Drug Delivery Systems: Advanced Technologies Potentially Applicable in Personalised Treatment

This book is part of a series dedicated to recent advances on preventive, predictive and personalised medicine (PPPM).

Features
► Covers the polymers available for drug delivery systems ► Multidisciplinary approach to afford effective solutions for personalised treatments ► Describes the importance of self-assembly in the preparation of tailor-made nanoparticles ► Describes the technological tendencies in the area ► Written by leading experts in the field

Contents

Fields of interest
Biomedicine general; Diabetes; Medicinal Chemistry

Target groups
Research

Discount group
Professional Non-Medical

Due March 2013

2013. VIII, 394 p. 113 illus., 70 in color. (Advances in Predictive, Preventive and Personalised Medicine, Volume 4) Hardcover ► $189.00
ISBN 978-94-007-6009-7

Behavioral Neurobiology of Depression and Its Treatment

The book highlights important new research using current state-of-the-art approaches by prominent researchers in the field of depression.

Features
► Written by leading authorities in the field ► With numerous illustrations ► Gives an in-depth insight into up-to-date Depression treatments

Contents

Fields of interest
Neurosciences; Psychiatry; Pharmacology/Toxicology

Target groups
Research

Discount group
Professional Non-Medical

Due February 2013

2013. Approx. 350 p. (Current Topics in Behavioral Neurosciences, Volume 14) Hardcover ► approx. $269.00
ISBN 978-3-642-35424-3

Sphingolipids: Basic Science and Drug Development

Sphingolipids are lipid components of the plasma membrane in eukaryotic cells. They have an important function in signaling mechanisms in the cell. This book on sphingolipids provides insights into the basics of sphingolipid biology and drug development, with a particular emphasis on the sphingolipid derivative ceramide. In the first part basic functions of sphingolipids are described, as well as the genetics of important enzymes, sphingolipid metabolism and synthesis. The second part of this first volume focuses on drug development and pharmacology. The book is intended for scientists in pharmacology, biochemistry and cell biology with a focus on biomedical research as well as for clinicians working in pharmacology, oncology, cardiology, neurology and infectious disease.

Features
► Provides in-depth insights into basic molecular functions of sphingolipids ► Describes novel treatment options ► Together with Volume 216, represents a unique, comprehensive collection on important aspects of sphingolipids' basic biology, functioning and applied research

Contents

Fields of interest
Pharmacology/Toxicology; Membrane Biology; Cell Biology

Target groups
Research

Discount group
Professional Non-Medical

Due March 2013

2013. X, 287 p. 32 illus., 8 in color. (Handbook of Experimental Pharmacology, Volume 215) Hardcover ► $369.00
ISBN 978-3-7091-1367-7

Biomedicine
New Series
Tumor Dormancy and Cellular Quiescence and Senescence

Series editor: M. A. Hayat

Most of us have cancer tumors, but by no means all of them will develop into cancer. Uncertainty remains about the factors that regulate entry of residual cancer into a dormant state, as well as the re-initiation of its growth. In this major new series from Springer, some of the finest researchers in this urgent field trace the promising developments in the study of tumor dormancy—advances that could unlock our understanding of the dormant tumor’s reanimation. They show how, for example, an angiogenic ‘switch’ triggers metastases and thus morbidity, which indicates that preventing this activation may prove a more effective therapy than trying to reverse the runaway train of a tumor’s recidivist growth. Even as research is hampered by a paucity of experimental models and a lack of consistent sources of dormant cells, the series illuminates the genetic and epigenetic factors responsible for dormancy and expansion. It is certain to inspire fresh thinking and research in our quest for therapeutic influence on cancer development.

The five volumes examine in detail a wealth of aspects of tumor dormancy, from the molecular mechanisms associated with it, to its manifestation in angiogenic and non-angiogenic tumors. Covering virtually all aspects of cellular quiescence, including that of hematopoietic stem cells, the books represent the sum of current knowledge on the topic and explores the potential of techniques such as the removal of senescence cells that disrupt tissue structure and replicate irreparable double breaks in the DNA helix. This abundant store of data and technique reflects the detailed and pain-staking research described in its many chapters. Taken together, the volumes cover a body of work with much promise for the future.

