

Book Reviews

Editorial Policy. Recently published books and journals (one copy) are invited by the Editorial Office for announcement and review in ANTICANCER RESEARCH (no fee). Each announcement should include the full title of the publication, authors or editors, the number of pages, price, year of publication, ISBN and publisher. Publishers will be notified upon receipt of books and tear sheets of reviews will be sent after publication. Books will be returned to the sender only if the announcement is rejected. Reviews will be objective and clear regarding the content, quality and usefulness of the publication.

The Adenosine Receptors.

Edited by P.A. Borea, K. Varani, S. Gessi, S. Merighi, F. Vincenzi.
2018, pp 593, EUR 155.99, ISBN: 978-3-319-90807-6.
Springer Nature AG, Cham, Switzerland.

This book traces the history of adenosine receptor research from molecular biology to medicinal chemistry, including their implications in disease and potential strategies as therapeutic targets. It provides the reader with a comprehensive overview of the adenosine receptors that includes information on all subtypes - A1, A2A, A2B and A3. Aspects addressed include the most up to date information on their functional distribution in the nervous and peripheral systems, behavioral roles in inflammation, cancer, pain and neurological diseases such as Huntington's disease, Epilepsy, Parkinson's disease and Alzheimer's disease.

Small Molecules in Oncology.

Edited by U. Martens.
2018, pp 276, EUR 124.79, ISBN: 978-3-319-91441-1.
Springer International Publishing AG, Cham, Switzerland.

This book discusses in detail the latest developments in targeted oncology therapy using small molecules. It covers a wide range of small molecules, including tyrosine kinase inhibitors, mTOR, MEK, PARP, and multikinase inhibitors, as well as cell cycle and NTRK interacting agents. For each molecule, aspects such as the chemical structure, mechanism of action, drug targets, drug interactions, preclinical studies, clinical trials, treatment applications, and toxicity are discussed.

Extensive research into the molecular mechanisms of cancer has heralded a new age of targeted therapy. The field of personalized cancer therapy is now growing rapidly, and the advances being made will mean significant changes in the treatment algorithms for cancer patients. Numerous novel targets that are crucial for the survival of cancer cells can be attacked by small molecules such as protein tyrosine kinase inhibitors. This book is the third edition of Small Molecules in Oncology, but has now been divided into two volumes, with the other volume focusing specifically on small molecules in hematology.

Single Cell Biomedicine.

Edited by J. Gu, X. Wang.
2018, pp 195, EUR 155.99, ISBN: 978-981-13-0501-6.
Springer Nature Singapore, Singapore.

The book focuses on various detection targets applied in single cell studies, including tumor tissue cells, circulating tumor cells (CTCs), disseminated tumor cells (DTCs), circulating tumor DNA (ctDNA), cell-free DNA (cfDNA) and cancer stem cells (CSCs). It also discusses and compares detection methods using these detection targets in different fields to reveal single cell biomedical functions. The volume focuses not only on the methods already been established and validated, and also the methods newly developed. The book also highlights the importance and potential of single cell biomedicine in the development and validation of precision medicine strategies. It is useful for researchers and students in the field of cell biology, molecular medicine and precision medicine etc.

The Human Virome. Methods and Protocols

Edited by A. Moya, V. Perez Brocal.
2018, pp 274, EUR 155.99, ISBN: 978-1-4939-8681-1.
Springer Science+Business Media, New York, NY, USA.

This book details the most comprehensive, up-to-date, and cutting-edge protocols used in wet and dry labs to investigate the viral communities harbored within and on the human body. Chapters guide readers through methods on collection, isolation, identification and computational/statistical analysis, and body niches to cover those methodological issues inherent to the human tissues and organs. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. This book aims to facilitate researchers with their daily work in the field of the research on the human virome.

Programmed Necrosis. Methods and Protocols.

Edited by A.T. Ting.
2018, pp 191, USD 155.99, ISBN: 978-1-4939-8753-5.
Springer Science+Business Media, New York, NY, USA.

This volume explores the latest techniques and approaches used to study this emerging form of cell death. The chapters in this book cover topics such as distinguishing necroptosis from apoptosis; detecting MLKL oligomerization during programmed necrosis; analyzing the RIPK3 necrosome complex; using RIPK1 kinase small molecule inhibitors in studying necroptosis; monitoring RIPK1 phosphorylation in the TNFR1 signaling complex; and assessing *in vivo* kidney cell death in glomerular injury. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls.

This volume is a valuable resource for technicians, graduate students, postdoctoral fellows, and other scientists who are pursuing studies in this field.

Genetic Epidemiology. Methods and Protocols.

Edited by E. Evangelou.

2018, pp 299, EUR 176.79, ISBN: 978-1-4939-7867-0.
Springer Science+Business Media, New York, NY, USA.

