

Molecular Pathology The Molecular Basis Of Human Disease

This book is a review and high-yield reference on the clinical molecular diagnostics of malignant neoplasms. It aims to address the practical questions frequently encountered in the molecular oncology practice, as well as key points and pitfalls in the clinical interpretation of molecular tests in guiding precision cancer management. The text uses a Q&A format and case presentations, with emphasis on understanding the molecular test methods, diagnosis, classification, risk assessment and clinical correlation. Starting with an update on the molecular biology of cancer, the book focuses on the topics related to molecular diagnostics and genetics-based precision oncology. Separate chapters are dedicated to discussion of the bioinformatics for the analysis of genetic/genomic data generated from molecular assays, and quality control (QC)/quality assurance (QA) programs in the clinical laboratories; both are critical in producing high quality results for clinical care of cancer patients. These are followed by organ system-based reviews and discussions on the molecular genetic abnormalities and related tests covering diverse types of common to rare malignant neoplasms. This book also provides up-to-date knowledge related to malignant neoplasms, discusses the established as well as evolving requirements for pathologic diagnosis of these malignancies. It also discusses the cost effective utilization of molecular tests in clinical oncology. Written by experts in the field, Practical Oncologic Molecular Pathology serves as a valuable reference for practicing pathologists, fellows, residents and other health care professionals.

An introduction to the molecular basis of health and disease for the new generation of students.

An easy-to-read survey of all the latest developments in molecular cardiologic research and therapy. The authors explain in a readable style the complex process of the heart's development, the molecular basis of cardiovascular diseases, and the translation of these research advances to actual clinical treatments. The expert information provided here serves as an invaluable building block for novel treatments of cardiovascular diseases and includes a comprehensive discussion of cardiac function and dysfunction, coronary artery disease, cardiac arrhythmias, vascular disease, and risk factors for cardiovascular disease. These state-of-the-art approaches to molecular cardiologic research include critical discussion of such topics as the molecular events that regulate angiogenesis and the potential for angiogenic therapy, emerging therapies for arrhythmias, and a description of the molecular biology of aging and its impact on the cardiovascular system.

Molecular Diagnostics, Third Edition, focuses on the technologies and applications that professionals need to work in, develop, and manage a clinical diagnostic laboratory. Each chapter contains an expert introduction to each subject that is next to technical details and many applications for molecular genetic testing that can be found in comprehensive reference lists at the end of each chapter. Contents are divided into three parts, technologies, application of those technologies, and related issues. The first part is dedicated to the battery of the most widely used molecular pathology techniques. New chapters have been added, including the various new technologies involved in next-generation sequencing (mutation detection, gene expression, etc.), mass spectrometry, and protein-specific methodologies. All revised chapters have been completely updated, to include not only technology innovations, but also novel diagnostic applications. As with previous editions, each of the chapters in this section includes a brief description of the technique followed by examples from the area of expertise from the selected contributor. The second part of the book attempts to integrate previously analyzed technologies into the different aspects of molecular diagnostics, such as identification of genetically modified organisms, stem cells, pharmacogenomics, modern forensic science, molecular microbiology, and genetic diagnosis. Part three focuses on various everyday issues in a diagnostic laboratory, from genetic counseling and related ethical and psychological issues, to safety and quality management. Presents a comprehensive account of all new technologies and applications used in clinical diagnostic laboratories

Explores a wide range of molecular-based tests that are available to assess DNA variation and changes in gene expression Offers clear translational presentations by the top molecular pathologists, clinical chemists, and molecular geneticists in the field

The Molecular and Cellular Basis of Neurodegenerative Diseases

The Molecular Basis of Cancer

Glycoimmunology

The Molecular Pathology of Autoimmune Diseases

Diagnostic Pathology: Molecular Oncology E-Book

Molecular Pathology and the Dynamics of Disease bridges the basic science of, and primary clinical literature on, human disease. Topics covered include several major disease areas, such as inflammation and host response, vascular disease, obesity, weight regulation and appetite, cancer biology, drug development, and gene- and cell-based therapeutics that are all presented in a way that emphasizes the interplay between clinical care and investigation. As new technologies and techniques are constantly changing and laboratory scientists plays a critical role in validating data used by clinicians in diagnosing patients, this book provides a timely guide that includes a clinical, research and theory perspective. Assimilates theoretical knowledge with practical lab work Provides a needed clinical perspective, along with research and theory Highlights the impact of basic science on the practice of medicine

This text provides a comprehensive and up-to-date reference for practicing pathologists, and residents and fellows in training. The text is organized into eight sections: genetics, inherited cancers, infectious disease, neoplastic hematopathology, solid tumors, HLA typing, identity testing, and laboratory management. Discussion of each diagnostic test includes its clinical significance, available assays, quality control and lab issues, interpretation, and reasons for testing. Coverage extends to HIV, hepatitis, developmental disorders, bioterrorism, warfare organisms, lymphomas, breast cancer and melanoma, forensics, parentage, and much more. Includes 189 illustrations, 45 in full-color. This textbook is a classic in the making and a must-have reference.

