and reinforcement material (Xiaoming Li).- Chapter 3. The mechanical properties of the scaffolds (Nicholas Dunne).- Chapter 4. The biodegradability of the scaffolds reinforced by fibers (Katerina E. Aifantis).- Chapter 5. The biocompatibility of the scaffolds reinforced by fibers (Yanfeng Luo).- Part II: TISSUE REPAIR APPLICATIONS.- Chapter 6. The potential tissues and their properties (Xiangdong Kong). [...] 

Immune Metabolism in Health and Tumor
B. Li, Shanghai Jiao Tong University School of Medicine, Shanghai, China; F. Pan, Johns Hopkins University Bloomberg-Kimmel Institute, Baltimore, MD (Eds)

This book offers a broad overview of the concepts and research findings in immunometabolism. The immune system is made up of numerous different cell types, pathways, and components that must be able to respond rapidly to a pathogen or cancer, but must also remain quiescent in the absence of challenges. Immune cells rely on metabolic pathways to adapt to changing environments and stimuli. [...] 

Contents
Metabolism in Immune Cell Differentiation and Function.- Metabolic Regulation of T cell Immunity.- Transcriptional regulation of T cell metabolism reprograming.- Adipose tissue-resident regulatory T cells.- Immune cell metabolism in tumor microenvironment.- Regulation of Metabolism across Different Subsets of T Cells in Cancer.- Immunometabolism in Tumour Microenvironment. 

Series Title
Advances in Experimental Medicine and Biology 

Isolation and Molecular Characterization of Circulating Tumor Cells
M. J. M. Magbanua, University of California San Francisco, San Francisco, CA, USA; J. W. Park, University of California San Francisco, San Francisco, CA, USA (Eds)

Numerous studies have shown that elevated levels of circulating tumor cells (CTCs) in blood of cancer patients are associated with poor response to treatment and inferior survival probabilities. Despite this clinical significance, the molecular biology of CTCs remains poorly understood. [...] 

Contents

Series Title
Advances in Experimental Medicine and Biology
Gene and Cell Therapies for Beta-Globinopathies
P. Malik, MD, Cincinnati Children’s Hospital Comprehensive Sickle Cell Program, Cincinnati, OH, USA; J. Tisdale, Ph.D., National Institutes of Health Health & Human Services, Bethesda, MD, USA (Eds)

Hemoglobin defects, specifically sickle cell disease & thalassemia, combined, constitute the most common monogenic disorders in the world. In fact, nearly 2% of the world’s population carries a globin gene mutation. 

Contents
Introduction and clinical features of β-thalassemias and sickle cell disease (SCD).- Genetic basis and genetic modifiers of the β-thalassemias and SCD.- Current Standards of care and long term outcomes of Thalassemia and SCD.- Allogeneic/matched related transplantation for the β-thalassemias and SCD.- Alternative donor/unrelated donor transplants for the β-thalassemias and SCD.- Gene addition strategies for the β-thalassemias and SCD.- Genetic reactivation of fetal hemoglobin for β-thalassemia and SCD. 

Series Title
Advances in Experimental Medicine and Biology

Endocannabinoids and Lipid Mediators in Brain Functions
M. Melis, University of Cagliari, Cagliari (Ed)
The science of cannabinoids is 50 years old. These past years provided a remarkable and constant number of breakthroughs, showing that the signaling mediated by endocannabinoids and lipid mediators impacts almost every function of the body.

Contents
- The Endocannabinoid System in Leptin-Driven Changes of Orexinergic Signalling Under Physiological and Pathological Conditions.- How CB1 Receptor Activity and Distribution Contribute to the Male and Female Brain Different Towards Cannabinoid-Induced Effects.- Endocannabinoids, Stress, and Negative Affect.- Cell-Autonomous Endocannabinoid Production Shapes Polarized and Dynamic Distribution and Signaling Patterns of Cannabinoid CB1 Receptors in Neurons.- Endocannabinoid-Dependent Synaptic Plasticity in Striatum.

Series Title
Advances in Experimental Medicine and Biology

TRAIL, Fas Ligand, TNF and TLR3 in Cancer
O. Micheau, INSERM, LNC UMR 1231, Dijon, France (Ed)
This volume provides the current understanding of death receptor’s/TLR3 signaling regulation in cancer. Death receptors, including TRAIL-R1, TRAIL-R2, Fas and TNF-R1, owing to their ability to trigger apoptosis and to contribute to the elimination of cancer cells by the immune system have been considered, to variable extent, as important therapeutic targets for cancer therapy.

