

## 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.

### Genome Editing. The Next Step in Gene Therapy.

*Edited by T. Cathomen, M. Hirsch, M. Porteus.*

2016, pp 263, Eur 139.99, ISBN: 978-1-4939-3507-9.

Springer Science+Business Media, New York, NY, USA.

This comprehensive volume explores human genetic engineering its pre-clinical and clinical applications, current developments, and as treatment for hereditary diseases. It presents and evaluates the most recent advances in the understanding of mammalian host DNA repair mechanisms, such as double-strand break induced gene targeting and mutagenesis, the development of zinc-finger nucleases, genome editing for neuromuscular diseases, phase integrases, triplex forming oligonucleotides and peptide nucleic acids, aptamer-guided gene targeting, AAV gene editing via DSB repair, engineered nucleases and trinucleotide repeat diseases, and creation of HIV-resistant cells. The expertly authored chapters contextualize current developments within the history of genome editing while also discussing the current and potential safety concerns of this rapidly growing field.

*Genome Editing: The Next Step in Gene Therapy*, the latest volume in the American Society of Gene and Cell Therapy series, deftly illuminates the potential of genetic engineering technology to eradicate today's deadliest and most prolific diseases. It is ideal reading for clinicians and researchers in genetics and immunology.

### RNA-Protein Complexes and Interactions. Methods and Protocols.

*Edited by R.-J. Lin.*

2016, pp 288, Eur 94.99, ISBN: 978-1-4939-3589-5.

Springer Science+Business Media, New York, NY, USA.

This detailed volume explores the continuing techniques of studying RNA-protein complexes and interactions as research in these areas expand. After an introductory chapter, the book continues with ways to purify RNA-protein complexes assembled in cells or in isolated cellular extracts, methods for measuring various biochemical activities of RNA-interacting proteins or ribonucleoproteins, biochemical methods for measuring direct RNA-protein contact, as well as various new or innovative methods pertinent to the subject. Written for the highly successful *Methods in Molecular Biology* series, chapters contain brief 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.

Authoritative and up-to-date, *RNA-Protein Complexes and Interactions: Methods and Protocols* provides a set of useful protocols, both basic and advanced, designed to inspire researchers working with RNA and RNA-interacting proteins.

### Natural Killer Cells.

*Edited by E. Vivier, J. Di Santo, A. Moretta.*

2015, pp 247, Eur 145.59, ISBN: 978-3-319-23915-6.

Springer International Publishing, Cham, Switzerland.

To celebrate the 40th anniversary of the discovery of Natural Killer (NK) cells, this volume focuses on the recent advances in our understanding of NK cell development and differentiation and their acquisition of functional properties, as well as the latest models for NK-cell analysis in mice and applications in clinical medicine. NK cells have travelled a circuitous path from their initial description as 'spontaneous killers' (for some simply an experimental artifact) to being a bona fide subset of innate lymphoid cells with a complementary mode of action in immune defense and an important mediator of immune reactivity in health and disease. Together, these reviews provide a timely and concise picture of the evolution of NK cells as essential agents in immunity and as potent weapons against disease. This book offers an appealing and insightful resource for scientists and clinicians.

### Epigenetics - A Different Way of Looking at Genetics.

*Edited by W. Doerfler, P. Boehm.*

2016, pp 254, Eur 145.59, ISBN: 978-3-319-27184-2.

Springer International Publishing, Cham, Switzerland.

This book presents epigenetics research as a new way of looking at genetics. Topics range from basic epigenetics mechanisms to development of cells and organisms and the biological basis of diseases. In addition the book focuses on immunology and the role of viruses in epigenetics. The last part of the book highlights proteins and peptides as epigenetic modulators.

### Immunology of the Skin. Basic and Clinical Sciences in Skin Immune Responses.

*Edited by K. Kabashima.*

2016, pp 510, Eur 176.79, ISBN: 978-4-431-55853-8.

Springer, Tokyo, Japan.

This book reviews the role of each cell subset in the skin, providing the basics for understanding skin immunology and the mechanisms of skin diseases. The skin is one of the immune organs and is continually exposed to foreign antigens and external stimuli that must be monitored and characterized for possible elimination. Upon exposure to foreign antigens, the skin can elicit a variety of immune responses in harmony with skin components that include keratinocytes, dendritic cell subsets, mast cells, basophils, fibroblasts, macrophages, gamma-delta T cells, neutrophils, myeloid-derived suppressor cells, vascular and lymphatic cells, hair

follicles, platelets, and adipose tissues, among others. In the past 10 years, knowledge of immunology has expanded drastically in areas such as innate immunity (Toll-like receptors, C-type lectins), and host defenses to bacteria and viruses, and this increased knowledge has led to the development of more effective treatment of psoriasis and other skin diseases. This book provides updates on the mechanisms of skin diseases including contact dermatitis, atopic dermatitis, psoriasis, urticaria, drug eruption, bullous diseases, anaphylaxis, graft-versus-host disease, rosacea, lymphoma, photodermatology, and collagen vascular diseases. Understanding the basics of skin immunology will help clinicians and dermatologists use new therapeutics such as biologics efficiently. Serving as an intermediary between basic science and clinical medicine, this book gives readers the opportunity to understand and marvel at the mystery and fascination of skin immunology.