This volume details fast-moving research while providing in-depth descriptions of methods and analytical approaches that are helping to understand the genome and how it is related to complex diseases. Chapters guide the reader through common and rare variation, gene-gene and gene-environment interactions and state-of-the-art approaches for the synthesis of genome-wide and gene expression data. Novel approaches for associations in the HLA region, family-based designs, Mendelian Randomization and Copy Number Variation are also presented. The volume concludes with the challenges researchers face while moving from identifying variants to their functional role and potential drug targets. Written in the highly successful *Methods in Molecular Biology* series format, chapters include introductions to their respective topics, a thorough presentation of methods and approaches and tips on troubleshooting and avoiding known pitfalls.

Stromal Immunology.

Edited by B.M.J. Owens, M. Lakins.

2018, pp 151, EUR 124.79, ISBN: 978-3-319-78125-9.
Springer International Publishing AG, Cham, Switzerland.

Research into and interest in the role of stromal cells in immunology has exploded over the past 15 years. The conventional view that placed non-hematopoietic stromal cells as passive, structural, and supportive entities has now been replaced with an appreciation that these cells have active, dynamic roles during immune responses, and thus impact on the pathophysiology of multiple immune-mediated diseases. This book serves to provide solid grounding in the fundamentals of stromal immunology, focusing on the biological aspects of their function in addition to highlighting key areas for the development of the field in the future. The book is also a unique source of information on emerging concepts that place stromal cells from outside lymphoid organs as major contributors to the biology of diverse conditions, such as rheumatoid arthritis, chronic parasitic infection, inflammatory bowel disease, and cancer.

Gene Therapy in Reconstructive and Regenerative Surgery.

Edited by G. Giatsidis.

2018, pp 113, EUR 91.62, ISBN: 978-3-319-78956-9.
Springer International Publishing AG, Cham, Switzerland.

This book offers an updated overview of the most recent research advances in the field, a comparison of established

techniques and methods, a discussion on current experimental and translational challenges, and a commentary on potential opportunities and future directions.

Dedicated chapters address and review the preclinical and clinical state-of-the-art of gene therapies for the reconstructive and regenerative surgery of skin and wounds, pathological scars, cartilage, tendons, skeletal muscles, and bio-engineered flaps. A brief guide to developing gene therapy clinical trials in the context of reconstructive and regenerative surgery is also provided.

Biomedical and technological innovations are transforming our capacity to use gene therapies to safely and effectively repair, reconstruct, and regenerate tissues that are deficient or have been damaged by trauma and diseases. The targeted and controlled modulation of gene expression in tissues represents a game-changing, next-generation therapeutic tool for the modern reconstructive surgeon, expanding the horizon of regenerative surgery and tissue engineering. Through gene therapies, surgeons can direct (stem) cell differentiation and cell function, modulate the release of growth/transcriptional factors, affect the biological properties of regenerative scaffolds, control tissue inflammation, or induce immune-suppression in composite tissue allotransplants and xenotransplants.

Written by renowned reconstructive surgeons and leading experts in each of these fields - from top academic institutions around the globe, the book provides an initial practical guide for veteran and newcomer surgeons alike, as well as for researchers interested in exploring the latest gene-based therapeutic strategies for reconstructive and regenerative surgery.

Molecular Applications in Cytology.

Edited by F.C. Schmitt.

2018, pp 268, EUR 135.19, ISBN: 978-3-319-74940-2.
Springer International Publishing AG, Cham, Switzerland.

This book is intended for practicing pathologists and cytopathologists, as well as for pathology trainees and cytotechnicians. It starts with a detailed description of the extremely important pre-analytical phase for molecular testing followed by a presentation of the key tests and their application in different organs, e.g. the lung or thyroid. Step-by-step instructions for the different assays, reporting and clinical integration of the test results are discussed. The authors help the reader to benefit from their experiences by providing a valuable tool for the implementation of these techniques in daily practice.

Though the use of molecular techniques is well established in surgical biopsies, to date they are not widely used in connection with cytological material. However, in some fields like lung cancer or aspirates from the pancreas and biliary tract the only available material for diagnosis is the cytological preparation a fact that has created a need for the standardization of molecular techniques on cytology.

The Heterogeneity of Cancer Metabolism.*Edited by A. Le.*

2018, pp 183, EUR 135.19, ISBN: 978-3-319-77735-1.

Springer International Publishing AG, Cham, Switzerland.

Genetic alterations in cancer, in addition to being the fundamental drivers of tumorigenesis, can give rise to a variety of metabolic adaptations that allow cancer cells to survive and proliferate in diverse tumor microenvironments. This metabolic flexibility is different from normal cellular metabolic processes and leads to heterogeneity in cancer metabolism within the same cancer type or even within the same tumor.

In this book, we delve into the complexity and diversity of cancer metabolism, and highlight how understanding the heterogeneity of cancer metabolism is fundamental to the development of effective metabolism-based therapeutic strategies. Deciphering how cancer cells utilize various nutrient resources will enable clinicians and researchers to pair specific chemotherapeutic agents with patients who are most likely to respond with positive outcomes, allowing for more cost-effective and personalized cancer therapeutic strategies.