Contents
Resistance to TRAIL Pathway-Targeted Therapeutics in Cancer.- TRAIL-R3/R4 and Inhibition of TRAIL Signalling in Cancer.- IAPs and Resistance to Death Receptors in Cancer.- Bcl-2 Proteins and TRAIL Resistance in Melanoma.- Regulation of Caspase-Mediated Apoptosis by the Tumor Suppressor Par-4.- Stem Cell Regulation by Death Ligands and Their Use in Cell Therapy.- Atypical Immune Functions of CD95/CD95L.- TLR3 is a Death Receptor Target in Cancer Therapy.- Fas/CD95, Lipid Rafts and Cancer.- Role of Sphingolipids in Death Receptor Signalling.

Series Title
Resistance to Targeted Anti-Cancer Therapeutics
Biomechanics of the Human Stomach
R. N. Miftahof, Computational Biology and Medicine Centre, Manama, Bahrain

This book concerns the mathematical modeling and computer simulation of the human stomach. It follows the four modern P’s (prevention, prediction, personalization, and precision in medicine) approach in addressing the highly heterogeneous nature of processes underlying gastric motility disorders manifested as gastroparesis, functional dyspepsia, myenteric enteropathy etc. [...] 

Contents

Introduction to Biomolecular Structure and Biophysics
Basics of Biophysics
G. Misra, Noida (Ed)

This comprehensive book presents a modern concept in biophysics based on recently published research. It highlights various aspects of the biophysical fundamentals and techniques that are currently used to study different physical properties of biomolecules, and relates the biological phenomenon with the underlying physical concepts. [...] 

Contents

Essential and Non-essential Metals
Carcinogenesis, Prevention and Cancer Therapeutics
A. Mudipalli, Nati Ctr Envtl Assessment Office of Res and Devt, Research Triangle Park, NC, USA; J. T. Zelikoff, New York University, Tuxedo, NY, USA (Eds)

This book aims to present current state of understanding of the role of metals in human health and disease. [...] 

Contents
Calcium channels and pumps important during lactation as potential targets for breast cancer.- Tumor development through the Mg2+nifying glass.- Selenium: roles in cancer prevention and therapies.- Zinc and Zinc-Dependent Proteins in Cancer adn Chemotherapeutics.- Arsenic Carcinogenesis.- Cadmium Carcinogenesis and Mechanistic Insights.- Molecular Mechanisms of Chromium-Induced Carcinogenesis.- Mechanisms of Nickel Carcinogenesis.- Application of Metallomics and Metalloproteomics for Understanding the Molecular Mechanisms of Action of Metal-based Drugs. 

Series Title
Molecular and Integrative Toxicology
Technological Advances in Organ Transplantation

S. N. Nadig, Medical University of South Carolina, Charleston, SC, USA; J. A. Wertheim, Northwestern University, Chicago, IL, USA (Eds)

This book provides an expert view into the current technologies that are revolutionizing the field of solid organ transplantation. This unique book provides insight into progress made in areas spanning robotic surgery to tissue engineering and also gives a glimpse into what may lie ahead for this innovative specialty. [...]

Contents
Microdomains in the Cardiovascular System
V. Nikolaev, University Medical Center Hamburg-Eppendorf, Hamburg; M. Zaccolo, Oxford University, Oxford (Eds)

The book comprehensively presents new findings in cardiovascular research related to signaling microdomains in health and disease. Important second messengers such as cAMP, cGMP, calcium and their role in microdomain signaling are discussed. The book offers and explains methodical approaches and technical ways how to successfully analyze microdomain signaling, also in the context of disease. [...] 

Contents
Receptor-cyclic nucleotide microdomains in the heart.- Membrane Microdomains and cAMP Compartmentation in Cardiac Myocytes.- Function to Failure: Compartmentalization of Cardiomyocyte Signaling by A-Kinase Anchoring Proteins.- Pharmacological approaches for delineating functions of AKAP-base signalling complexes and finding therapeutic targets.- Chatting second messengers: PIP3 and cAMP.- Cyclic nucleotide phosphodiesterases and compartmentation in normal and diseased heart. [...] 

Series Title
Cardiac and Vascular Biology

The Physics of the Mind and Brain Disorders
Integrated Neural Circuits Supporting the Emergence of Mind
I. Opris, Wake Forest University School of Medicine, Winston-Salem, NC, USA; M. F. Casanova, University of Louisville, Louisville, KY (Eds)

This book covers recent advances in the understanding of brain structure, function and disorders based on the fundamental principles of physics. It covers a broad range of physical phenomena occurring in the brain circuits for perception, cognition, emotion and action, representing the building blocks of the mind. [...] 

Contents

Series Title
Springer Series in Cognitive and Neural Systems

Glial Amino Acid Transporters
A. Ortega, Cinvestav-IPN México City, México, Mexico; A. Schousboe, University of Copenhagen (Eds)

This ambitious compendium provides an extensive overview on the “supporting cells” of the vertebrate central nervous system, these being glial cells which far outnumber neurons but are much less understood. [...] 