### **Novel Biomarkers in the Continuum of Breast Cancer.**

*Edited by V. Stearns.*

2016, pp 279, Eur 145.59, ISBN: 978-3-319-22908-9.  
Springer International Publishing, Cham, Switzerland.

This volume provides a comprehensive review of established and novel biomarkers across the continuum of breast cancer. The volume covers topics related to breast cancer risk and prevention, prediction of response to today's standard therapies, and markers capable of influencing treatment decisions in the near future. Chapter authors combine their wide-ranging expertise to review the current status of the biomarker and to offer their individual perspectives on how biomarkers may be used in future treatments and research.

Breast cancer continues to be the most common malignancy diagnosed in women in the Western world. While there are multiple treatment approaches for breast cancer, today more than ever we recognize that each tumor is unique. The challenge ahead is to consider how to best use validated and novel biomarkers to select the most appropriate treatment(s) for individual patients.

### **Statistical Genomics. Methods and Protocols.**

*Edited by E. Mathé, S. Davis.*

2016, pp 418, Eur 114.39, ISBN: 978-1-4939-3576-5.  
Springer Science+Business Media, New York, NY, USA.

This volume expands on statistical analysis of genomic data by discussing cross-cutting groundwork material, public data repositories, common applications, and representative tools for operating on genomic data. *Statistical Genomics: Methods and Protocols* is divided into four sections. The first section discusses overview material and resources that can be applied across topics mentioned throughout the book. The second section covers prominent public repositories for genomic data. The third section presents several different biological applications of statistical genomics, and the fourth section highlights software tools that can be used to facilitate ad-hoc analysis and data integration. Written in the highly successful *Methods in Molecular Biology* series format, chapters include introductions to their respective topics, step-by-step, readily

reproducible analysis protocols, and tips on troubleshooting and avoiding known pitfalls.

Through and practical, *Statistical Genomics: Methods and Protocols*, explores a range of both applications and tools and is ideal for anyone interested in the statistical analysis of genomic data.

### **Introduction to Molecular Vaccinology.**

*Edited by M. Giese.*

2016, pp 373, Eur 77.99, ISBN: 978-3-319-25830-0.  
Springer International Publishing, Cham, Switzerland.

This textbook provides an easy-to-understand introduction to the complex topic of vaccine research and development. It gives a comprehensive though clearly arranged insight to the most important aspects of molecular vaccinology, leading from the basics in immunology, to design of vaccines and mode of action of vaccines to the actual formulation, manufacturing and registration of vaccines. The volume is therefore a valuable text about modern vaccinology for graduate students and a basic introduction for newcomers in vaccine design and development.

### **Targeting Oral Cancer.**

*Edited by A.M. Fribley.*

2016, pp 302, Eur 124.79, ISBN: 978-3-319-27645-8.  
Springer International Publishing, Cham, Switzerland.

This book provides research-oriented care providers with up-to-date information on the oral cancer patient population, the ways in which we are treating them, and the scientific approaches being pursued in order to improve survival and reduce treatment-related morbidity. The text is organized into three sections covering epidemiology and management, cancer development and biomarkers, and breaking developments and novel approaches for drug discovery. The first section includes discussion of the emerging role of HPV in oral cancer and explains the surgical, chemotherapy and radiation approaches to treatment. Aspects such as molecular progression, the role of cancer stem cells in tumor development, and the value of various biomarkers are then examined. The final section is devoted to the latest advances and covers, among other topics, current clinical trials, emerging drug targets, and targeting of the unfolded protein response and of mediators of coagulation.

### **Utility of Bromelain and N-Acetylcysteine in Treatment of Peritoneal Dissemination of Gastrointestinal Mucin-Producing Malignancies.**

*By A. Amini, S. Masoumi-Moghaddam, D.L. Morris.*

2016, pp 229, Eur 145.59, ISBN: 978-3-319-28568-9.  
Springer International Publishing, Cham, Switzerland.

This volume will describe both growth-inhibitory and mucin-depleting effects of bromelain and N-acetylcysteine, on their own or in combination, in cancer. It will coherently review the pathophysiological aspects of the mucin glycoproteins in malignancies and provide an updated account of the status of bromelain and N-acetylcysteine in cancer therapy.

The volume will develop the idea of using these two drugs as a combination formulation for mucin-depleting effects.