Nuclear-Cytoplasmic Transport.*Edited by W. Yang.*

2018, pp 274, EUR 166.39, ISBN: 978-3-319-77308-7.

Springer International Publishing AG, Cham, Switzerland.

Dysfunction of nuclear-cytoplasmic transport systems has been associated with many human diseases. Thus, understanding of how functional this transport system maintains, or through dysfunction fails to maintain remains the core question in cell biology. In eukaryotic cells, the nuclear envelope (NE) separates the genetic transcription in the nucleus from the translational machinery in the cytoplasm. Thousands of nuclear pore complexes (NPCs) embedded on the NE selectively mediate the bidirectional trafficking of macromolecules such as RNAs and proteins between these two cellular compartments. In this book, the authors integrate recent progress on the structure of NPC and the mechanism of nuclear-cytoplasmic transport system *in vitro* and *in vivo*.

Prebiotic Chemistry and Chemical Evolution of Nucleic Acids.*Edited by C. Menor-Salvan.*

2018, pp 291, EUR 155.99, ISBN: 978-3-319-93583-6.

Springer International Publishing AG, Cham, Switzerland.

The origin of life is one of the biggest unsolved scientific questions. This book deals with the formation and first steps of the chemical evolution of nucleic acids, including the chemical roots behind the origin of their components from the simplest sources in a geochemical context. Chemical evolution encompasses the chemical processes and interactions conducive to self-assembly and supramolecular organization, leading to an increase of complexity and the emergence of life.

The book starts with a personal account of the pioneering work of Stanley Miller and Jeffrey Bada on the Chemistry of Origins of Life and how the development of organic chemistry beginning in the 19th century led to the emergence of the field of prebiotic chemistry, situated at the frontier between organic, geo- and biochemistry. It then continues reviewing in tutorial manner current central topics regarding the organization of nucleic acids: the origin of nucleobases and nucleosides, their phosphorylation and polymerization and ultimately, their self-assembly and supramolecular organization at the inception of life.

Cell Biology and Translational Medicine, Volume 1. Stem Cells in Regenerative Medicine: Advances and Challenges.*Edited by K. Turksen.*

2018, pp 168, EUR 135.19, ISBN: 978-3-319-93866-0.

Springer International Publishing AG, Cham, Switzerland.

Much research has focused on the basic cellular and molecular biological aspects of stem cells. Much of this research has been fueled by their potential for use in regenerative medicine applications, which has in turn spurred growing numbers of translational and clinical studies. However, more work is needed if the potential is to be realized for improvement of the lives and well-being of patients with numerous diseases and conditions.

With a goal to accelerate advances by timely information exchange, this new book series 'Cell Biology and Translational Medicine (CBTMED)' as part of Springer Nature's longstanding and very successful Advances in Experimental Medicine and Biology book series is launched. Emerging areas of regenerative medicine and translational aspects of stem cells will be covered in each volume. Outstanding researchers are recruited to highlight developments and remaining challenges in both the basic research and clinical arenas. This current book is the first volume of a continuing series.

The Gut Microbiome in Health and Disease.*Edited by D. Haller.*

2018, pp 356, EUR 114.39, ISBN: 978-3-319-90544-0.

Springer International Publishing AG, Cham, Switzerland.

The book provides an overview on how the gut microbiome contributes to human health. The readers will get profound knowledge on the connection between intestinal microbiota and immune defense systems. The tools of choice to study the ecology of these highly-specialized microorganism communities such as high-throughput sequencing and metagenomic mining will be presented. In addition, the most common diseases associated to the composition of the gut flora are discussed in detail. The book will address researchers, clinicians and advanced students working in biomedicine, microbiology and immunology.

Behavioral Neurobiology of PTSD.

Edited by E. Vermetten, D. Baker, V. Risborough.

2018, pp 265, EUR 145.59, ISBN: 978-3-319-94823-2.

Springer International Publishing AG, Cham, Switzerland.

This volume focuses on the behavioral neuroscience that supports our understanding of the neurobiology of trauma risk and response. The collection of articles focuses on both preclinical and clinical reviews of (1) state-of-the-art knowledge of mechanisms of posttraumatic stress disorder (PTSD) and co-occurring disorders, (2) the biological and psychological constructs that support risk and resiliency for trauma disorders, and (3), novel treatment strategies and therapeutics on the horizon.

Statistical Methods in Medical Research.

Edited by C.S. Rayat.

2018, pp 158, EUR 62.39, ISBN: 978-981-13-0826-0.

Springer Nature Singapore, Singapore.

This book covers all aspects of statistical methods in detail with applications. It presents solutions to the needs of post-graduate medical students, doctors and basic medical scientists for statistical evaluation of data. In present era, dependency on softwares for statistical analysis is eroding the basic understanding of the statistical methods and their applications. As a result, there are very few basic medical scientists capable of analyzing their research data due to lack of knowledge and ability. This book has been written in systematic way supported by figures and tables for basic understanding of various terms, definitions, formulae and applications of statistical methods with solved examples and graphic presentation of data to create interest in this mathematical science.