Contents
Manganese and glutamate transporters gene expression.- Glycine transporters in glia cells: structural studies.- Taurine homeostasis and volume control.- Glycine transporters and its coupling with NMDA receptors.- Revised Ion/Substrate Coupling Stoichiometry of GABA Transporters.- EAAT2 and the molecular signature of amyotrophic lateral sclerosis.- Glial GABA transporters as modulators of inhibitory signalling in epilepsy and stroke.- Glial Glutamine transporters: Beyond the glutamate/glutamine shuttle. [...] 

Series Title
Advances in Neurobiology
Herpes viruses are widely distributed in nature, causing disease in organisms as diverse as bivalves and primates, including humans. Each virus appears to have established a long-standing relationship with its host, and the viruses have the ability to manipulate and control the metabolism of host cells, as well as innate and adaptive antiviral immune responses.

**Contents**

Initial contact: The first steps in herpesvirus entry.- Herpesvirus capsid assembly and DNA packaging.- Interindividual spread of herpesviruses.- Innate immune mechanisms and herpes simplex virus infection and disease.- Herpesvirus latency. On the importance of positioning oneself.- The human CMV IE1 protein: An offender of PML nuclear bodies.- Assembly and egress of an alphaherpesvirus clockwork.- Herpes simplex virus membrane fusion.

**Series Title**

Advances in Anatomy, Embryology and Cell Biology
Multiparticulate Drug Delivery
Formulation, Processing and Manufacturing
A. R. Rajabi-Siahboomi, VP & Chief Scientific Officer, Colorcon Inc., Harleysville, PA, USA (Ed)

Authored by leading experts from academia, users and manufacturers, this book provides an authoritative account of the science and technology involved in multiparticulate drug delivery systems which offer superior clinical and technical advantages over many other specialized approaches in drug delivery. [...] 

Contents
Overview of multiparticulates.- Characterization of inert pellets for drug layering.- The science and practice of extrusion-spheronization.- Fluid bed technology, process robustness and scale-up.- Solution and suspension drug layering on inert pellets.- Dry powder layering on pellets Mini-tabs; versatile multiparticulate options for oral drug delivery.- Science and practice of microencapsulation technology.- Use of multiparticulate systems for fixed dose combination drug delivery. [...] 

Series Title
Advances in Delivery Science and Technology

June 2017
XII, 396 p. 156 illus., 100 illus. in color. Hardcover.
155 x 235 mm
£ 126.50 | € 169.99
ISBN 978-1-4939-7010-0

All Language Rights Available

Cellular Osmolytes
From Chaperoning Protein Folding to Clinical Perspectives
L. Rajendrakumar Singh, University of Delhi, Dr. B. R. Ambedkar Center for Biomedical Research, New Delhi; T. A. Dar, University of Kashmir, Srinagar (Eds)

This book provides essential information on improving protein folding/stability, which is a result of the balance between the intra-molecular interactions of protein functional groups and their interactions with the solvent environment. The protein folding solvent environment mainly consists of salts, small molecule compounds, metabolites, molecular chaperones and other chemical species. [...] 

Contents
Polyols as exceptional Protein stabilizers.- Osmolyte mixtures versus individuals in protein folding and aggregation.- Molecular insights of Osmolyte-protein Interaction.- MDS simulation studies on osmolyte protein interactions.- Osmolytes as protein aggregation Modifiers.- Osmolytes as Nano-probes of conformational changes.- Inhibition of Protein fibrillation by Chemical chaperones: a Therapeutic strategy.- Osmolyte in Infectious Diseases.- Possible strategies for the therapeutic intervention of osmolyte in Cancer.- Antioxidant osmolytes. [...] 

Series Title
Advances in Experimental Medicine and Biology

May 2017
VII, 249 p. 36 illus., 16 illus. in color. Hardcover.
155 x 235 mm
£ 115.50 | € 154.99
ISBN 978-981-10-3706-1

All Language Rights Available

Long Non Coding RNA Biology
M.R.S. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore (Ed)

This contributed volume offers a comprehensive and detailed overview of the various aspects of long non-coding RNAs and discusses their emerging significance. Written by leading experts in the field, it motivates young researchers around the globe, and offers graduate and postgraduate students fascinating insights into genes and their regulation in eukaryotes and higher organisms.