The new edition of this popular book emphasizes the decisions that need to be made to select one procedure over another.

Remarkable advances have been made in the pathogenesis of autoimmunity, such as with bone marrow transplantation, which is becoming a powerful strategy in treating certain life-threatening diseases. The Molecular Pathology of Autoimmune Diseases is a concise and centralized resource for information on the topic, with a special focus on the molecular and genetic basis of these disorders. Dozens of international experts devote themselves to illuminating the reader in this volume, with discussions on the basic aspects of autoimmune processes to systemic and organ-specific diseases. This volume is an invaluable reference to students and professionals in immunology and related fields.

In Situ Molecular Pathology and Co-expression Analyses

Biochemical and Molecular Basis of Pediatric Disease

The Molecular and Clinical Pathology of Neurodegenerative Disease

Precision Molecular Pathology of Bladder Cancer

Cellular and Molecular Pathology of the Liver is extensive, complex and ranges from the understanding the basic molecular mechanisms that dictate everything from liver homeostasis to liver disease. Molecular Pathology of the liver is complicated due to some of the important functions inherent and unique to the Liver, including its innate ability to regenerate and the multitude of functions it plays for the wellbeing of an organism. With all this in mind, Molecular Pathology of Liver Diseases is organized in different sections, which will coherently and cohesively present the molecular basis of hepatic physiology and pathology. The first two sections are key to understanding the liver anatomy and physiology at a cellular level and go on to define the molecular mechanics in various liver cell types. These sections also cover the existing paradigms in liver development, regeneration and growth. The next section is key to understanding the Molecular Pathology unique to liver diseases and associated phenotypes. The final sections are geared towards the existing knowledge of the molecular basis of many common and uncommon liver diseases in both neoplastic and non-neoplastic areas including pathologies associated with intra-hepatic and extra-hepatic biliary tree. Thus, this textbook is a one-stop reference for comprehending the molecular mechanisms of hepatic pathobiology. It is clearly unique in its format, readability and information and thus will be an asset to many in the field of Pathology and other disciplines.

This streamlined "essential" version of the Molecular Pathology (2009) textbook extracts key information, illustrations and photographs from the main textbook in the same number and organization of chapters. It is aimed at teaching students in courses where the full textbook is not needed, but the concepts included are desirable (such as graduate students in allied health programs or undergraduates). It is also aimed at students who are enrolled in courses that primarily use a traditional pathology textbook, but need the complementary concepts of molecular pathology (such as medical students). Further, the textbook will be valuable for pathology residents and other postdoctoral fellows that desire to advance their understanding of molecular mechanisms of disease beyond what they learned in medical/graduate school. In addition, this textbook is useful as a reference book for practicing basic scientists and physician scientists that perform disease-related basic science and translational research, who require a ready information resource on the molecular basis of various human diseases and disease states. Explores the principles and practice of molecular pathology: molecular pathogenesis, molecular mechanisms of disease, and how the molecular pathogenesis of disease parallels the evolution of the disease Explains the practice of "molecular medicine and the translational aspects of molecular pathology Teaches from the perspective of "integrative systems biology Enhanced digital version included with purchase

Molecular Pathology of Neoplastic Gastrointestinal Diseases reviews the molecular aspects that characterize the molecular spectrum of neoplastic conditions that affect the gastrointestinal tract, providing the reader with current up-to-date knowledge. For each disease entity chapters provide reviews on: the molecular basis of the individual disease, the current testing approaches currently available or in development for diagnosis or for gene target characterization for selective targeted therapies recommended guidelines for clinical application of molecular tests are included whenever available molecular testing for hereditary predisposition or disease risk animal models and cell culture models of disease