M. Hayat, Kean University, NJ, USA (Ed)

Tumor Dormancy, Quiescence, and Senescence, Vol.1

Aging, Cancer, and Noncancer Pathologies

Contents
Preface.- I. Tumor dormancy.- Is tumor dormancy clinically relevant? - Microenvironmental influence on breast cancer Dormancy and metastasis.- Determination of breast cancer dormancy: analysis of Circulating free dna using snp 6.0 arrays.- Clonogenicity of cultured prostate cancer cells is controlled by dormancy: significance and comparison with cell culture models of breast cancer cell dormancy.- Dormancy and metastasis of melanoma cells to lymph Nodes, lung, and liver.- Late recurrence is a sign of melanoma dormancy: need of Life-long follow-up of elanoma patients. II. Quiescence.- Hematopoietic stem cell quiescence and long term Maintenance: role of scl/tal1.- Regulation of muscle stem cell quiescent and Undifferentiated state: roles of hesr1 and hesr3 genes.- The kinase mirk/dyrk1b mediates a reversible quiescent State in a subset of ovarian, pancreatic, and colon cancers. III. Cellular senescence.- Stress-induced senescence: molecular pathways.- 11 Accumulation of reactive oxygen species and induction Of premature senescence: role of ddb2.- P21 mediates senescence by a mechanism involving accumulation of reactive oxygen species.- Role of micrornase and zeb1 downmodulation in oxidative Stress-induced apoptosis and senescence.- Hypoxic response in senescent brain is impaired: possible Contribution to neurodegeneration.- Enhancing reprogramming to pluri potency by controlling senescence.- Histone deacetylase inhibitor induces replicative Senescence of mesenchymal stem cells. [...]
Pharmacological Potential of Selected Natural Compounds in the Control of Parasitic Diseases

The natural world with a large number of terrestrial and marine plants and lower organisms is a great source of bioactive compounds historically used as remedies in various diseases.

Features
► Gives an updated overview to the topic ► Gives insight into the topic in a condensed and clearly arranged form ► Focuses on selected topics

Contents
Protozoan infections, pathology and therapy.- Current antiprotozoal drugs and problem of resistance.- Natural compounds with direct antiprotozoal activity.- Natural compounds isolated from higher plants.- Bioactive compounds from lower terrestrial organisms.- Marine organisms – undiscovered source of the potential drugs.- Concluding remarks.- Parasitic helminths of human and animals: health impact and control.- Anthelmintic drugs – efficacy, side effects and resistance.- Natural compounds with direct anthelmintic activity.- Anthelmintic potential of higher plants.- Lower terrestrial and marine organisms in anthelmintic drug discovery.- Concluding remarks.- Combined therapy of parasitic infections using substances from natural sources.- Host pathology and immunosuppression during parasitic infections.- Natural compounds with immunomodulatory effects.- Natural compounds with antioxidant and other host-protecting activities.- Summary: perspectives and possibilities in drug discovery from natural sources.

Fields of interest
Pharmacology/Toxicology; Parasitology

Target groups
Research

Discount group
Professional Non-Medical

Kisspeptin Signaling in Reproductive Biology

Contents

Fields of interest
Biomedicine general; Endocrinology; Reproductive Medicine

Target groups
Research

Discount group
Medical Professional
Infectious Agents and Cancer

Over the years of cancer investigation a lot of discoveries in this field were made, and many associations between various biological carcinogens and cancer were revealed. Some of them are credibly determined, thus these infectious agents (human papilloma virus, hepatitis B virus, hepatitis C virus, Epstein-Barr virus, human herpes virus 8, human T-cell lymphotropic virus 1, human immunodeficiency virus, Merkel cell polyomavirus, Helicobacter pylori, Opisthorchis viverrini, Clonorchis sinensis, Schistosoma haematobium) are recognized as carcinogens and probable carcinogens by International Agency for Research on Cancer (IARC).