Contents

Series Title
Advances in Experimental Medicine and Biology

August 2017
XVI, 323 p. 20 illus., 9 illus. in color. Hardcover.
155 x 235 mm
£ 126.50 | € 169.99
ISBN 978-981-10-5202-6

All Language Rights Available
Cancer and Chemoprevention: An Overview
S. Rashid, Jamia Hamdard, New Delhi

This book focuses on the most recent, relevant, comprehensive and significant advances in cancer and chemo prevention. It broadly discusses cancer, its hallmarks and classification, molecular mechanisms of outbreak, contributing factors, role of oxidative stress, inflammatory mediators and evading apoptosis, which leads to the progression of disease. [...]

Contents
Regulated Bioanalysis: Fundamentals and Practice
M. L. Rocci Jr., ICON, Plc, Whitesboro, NY, USA; S. Lowes, Q Squared Solutions, Ithaca, NY, USA (Eds)

The editors have engaged leading scientists in the field to participate in the development of this book, which is envisioned as a “one of a kind” contribution to the field. The book is a comprehensive text that puts fundamental bioanalytical science in context with current practice, its challenges and ongoing developments. [...]}

Contents
Introduction.- Understanding Bioanalysis Regulations.- Logistical and Operational Practice in the Regulated Bioanalysis Laboratory.- Regulated Bioanalysis: Documentation and Reports.- Historical Aspects and Key Concepts Related to its Use.- Fundamentals of LC-MS/MS for Regulated Bioanalysis.- Liquid Chromatography-Mass Spectrometry Assays in the Regulated Bioanalytical Laboratory.- Development and maintenance of critical reagents for ligand binding assays to support regulatory-compliant bioanalysis. [...]}

Series Title
AAPS Advances in the Pharmaceutical Sciences Series

The Immunology of Cardiovascular Homeostasis and Pathology
S. Sattler, Imperial College London National Heart and Lung Institute, London, UK; T. Kennedy-Lydon, Imperial College London National Heart and Lung Institute, London, UK (Eds)

Cardiovascular immunology is a newly emerging research area, investigating the crosstalk between the cardiovascular and the immune system. [...]}

Contents
Preface.- Introduction.- Section 1: The Immune system in tissue and organ homeostasis.- Chapter 1: The Immune system beyond the fight against infection.- Section 2: Immune functions and properties of resident cells in the heart and cardiovascular system.- Chapter 2: Cardiomyocytes: Paying for the Tolls - The High Cost of the Innate Immune System for the Cardiac Myocyte.- Chapter 3: Fibroblasts: Properties and immune function of cardiac fibroblasts.- Chapter 4: Endothelial cells.- Chapter 5: Pericytes. [...]}

Series Title
Advances in Experimental Medicine and Biology

Cancer Vaccines
N. Savelyeva, University of Southampton, Southampton, UK; C. Ottensmeier, University of Southampton, Southampton, UK (Eds)

This volume focuses on the laboratory and clinical experience with targeting viral onco-antigens, while also reviewing the approaches to targeting self-cancer antigens in cancers of non-viral origin, where self-tolerance has been a challenge. It emphasizes the importance of selecting the right vaccine platform to induce a successful immune response against cancer antigens. [...]}

Contents
New Approaches in Immunotherapy for the treatment of Lung Cancer.- Novel approaches for vaccination against HPV-induced cancers.- Tapping the potential of DNA Delivery with Electroporation for Cancer Immunotherapy.- Targeted immunotherapy designed to treat Muc1-expressing solid tumour.- Chimeric DNA vaccines: an effective way to overcome immune tolerance.- Linked CD4 T-cell help: broadening immune attack against cancer by vaccination.- mRNA cancer vaccines – Messages that prevail.- The Use of Anti-CD40 mAb in Cancer.

Series Title
Current Topics in Microbiology and Immunology
Autism spectrum disorder (ASD) affects approximately 1% of the human population and is characterized by a core symptomatology including deficits in social interaction and repetitive patterns of behaviour plus various co-morbidities. [...] 

Contents
Anatomy and cell biology of autism spectrum disorder: Lessons from human genetics.- Neuroanatomy and neuropathology of autism spectrum disorder in humans.- Modelling autistic neurons with induced pluripotent stem cells.- Modelling autistic features in mice using quantitative genetic approaches.- Behavioural phenotypes and neural circuit dysfunctions in mouse models of autism spectrum disorder.- Cerebellar and striatal pathologies in mouse models of autism spectrum disorder. [...] 

Series Title
Advances in Anatomy, Embryology and Cell Biology

The cyclic purine nucleotides 3',5'-cAMP and 3',5'-cGMP are well-established second messengers. cGMP has recently been covered in a volume of the Handbook of Experimental Pharmacology (volume 191). In addition to 3',5'-cAMP and 3',5'-cGMP, so-called non-canonical cyclic nucleotides exist. [...] 