Principles and Practice

Practical Oncologic Molecular Pathology

Human Molecular Biology

Molecular Pathology

Essential Concepts in Molecular Pathology

This streamlined "essential" version of the Molecular Pathology (2009) textbook extracts key information, illustrations and photographs from the main textbook in the same number and organization of chapters. It is aimed at teaching students in courses where the full textbook is not needed, but the concepts included are desirable (such as graduate students in allied health programs or undergraduates). It is also aimed at students who are enrolled in courses that primarily use a traditional pathology textbook, but need the complementary concepts of molecular pathology (such as medical students). Further, the textbook will be valuable for pathology residents and other postdoctoral fellows who desire to advance their understanding of molecular mechanisms of disease beyond what they learned in medical/graduate school. Offers an essential introduction to molecular genetics and the "molecular" aspects of human disease Teaches from the perspective of "integrative systems biology," which encompasses the intersection of all molecular aspects of biology, as applied to understanding human disease In-depth presentation of the principles and practice of molecular pathology: molecular pathogenesis, molecular mechanisms of disease, and how the molecular pathogenesis of disease parallels the evolution of the disease using histopathology.

"Traditional" pathology section provides state-of-the-art information on the major forms of disease, their pathologies, and the molecular mechanisms that drive these diseases. Explains the practice of "molecular medicine" and the translational aspects of molecular pathology: molecular diagnostics, molecular assessment, and personalized medicine Each chapter ends with Key Summary Points and Suggested Readings

Molecular PathologyThe Molecular Basis of Human DiseaseAcademic Press

As befits a volume in the Advanced Series in Agricultural Sciences, this book was written with problems of practical agriculture in mind. One of the ways of controlling plant disease is by using resistant cultivars; and from the wide literature of genetics and biochemistry in plant pathology I have emphasized what seems to bear most closely on breeding for disease resistance. This has a double advantage, for it happens all to the good that this emphasis is also an emphasis on primary causes of disease, as distinct from subsequent processes of symptom expression and other secondary effects. The chapters are entirely modern in outlook. The great revolution in biology this century had its high moments in the elucidation of the DNA double helix in 1953 and the deciphering of the genetic code in 1961. This book, so far as I know, is the first in plant pathology to be conceived within the framework of this new biology. Half the book could not have been written 20 years ago, even if there had then been available all the literature that has since accumulated on the genetics and chemistry of plant disease. The new biology is the cement this book uses to bind the literature together. Another feature of this book is an emphasis on thermodynamics.

The Molecular and Cellular Basis of Neurodegenerative Diseases: Underlying Mechanisms presents the pathology, genetics, biochemistry and cell biology of the major human neurodegenerative diseases, including Alzheimer's, Parkinson's, frontotemporal dementia, ALS, Huntington's, and prion diseases. Edited and authored by internationally recognized leaders in the field, the book's chapters explore their pathogenic commonalities and differences, also including discussions of animal models and prospects for therapeutics. Diseases are presented first, with common mechanisms later. Individual chapters discuss each major neurodegenerative disease, integrating this information to offer multiple molecular and cellular mechanisms that diseases may have in common. This book provides readers with a timely update on this rapidly advancing area of investigation, presenting an invaluable resource for researchers in the field. Covers the spectrum of neurodegenerative diseases and their complex genetic, pathological, biochemical and cellular features Focuses on leading hypotheses regarding the biochemical and cellular dysfunctions that cause neurodegeneration Details features, advantages and limitations of animal models, as well as prospects for therapeutic development Authored by internationally recognized leaders in the field Includes illustrations that help clarify and consolidate complex concepts

Principles of Molecular Cardiology

Molecular Mechanisms in Chronic Kidney Disease

Molecular Pathology in Clinical Practice

Underlying Mechanisms

Principles and Applications of Molecular Diagnostics

Why a book on clinical neurology? Molecular neuroscience is advancing at a spectacular rate. As it does so, it is revealing important clues to the pathogenesis and pathophysiology of neurological diseases, and to the therapeutic targets that they present. Medicines work by targeting molecules. The more specific the targeting, the more specific the actions, and the fewer the side effects. Molecular Neurology Highlights, for graduate and MD-PhD students, research fellows and research-oriented clinical fellows, and researchers in the neurosciences and other biomedical sciences, the principles underlying molecular medicine as related to neurology. Written by internationally recognized experts this well-illustrated and well-referenced book presents the most up-to-date principles and disease examples relevant to molecular neurology, and reviews the concepts, strategies, and latest progress in this field. This book will interest anyone studying the molecular basis of neurology, or developing new therapies in neurology. Describes the newest molecular aspects of neurological disorders Provides an introduction to neurological disorders for basic scientists Updates clinicians and clinical researchers on the most recent developments