Features
► A comprehensive analysis of the whole body of information about «unconventional» carcinogenic infectious agents ► Well-written text easily understandable for the wide audience but still useful even for the specialists who are familiar with the problem ► Helpful tables systematizing the key information on the field ► A list of all infectious agents suspected in cancer causation ► Principles of how to carry out a study devoted to biological carcinogenesis

Contents

Fields of interest
Cancer Research; Microbiology; Bacteriology

Target groups
Research

Discount group
Professional Non-Medical

Good Cascade Impactor Practices, AIM and EDA for Orally Inhaled Products

Contents

Fields of interest
Pharmaceutical Sciences/Technology; Biomedicine general

Target groups
Research

Discount group
Professional Non-Medical

Tight Junctions in Cancer Metastasis

There has been a dramatic increase in knowledge of tight junctions in the past decade. The molecular structure of tight junctions, cellular functions and the pathophysiological roles of tight junctions are becoming clear. Of the most important functions, the role of the cellular structure in cancer spread and drug delivery are increasingly realised. It is now clear that there are fundamental changes to tight junctions during the process of cancer development. Tight junctions are also critical to the metastatic process of cancer cells. The cellular structure is also crucial in drug therapies, namely, the permeability and bioavailability of the drugs, penetration of barriers such as the blood brain barrier.

Features
► First Tight Junction & Cancer Metastasis book ► Information on a wide range of cancer types ► Information of tight junction proteins

Contents
Preface.- The molecular aspects of Tight junctions.- The distribution of tight junctions and junctional proteins in the body.- Methodologies in investigation tight junctions.- Vascular permeability and drug delivery.- Tight junctions, BBB and brain metastasis.- Tight junctions and bladder cancer metastasis.- Tight Junctions and colorectal cancer therapies.- Tight junctions in breast cancer.- Regulation of tight junctions for therapeutic advantages.- Overcoming tight junctional permeability in cerebral metastasis.- CL-5 and cancer metastasis.- Intracellular signalling in TJ and AJ.- ROCK and TJ.- Index.

Fields of interest
Biomedicine general; Cancer Research; Oncology

Target groups
Graduate

Discount group
Professional Non-Medical
**Stress-Induced Mutagenesis**

The discovery of stress-induced mutagenesis has changed ideas about mutation and evolution, and revealed mutagenic programs that differ from standard spontaneous mutagenesis in rapidly proliferating cells. The stress-induced mutations occur during growth-limiting stress, and can include adaptive mutations that allow growth in the otherwise growth-limiting environment.

**Contents**
- Preface
- Stress-induced mutagenesis in bacteria
- Mutagenesis Associated with Repair of DNA Double-Strand Breaks Under Stress
- Transcription-mediated mutagenic processes
- Transposon mutagenesis in disease, drug discovery and bacterial evolution
- Hsp90 as a capacitor of both genetic and epigenetic changes in the genome during cancer progression and evolution
- Inheritance of stress-induced epigenetic changes mediated by the ATF-2 family of transcription factors
- Microsatellite Repeats: Canaries in the Coalmine
- Genetic instability Induced by hypoxic stress
- Radiation-induced delayed genome instability and hypermutation in mammalian cells
- Radiation-induced bystander effects and stress-induced mutagenesis
- Stress-induced mutagenesis, genetic diversification, and cell survival via anastasis, the reversal of late stage apoptosis
- The transgenerational effects of parental exposure to mutagens in mammals
- Revisiting mutagenesis in the age of high-throughput sequencing
- Index

**Fields of interest**
- Human Genetics
- Biochemistry
- Biomedicine

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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**New Strategies to Advance Pre/Diabetes Care: Integrative Approach by PPPM**

**Contents**
- Global Figures Argue in Favour of Preventive Measures and Personalised Treatment to Optimise Diabetes Care
- Three Levels of Prediction, Prevention &amp; Personalised Treatment Algorithms to Advance Diabetes Care
- Integrative Approach
- Diabetes mellitus: new challenges and innovative therapies
- Identification of Biomarkers for beta cell failure as detection tools for predictive screening in type 2 diabetes
- Endothelial dysfunction in diabetes: role of circulating biomarkers as potential diagnostic and prognostic tools
- Endothelial progenitor dysfunction in the pathogenesis of diabetic retinopathy
- Treatment concept to correct diabetes-associated deficits
- Oxidative stress and apoptotic biomarkers in diabetic retinopathy
- Diabetic Retinopathy: the Need for Predictive, Preventive and Personalized Approach to Management
- The role of inflammatory cytokines in diabetic nephropathy
- Potential use as predictive markers for early detection and progression
- Preventing hyperglycemia and tissue injury in diabetes
- The dynamic role of 2,3 dioxygenase in diabetes and its complications
- An Integrative Approach to Chronic Wounds in Patients with Diabetes: PPPM in Action
- Understanding inflammation as the key to targeted preventive measures for diabetes in relation to periodontics
- Cancer predisposition in diabetics: risk assessment and targeted preventive measures
- Recognition of individual risks by analysis of subcellular imaging insights into chromium picolinate therapy in pre-diabetes care
- Search into its safety and opinion controversy
- Remote control in diabetes

**Fields of interest**
- Biomedicine
- Oxidative Stress
- Diabetes

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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**The Hippo Signaling Pathway and Cancer**

The Hippo signaling pathway is rapidly gaining recognition as an important player in organ size control and tumorigenesis, and many leading scientists are showing increased interest in this growing field and it’s relation to cancer.