Contents
Part I: 3',5'-cCMP and 3',5'-cUMP as second messengers: cCMP and cUMP across the tree of life: From cCMP and cUMP generators to cCMP- and cUMP-regulated cell functions.- cCMP and cUMP in apoptosis: Concepts and methods.- Mammalian nucleotidyl cyclases and their nucleotide binding sites.- The Pseudomonas aeruginosa exoenzyme Y: A promiscuous nucleotidyl cyclase edema factor and virulence determinant.- Cyclic nucleotide monophosphates in plants and plant signalling. [...] 

Series Title
Handbook of Experimental Pharmacology

This book presents a summary of the multimodal analysis of user-generated multimedia content (UGC). Several multimedia systems and their proposed frameworks are also discussed. First, improved tag recommendation and ranking systems for social media photos, leveraging both content and contextual information, are presented. [...] 

Contents

Series Title
Socio-Affective Computing
Drug and Gene Delivery to the Central Nervous System for Neuroprotection
Nanotechnological Advances
H. S. Sharma, Uppsala University Hospital, Uppsala University, Uppsala, Sweden; D. F. Muresanu, University of Medicine and Pharmacy, Cluj-Napoca, Romania; A. Sharma, Uppsala University Hospital, Uppsala University, Uppsala, Sweden (Eds)

This book summarizes the latest research on drug and gene delivery to the central nervous system (CNS). The chapters address safety concerns regarding the nanotechnology that is needed to develop nanomedicine for clinical practice. [...] 

Contents
Chapter 1 Renewable Biomaterials as Nanocarriers for Drug and Gene Delivery.- Chapter 2 Nanocarriers as CNS Drug Delivery Systems for Enhanced Neuroprotection.- Chapter 3 Nanotechnology Based Approaches for Neurodegenerative Disorders: Diagnosis and Treatment.- Chapter 4 Viral Vector Gene Delivery to the Brain for Treating Neurogenetic Diseases.- Chapter 5 Sleep Deprivation Induced Blood-Brain Barrier Breakdown and Brain Pathology. Neuroprotective Effects of TiO2-Nanowired Delivery of Cerebrolysin and Ondansetron.- Chapter 6 Glyco-Functionalised Biomaterials in Neuroregeneration. [...] 

June 2017
XIII, 228 p. 47 illus., 38 illus. in color. Hardcover. 155 x 235 mm
£ 115.50 | € 154.99
ISBN 978-3-319-57695-4

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Drebrin
From Structure and Function to Physiological and Pathological Roles
T. Shirao, Gunma University Graduate School of Medicine, Maebashi, Japan; Y. Sekino, National Institute of Health Sciences, Setagaya-ku, Japan (Eds)

This book is the first comprehensive review of drebrin, which plays pivotal roles in various cellular events, via forming unique actin cytoskeletons, including synapse formation and in synaptic function. Particularly the loss of drebrin from dendritic spines is used as a marker of dementia in neurological disorders such as Alzheimer's disease. [...] 

Contents

Series Title
Advances in Experimental Medicine and Biology

August 2017
X, 425 p. 111 illus., 82 illus. in color. Hardcover. 155 x 235 mm
£ 126.50 | € 169.99

All Language Rights Available

Recent advances in Applied Microbiology
P. Shukla, Maharshi Dayanand University Dept of Microbiology, Rohtak (Ed)

This book is a one-stop reference resource, presenting recent research in various emerging areas of microbiology, including microbial biotechnology, microbes in health, microbial interactions, agricultural microbiology and computational approaches. [...] 

Contents

Series Title
Advances in Experimental Medicine and Biology

September 2017
X, 301 p. 56 illus., 33 illus. in color. Hardcover. 155 x 235 mm
£ 126.50 | € 169.99

All Language Rights Available
Understanding Host-Microbiome Interactions - An Omics Approach

Omics of Host-Microbiome Association

R. P. Singh, UGC-CAS Department of Biosciences Saurashtra University, Rajkot; R. Kothari, UGC-CAS Department of Biosciences Saurashtra University, Rajkot; P. G. Koringa, College of Vet. Sc. & Animal Husbandry Anand Agricultural University, Anand; S. P. Singh, UGC-CAS Department of Biosciences Saurashtra University, Rajkot (Eds)

This book offers up-to-date information on different microbiomes, their community composition and interactive functions with the host, bringing together information from diverse research reports to provide an overview of the rapid developments in meta-omics technologies.

Contents


Pharmacology of Mitochondria

H. Singh, Drexel University College of Medicine, Philadelphia, PA, USA; S. Sheu, Thomas Jefferson University, Philadelphia, PA, USA (Eds)

This special book is conceived to highlight mitochondrial structural and functional integrity and how they are associated with several human diseases such as cardiovascular, cancer, renal, neurological disorder, and genetic disorders.