### **Vascular Tumors and Developmental Malformations. Pathogenic Mechanisms and Molecular Diagnosis.**

*Edited by P.E. North, T. Sander.*

2016, pp 149, Eur 85.59, ISBN: 978-1-4939-3239-9.  
Springer Science+Business Media, New York, NY, USA.

This book comprehensively covers the classification, histopathology, pathogenesis, and molecular diagnosis of vascular tumors and malformations, correlating these with current approaches to clinical management. It offers a new multidisciplinary resource for clinicians, pathologists, molecular diagnosticians, and scientists in the field of vascular medicine and biology, fostering cross-cutting collaboration in clinical practice and research. Fundamental background information on vascular tumors and malformation is provided, while also including the most current information available on pathogenic mechanisms underlying this heterogeneous group of disorders and the implications for molecular diagnosis and therapeutic intervention.

Written by experts in the field, *Vascular Tumors and Developmental Malformations: Pathogenic Mechanisms and Molecular Diagnosis* provides the medical and scientific community with an essential, practical resource to guide accurate diagnosis, well-targeted therapies, and informed investigation of specific clinicopathological entities within the spectrum of vascular anomalies.

### **Laparoscopic Surgery for Colorectal Cancer.**

*Edited by Y. Sakai.*

2016, pp 238, Eur 128.39, ISBN: 978-4-431-55710-4.  
Springer, Tokyo, Japan.

This book provides simplified principles of surgical anatomy for colorectal cancers with sophisticated drawings, standard laparoscopic procedures with striking photographs and illustrations, and advanced procedures such as lateral pelvic node dissection and “down to top” or “reverse” total mesorectal excision.

Oncological safety as well as minimum invasiveness of laparoscopic surgery for colorectal cancer has been acknowledged worldwide, based on long-term outcomes of several randomized controlled trials comparing laparoscopic surgery and open surgery. Developments in optical devices have provided us with a magnified clear vision of fine anatomical structures, facilitating our understanding of surgical anatomy and surgical procedures have been refined and improved accordingly.

All these topics are presented in this book—valuable for surgical residents and experts eager to learn more about laparoscopic colorectal surgery—and readers will be enlightened by a new paradigm for “lap-enhanced surgical anatomy”. Therefore this volume will greatly benefit not only colorectal surgeons but also general surgeons as well as gastroenterologists and oncologists..

### **Intestinal Polyposis Syndromes.**

*Edited by L.A. Boardman.*

2016, pp 201, Eur 85.59, ISBN: 978-3-319-28101-8.  
Springer International Publishing, Cham, Switzerland.

This book provides a comprehensive, state-of-the art review of intestinal polyposis syndromes. The book reviews the most up-to-date clinical, management, and genetic information regarding the continually evolving colorectal condition that manifests as a polyposis condition. It provides a reference for clinicians and researchers in understanding the complexity of intestinal polyposis and the importance of utilizing multiple modalities for the diagnosis, management and control of these conditions. It also provides an overview of what should alert a care provider to the possibility of a polyposis syndrome.

Written by experts in their fields, *Intestinal Polyposis Syndromes: Diagnosis and Management* is a valuable resource for physicians and researchers who deal with the challenges of diagnosing and managing colorectal cancer and intestinal polyposis syndromes.

### **Prostatitis and Its Management.**

*Edited by T.Cai, T.E. Bjerklund Johansen.*

2016, pp 145, Eur 85.59, ISBN: 978-3-319-25173-8.  
Springer International Publishing, Cham, Switzerland.

This book provides comprehensive coverage of the current and emerging management of prostatitis, from diagnosis to therapy. It addresses all clinical aspects of the prostatitis syndrome and equips the reader with all the information needed to offer a tailored therapy. Furthermore, clinical implications of the disease are analyzed and discussed, with particular attention to andrological complications (infertility) and the possible link between prostatitis and prostate cancer. Special consideration is also given to contemporary aspects of prostatitis management relating to antibiotic stewardship and elevated PSA, bearing in mind that thoughtless treatment of prostatitis represents malpractice and sometimes even a forensic issue. The final chapter comprising questions and answers will be valuable for quick consultation in everyday clinical practice. This book will be a truly practical guide for physicians involved in the diagnostic work-up and treatment of patients suspected of having prostatitis and will also serve as a ready source of information for all physicians who occasionally see prostatitis patients.

### **Immunopharmacogenomics.**

*Edited by Y. Nakamura.*

2015, pp 162, Eur 149.79, ISBN: 978-4-431-55725-8.  
Springer, Tokyo, Japan.

This book proposes immunogenomics, or immunopharmacogenomics, as the next-generation big science to uncover the role that the immune system plays in the pathogenesis of many diseases, by summarizing the importance of the deep sequencing of T-cell and B-cell receptors. Immunogenomics/immunopharmacogenomics, a genetic characterization of the immune system made possible by next-generation sequencing (NGS), will be important for the further understanding of the pathogenesis of various disease conditions.