**Contents**
- Introduction
- Merlin and Angiomotin in Hippo-Yap signaling
- MST1/2 and other upstream signaling that affect Hippo pathway function
- YAP1 uses its modular protein domains and conserved sequence motifs to orchestrate diverse repertoires of signaling
- Regulation of YAP and TAZ by epithelial plasticity
- Hippo pathway and apoptosis
- YAP and p73: a matter of mutual specificity in tumour suppression
- The c-Abl/YAP/p73 apoptotic module and the Hippo pathway
- Hippo in cell cycle and mitosis
- Hippo and mouse models for cancer
- Roles of Hippo signaling during mouse embryogenesis
- Hippo Signaling and stem cells
- Hippo signaling and organ size control
- Hippo signaling in heart development
- Cell competition and the Hippo pathway
- Non-canonical roles from the Hippo pathway
- Index

**Fields of interest**
- Cancer Research
- Cell Biology
- Medical Microbiology

**Target groups**
- Research

**Discount group**
- Professional Non-Medical

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**Due March 2013**

2013. X, 335 p. 48 illus., 31 in color. Hardcover
- $209.00


**Due February 2013**

2013. X, 440 p. 142 illus., 112 in color. (Advances in Predictive, Preventive and Personalised Medicine, Volume 3) Hardcover
- $209.00

ISBN 978-94-007-5970-1

**Due March 2013**

2013. XVI, 354 p. 46 illus. in color. Hardcover
- $209.00

ISBN 978-1-4614-6219-4
M. Pascual, S. Roa, Institute of Biomedical Research of Salamanca, Spain

Epigenetic Approaches to Allergy Research

In recent years, epigenetic approaches to existing scientific problems have offered many new and exciting perspectives. This book focuses on epigenetic approaches to study asthma and allergy research. The authors briefly review cellular factors, immune signaling, and inflammatory pathways in allergy and asthma, as well as genetic influences in the pathogenesis of atopic disorders. Diseases that have been clearly linked to an epigenetic dysregulation will be discussed, as well as the role of epigenetics in the origin of complex diseases. The authors will examine the impact of environment factors in the predisposition to atopic disorders, and they will also describe the major unanswered questions and future perspectives of an exciting new field that studies allergic diseases from the epigenetic point of view.

Features
- Reviews the genetic background of allergies and its influence in the pathogenesis of atopic disorders
- Looks at the role of epigenetics in the origin of complex diseases
- Discusses the current knowledge and latest findings of epigenetic research in allergies and asthma

Contents
Introduction.- Immune System and Atopic Disorders.- Epigenetics.- Epigenetics, Environment and Allergic Diseases.- Conclusions and Future Perspectives.

Fields of interest
Human Genetics; Gene Expression; Allergology

Target groups
Research

Discount group
Professional Non-Medical

K. R. Westerterp, University of Maastricht, The Netherlands

Energy Balance in Motion

Energy balance can be maintained by adapting energy intake to changes in energy expenditure and vice versa, where short-term changes in energy expenditure are mainly caused by physical activity. Questions are whether physical activity is affected by over and under-eating, is intake affected by an increase or a decrease in physical activity, and does overweight affect physical activity? Presented evidence is largely based on studies where physical activity is quantified with doubly labeled water. Overeating does not affect physical activity while under-eating decreases habitual or voluntary physical activity. Thus, it is easier to gain weight than to lose weight.

Features
- An original work focused on the energy balance, especially on the limits of energy expenditure and athletic performance and is therefore different from other books dedicated to the topic of obesity
- Physical activity energy expenditure of modern man matches expenditures in wild mammals
- Energetics of man and animals under one denominator

Contents

Fields of interest
Human Physiology; Biomedicine general; Sports Medicine

Target groups
Graduate

Discount group
Professional Non-Medical