Contents


Male Infertility: Understanding, Causes and Treatment

R. Singh, Central Drug Research Institute, Lucknow; K. Singh, Institute of Science, Banaras Hindu University, Varanasi (Eds)

This book covers the latest research on male infertility. The topics discussed range from understanding the genetic basis of infertility, to its causes and treatment. Since infertility is also of great interest to the general public, the book also includes a detailed description of what infertility is and how one can understand the different types.

Contents

Bone Toxicology
S. Y. Smith, Montreal, QC, Canada; A. Varela, Charles River Preclinical Services, Senneville, QC, Canada; R. Samadfam, Charles River Preclinical Services, Senneville, QC, Canada (Eds)

The content of this book is intended to provide the toxicologist in drug development in the pharmaceutical and biotechnology industries with a broad understanding of bone and its interactions with other organ systems in safety assessments. The book is divided into three parts. [...] 

Contents

Series Title
Molecular and Integrative Toxicology

Tumor Organoids
S. Soker, Wake Forest School of Medicine, Winston-Salem, NC, USA; A. Skardal, Wake Forest School of Medicine, Winston-Salem, NC, USA (Eds)

Cancer cell biology research in general, and anti-cancer drug development specifically, still relies on standard cell culture techniques that place the cells in an unnatural environment. [...] 

Contents

Series Title
Cancer Drug Discovery and Development

Advances in Biology and Treatment of Glioblastoma
K. Somasundaramn Institute of Science, Bangalore (Ed)

This volume covers the most important areas of glioblastoma – surgical resection, molecular pathology, targeted therapies, cancer stem cells, the role of DNA methylation, targeted sequencing for personalized therapy, animal models and advances in pediatric glioblastoma. [...] 

Contents
Chapter 1 Maximal Safe Resection in Glioblastoma: Use of Adjuncts (Daria Krivosheya, Marcos Vinicius Calfatt Maia and Sujit S Prabhu).- Chapter 2 Molecular Pathology of Glioblastoma- an Update (Vani Santosh, Palavala Sravya and Arimappamagan Arivazhagan).- Chapter 3 Current Therapies and Future Directions in Treatment of Glioblastoma (Joshua L. Wang, Luke Mugge, Pierre Giglio and Vinay Puduvalli).- Chapter 4 Recent Advances for Targeted Therapies in Glioblastoma (Michael Youssef, Jacob Mandel, Sajeel Chowdhary, and Santosh Kesari). [...] 

Series Title
Current Cancer Research
Molecular Pathogenesis and Signal Transduction by Helicobacter pylori

N. Tegtmeyer, Friedrich Alexander University Erlangen/Nuremberg, Erlangen; S. Backert, Friedrich Alexander University Erlangen/Nuremberg, Erlangen (Eds)

This volume reviews the current state of research concerning bacterial virulence factors and the infection biology of Helicobacter pylori, which is the leading cause of peptic ulcers and gastric cancer worldwide. [...] 

Contents
The human stomach in health and disease: infection strategies by Helicobacter pylori.- Human and Helicobacter pylori Interactions Determine the Outcome of Gastric Diseases.- Immune evasion strategies and persistence of Helicobacter pylori.- Recent advances in Helicobacter pylori replication: possible implications in adaptation to a pathogenic lifestyle and perspectives for drug design.- The Helicobacter pylori Methylome: Roles in Gene Regulation and Virulence.- Structural insights into Helicobacter pylori Cag protein interactions with host cell factors. [...] 

Series Title
Current Topics in Microbiology and Immunology

June 2017
XXIV, 347 p. 33 illus., 31 illus. in color. Hardcover.
155 x 235 mm
£ 126,50 | € 169,99
ISBN 978-3-319-50519-0

All Language Rights Available

Resistance to Molecular Therapies for Hepatocellular Carcinoma

A. Villanueva, Icahn School of Medicine at Mount Sinai, Graduate School of Biomedical Sciences, New York, NY, USA (Ed)

This volume evaluates the clinical patterns of resistance to sorafenib, the impact of trial design in the second-line setting and the current gold standard to define radiological resistance; describes the molecular mechanisms responsible for treatment resistance in HCC patients, including components of the immune system and tumor microenvironment; determines the role of the cancer stem cell phenot [...] 

Contents
Tumor Heterogeneity and Resistance to Targeted Therapies in Hepatocellular Carcinoma.- Modulating Immune Responses to Overcome Resistance in Hepatocellular Carcinoma.- Role of Tumor Microenvironment in Hepatocellular Carcinoma Resistance.- Contribution of the Cancer Stem Cell Phenotype to Hepatocellular Carcinoma Resistance.- Clinical and Preclinical Perspectives on Mechanisms of Sorafenib Resistance in Hepatocellular Carcinoma.- [...] 