Abnormal immune responses in the body lead to development of autoimmune diseases and food allergies. Rejection of recipient cells and tissues, as well as severe immune reactions to donor cells, is also the result of uncontrolled immune responses in the recipient body. There have been many reports indicating that activated immune responses caused by the interaction of drugs and HLA are present in drug-induced skin hypersensitivity and liver toxicity. The importance of the host immune responses has been recognized in cancer treatments, not only for immunotherapy but also for cytotoxic agents and molecular targeted drugs. Hence, characterization of the T-cell receptor and B-cell receptor repertoire by means of NGS deep sequencing will ultimately make possible the identification of the molecular mechanisms that underlie various diseases and drug responses. In addition, this approach may contribute to the identification of antigens associated with the onset or progression of autoimmune diseases as well as food allergies. Although the germline alterations and somatic mutations have been extensively analyzed, changes or alterations of the immune responses during the course of various disease conditions or during various treatments have not been analyzed. It is also clear that computational analyses to draw meaningful inferences of functional recognition receptors on the immune cells remain a huge challenge.

### **Angiogenesis in Health, Diseases and Malignancy.**

By A. Salajegheh.

2016, pp 423, Eur 181.89, ISBN: 978-3-319-28138-4.  
Springer International Publishing, Cham, Switzerland.

This book is about "Angiogenesis". A process in which new vasculature is formed from pre-existing capillaries. Angiogenesis process is associated with the proliferation and growth of both physiologically normal and neoplastic tissues, through the formation of vascular supply, essential for delivering growth requirements such as oxygen and nutrients.

The book describes more than 100 genes and their key regulatory functions in the context of normal healthy condition, disease and malignancy, cancer proliferation and progression. New insights into the role of angiogenesis and the therapeutic inhibition of its regulators are investigated, due to the great potential for exploitation in the development of a novel treatment for cancer.

New scientists, junior researchers and biomedical science students will find this book an invaluable introductory reference to their insight about angiogenesis and angiogenic role of more than 100 angiogenes and their role in healthy, disease and malignant conditions.

### **Immunohistochemistry. Essential Elements and Beyond.**

By A.E. Kalyuzhny.

2016, pp 85, Eur 71.68, ISBN: 978-3-319-30891-3.  
Springer International Publishing, Cham, Switzerland.

Aimed at both beginners and experienced researchers unfamiliar with the technique, this book provides a concise and easy-to-

understand guide to using immunohistochemistry. It identifies the proper place and purpose of each component of immunohistochemistry, emphasizes the components that are of critical importance, and explains the logistics of experimental approaches. Understanding the principles of immunohistochemistry allows for the identification and localization of protein targets and is of crucial use in the following experiments: producing transgenic animals; studying the effects of drug treatments; electrophysiological studies; animal surgery; isolating and differentiating stem cells; super-resolution microscopy.

*Immunohistochemistry for the Non-Expert* is aimed at a wide audience, including molecular biologists, pharmacologists, immunologists, chemists, cell biologists, physiologists, and researchers involved with animal anatomy studies.

### **Myeloid-Derived Suppressor Cells and Cancer.**

By D. Escors, J.E. Talmadge, K. Breckpot, J.A. Van Ginderachter, G. Kochan.

2016, pp. 102, Eur 53.49, ISBN: 978-3-319-26819-4.  
Springer International Publishing, Cham, Switzerland.

The book starts with an introduction to and history of myeloid-derived suppressor cells (MDSCs), followed by a description of their differentiation, their role in the tumour microenvironment and their therapeutic targeting. It closes with an outlook on future developments. In cancer patients, myelopoiesis is perturbed and instead of generating immunogenic myeloid cells (such as dendritic cells, inflammatory macrophages and granulocytes), there is an increase in highly immature MDSCs. These cells are distributed systemically, resulting in general immunosuppression. They also infiltrate tumours, promoting their progression and metastasis by inhibiting the natural anti-tumour immune response. As these cells also interact with classical anti-neoplastic treatments, they have become major therapeutic targets in the pharmaceutical industry and in oncology research.

### **Analysis of Single-Cell Data. ODE Constrained Mixture Modeling and Approximate Bayesian Computation.**

By C. Loos.

2016, pp 92, Eur 58.31, ISBN: 978-3-658-13233-0.  
Springer Fachmedien Wiesbaden, Switzerland.

Carolin Loos introduces two novel approaches for the analysis of single-cell data. Both approaches can be used to study cellular heterogeneity and therefore advance a holistic understanding of biological processes. The first method, ODE constrained mixture modeling, enables the identification of subpopulation structures and sources of variability in single-cell snapshot data. The second method estimates parameters of single-cell time-lapse data using approximate Bayesian computation and is able to exploit the temporal cross-correlation of the data as well as lineage information