Series Title
Resistance to Targeted Anti-Cancer Therapeutics

August 2017
XIII, 147 p. 16 illus. in color. Hardcover.
155 x 235 mm
£ 115,50 | € 154,99
ISBN 978-3-319-56196-7

All Language Rights Available

The Plastic Brain

R. von Bernhardi, Pontificia Universidad Católica de Chile, Santiago, Chile; J. Eugenín, Universidad de Santiago de Chile, Santiago, Chile (Eds)

A comprehensive overview of the many factors that can influence brain plasticity throughout the lifespan. Addresses perinatal plasticity, functional state plasticity, injury-induced plasticity, and stressor-induced plasticity. Because it looks at so many aspects of the field, this volume will serve as a great resource for students as well as researchers interested in expanding their knowledge. [...] 

Contents
What is neural plasticity?.- Part I: Neural plasticity in learning and memory.- CREB at the crossroad of activity-dependent regulation of nervous system development and function.- Models of short term synaptic plasticity.- Plasticity in the interoceptive system.- Learning as a functional state of the brain: studies in wild-type and transgenic animals.- Part II: Neural plasticity in early postnatal development.- Bidirectional effects of mother-young contact on the maternal and neonatal brains.- Prenatal stress and neurodevelopmental plasticity: relevance to psychopathology. [...] 

Series Title
Advances in Experimental Medicine and Biology

September 2017
XII, 293 p. 45 illus., 25 illus. in color. Hardcover.
155 x 235 mm
£ 126,50 | € 169,99
ISBN 978-3-319-62815-8

All Language Rights Available
Transient Receptor Potential Canonical Channels and Brain Diseases
Y. Wang, Institute of Basic Medical Science, Beijing, China (Ed)

This book discusses the latest findings on the physiological and pathological functions of transient receptor potential canonical/classical (TRPC) proteins in the brain. In addition to reviewing the functions of TRPCs in brain development and neuron transmission, it mainly covers the potential roles of TRPCs in brain disorders. [...]

Contents
TRP channel classification.- TRPC channel structure and properties.- TRPC channel downstream signaling cascades.- TRPC channels in Health and Disease.- TRPC channels and programmed cell death.- TRPC channels and stroke.- TRPC channels and Alzheimer’s disease.- TRPC channels and Parkinson’s disease.- TRPC channels and neuron development, plasticity and activities.- TRPC channels and brain inflammation.- TRPC channels and Epilepsy.- TRPC channels and mental disorders.- TRPC channels and cell proliferation.- TRPC channels and glioma.

Series Title
Advances in Experimental Medicine and Biology

Pulmonary Vasculature Redox Signaling in Health and Disease
Y. X. Wang, Albany Medical College, Albany, NY, USA (Ed)

The main goal of this book is to form a high-quality platform in which well-known and emerging pioneering basic, translational and clinical scientists can present their latest, exciting findings in the studies of redox signaling in the pulmonary vasculature. [...]

Contents
Chapter 1. Adventitial Fibroblast Nox4 Expression and ROS Signaling in Pulmonary Arterial Hypertension.- Chapter 2. Role of Transcription Factors in Pulmonary Artery Smooth Muscle Cells: An important Link to Hypoxic Pulmonary Hypertension.- Chapter 3. Molecular Basis of Nitrative Stress in the Pathogenesis of Pulmonary Hypertension.- Chapter 4. Pentose Shunt, Glucose-6-phosphate dehydrogenase and NADPH redox, and Stem cells in Pulmonary Hypertension. [...]

Series Title
Advances in Experimental Medicine and Biology

Tumor Dormancy and Recurrence
Y. Wang, BC Cancer Agency and University of British Columbia, Vancouver, Canada; F. Crea, The Open University, Walton Hall, Milton Keynes, UK (Eds)

This volume will be the first to provide a comprehensive description of tumor dormancy. It will define the clinical and biological aspects of this phenomenon, as well as the cellular and molecular mechanisms associated with tumor dormancy. Chapters will be authored by world-renowned experts who are conducting cutting-edge research in the field. [...]

Contents

Series Title
Cancer Drug Discovery and Development
Evolution of the Brain, Cognition, and Emotion in Vertebrates
S. Watanabe, Keio University, Minato-ku; M. A. Hofman, Netherlands Institute for Neuroscience, Amsterdam Zuidoost; T. Shimizu, University of South Florida, Tampa, FL (Eds)

This book presents a new view on the evolution of the brain, cognition, and emotion. Around a half-century ago, Professor Harry Jerison published a seminal book entitled Evolution of the Brain and Intelligence. Since then, there has been a series of dramatic methodological and conceptual changes which have led to many new insights into the understanding of brain evolution and cognition. [...] 

Contents

Pharmacologic Therapy of Ocular Disease
S. M. Whitcup, Akrivista and Whitecap Biosciences, Mission Viejo, CA, USA; D. T. Azar, University of Illinois at Chicago College of Medicine, Chicago, IL, USA (Eds)

There have been major advancements in the pharmacologic treatment of eye diseases over the past decade. With newly discovered disease targets and novel approaches to deliver therapeutic compounds to the eye, patients are seeing improved outcomes. [...] 

Contents
General Principles: Principles of Ocular Pharmacology.- Ocular Pharmacokinetics.- Ocular Drug Delivery.- Anterior Segment and Tear Film: Tear Film-dry eye.- Conjunctiva-allergic conjunctivitis, infectious conjunctivitis, conjunctival hyperemia.- Cornea-Keratitis, antibiotics, antifungals, anti-virals, anti-inflammatory agents including corticosteroids and NSAIDS.- Cornea-Keratoconus and other corneal disease, Pharmacologic cross-linking and future therapy.- Lens-management of cataract surgery, cataract prevention, floppy iris syndrome. [...] 

Breathing on the Roof of the World
Memoir of a Respiratory Physiologist
J. B. West, University of California San Diego, La Jolla, CA, USA

This book is an informal autobiography by John West MD PhD. He obtained his medical degree in Adelaide, Australia and then spent 15 years mainly at the Royal Postgraduate Medical School, Hammersmith Hospital in London where he, with others, used radioactive oxygen-15 to make the first description of the uneven regional distribution of blood flow in the lung. [...] 

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Series Title
Brain Science
Exosomes in Cardiovascular Diseases

**Biomarkers, Pathological and Therapeutic Effects**

J. Xiao, Shanghai University, Shanghai; S. Cretoiu, Victor Babes National Institute of Patho, Bucharest (Eds)

The book provides an intensive overview on exosomes in cardiovascular diseases, its potential as biomarkers, as well as pathological and therapeutic effects. It firstly describes the general aspects of exosomes including the definition, formation and secretion of exosomes and highlight their roles as biomarkers and pathological and therapeutic effects in cardiovascular diseases as well. [..]

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**Series Title**

Advances in Experimental Medicine and Biology

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Notch Signaling

**Immunology and Cancer**

K. Yasutomo, Tokushima University, Kuramoto (Ed)

This book covers the broad area related to Notch-mediated regulation of the immune system and tumorigenesis. Notch signaling was originally identified as a crucial pathway to regulate cell fate choice. Subsequent studies, however, have revealed that Notch regulates many steps of immune cell differentiation or development as well as tumorigenesis of cells. [..]

**Contents**

Preface.- Part I Immunology.- Ch1 Notch ligands for lymphocyte development.- Ch2 Notch controls the differentiation and function of cytotoxic CD8 T cells.- Ch3 Notch and myeloid cells.- Ch4 Taking CD4 T cells up a Notch.- Part II Cancer.- Ch5 NOTCH in malignant lymphoma.- Ch6 The two faces of Notch in solid cancers.

**Series Title**

Advances in Experimental Medicine and Biology

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Substance and Non-substance Addiction

**X. Zhang**, School of Life Sciences Univ. of Science of Technology of China, Hefei; J. Shi, National Institute on Drug Dependence Peking University, Beijing; R. Tao, Beijing Shijian Integrated Med Sci Inst, Beijing (Eds)

This book focuses on the similarities and differences between substance and non-substance addictions. It discusses in detail the mechanisms, diagnosis and treatment of substance and non-substance addictions, and addresses selected prospects that will shape future studies on addiction. Addiction is a global problem that costs millions of lives tremendous damage year after year. [..]

**Contents**

Received view of addiction, relapse and treatment.- Definition of substance and non-substance addictions.- Similarities and differences in molecule and neural circuit of substance and non-substance addictions.- Similarities and differences in genetics of substance and non-substance addictions.- Similarities and differences in neuroimaging of substance and non-substance addictions.- Similarities and differences in cognitive psychology of substance and non-substance addictions.- [..]

**Series Title**

Advances in Experimental Medicine and Biology
Phosphodiesterases: CNS Functions and Diseases

H. Zhang, West Virginia University Health Sciences Center, Morgantown, WV, USA; Y. Xu, University at Buffalo The State University of New York, Buffalo, NY, USA; J. M. O’Donnell, University at Buffalo The State University of New York, Buffalo, NY, USA (Eds)

PDEs are a family of enzymes that catalyze the hydrolysis of intracellular cyclic nucleotides. They are implicated in a number of disorders and dysfunctions and PDE inhibitors have already proven to be effective therapies for erectile dysfunction, COPD, and psoriatic arthritis. [...]