This streamlined "essential" version of the Molecular Pathology (2009) textbook extracts key information, illustrations and photographs from the main textbook in the same number and organization of chapters. It is aimed at teaching students in courses where the full textbook is not needed, but the concepts included are desirable (such as graduate students in allied health programs or undergraduates). It is also aimed at students who are enrolled in courses that primarily use a traditional pathology textbook, but need the complementary concepts of molecular pathology (such as medical students). Further, the textbook will be valuable for pathology residents and other postdoctoral fellows who desire to advance their understanding of molecular mechanisms of disease beyond what they learned in medical/graduate school. Offers an essential introduction to molecular genetics and the "molecular" aspects of human disease Teaches from the perspective of "integrative systems biology," which encompasses the intersection of all molecular aspects of biology, as applied to understanding human disease In-depth presentation of the principles and practice of molecular pathology: molecular pathogenesis, molecular mechanisms of disease, and how the molecular pathogenesis of disease parallels the evolution of the disease using histopathology. "Traditional" pathology section provides state-of-the-art information on the major forms of disease, their pathologies, and the molecular mechanisms that drive these diseases. Explains the practice of "molecular medicine" and the translational aspects of molecular pathology: molecular diagnostics, molecular assessment, and personalized medicine Student web site hosts "self-assessment" questions; Professor web site hosts all figures from book Each chapter ends with Key Summary Points and Suggested Readings

Studies of the interactions between plants and their viral, bacterial and fungal pathogens are of major importance in plant and crop production. More than 10% of potential agricultural yield is lost to these organisms annually worldwide, and major epidemics can cause significant local economic and environmental damage. Molecular Plant Pathology addresses the underlying molecular principles of plant/pathogen interactions, in a readily-accessible textbook format.

Major advancements in the field of in situ molecular pathology have occurred since publication of the first edition. In Situ Molecular Pathology and Co-expression Analyses, Second Edition, continues to teach both the molecular basis for the improvements and the actual protocols. This is the unique feature that separates it from the pack of other "cook-book" type approaches. The fields of in situ hybridization and immunohistochemistry have expanded rapidly where computer-based analyses systems have greatly expanded the power of these methods. Further, knowledge of the marked improvements in the reagents themselves since the first edition can make the difference of excellent versus misleading data. The automated platforms require that researchers and diagnostic biomedical investigators have a good understanding of the basics of in situ based tests, protocols, and biochemistry for troubleshooting in order to maximize the use of these platforms. This second edition focuses attention on straightforward protocols used to simultaneously detect two or more proteins/nucleic acids within intact tissue by doing co-expression analyses. Practicing molecular pathologists, diagnostic pathologists, laboratory directors, and toxicologists, as well as clinicians and researchers in training, will benefit from this clear presentation of protocols and theoretical framework. Data derived from in situ hybridization and immunohistochemistry. Explains the theory and foundation of immunohistochemistry and in situ hybridization and presents easy-to-follow experimental protocols with tricks of the trade Includes two new chapters: Recent improvements in immunohistochemistry and in situ hybridization, Quality control for immunohistochemistry and in situ hybridization: How to know if the color change is signal or background The second edition also includes a detailed test to help one learn the basics of histologic interpretation of tissues and a separate detailed test in how to differentiate signal from background Includes chapter-ending summaries of Key Points to Remember, bringing beginners up to speed with any seasoned veteran in the field Thoughtfully tackles the molecular basis if IHC and ISH, along with application of that knowledge to improving the techniques is significant

Molecular Pathology of Lung Cancer

Frequently Asked Questions

Robbins & Cotran Pathologic Basis of Disease E-Book

The Molecular Basis of Human Cancer

A Guide to Applied Molecular Testing

Diagnostic Molecular Pathology: A Guide to Applied Molecular Testing is organized around disease types (genetic disease, infectious disease, neoplastic disease, among others). In each section, the authors provide background on disease mechanisms and describe how laboratory testing is built on these mechanisms. Sections are dedicated to general methodologies employed in testing (to convey the concepts reflected in the methods), and specific description of how these methods can be applied and are applied to specific diseases are described. The book does not present molecular methods in isolation, but considers how other evidence (symptoms, radiology or other imaging, or other clinical tests) is used to guide the selection of molecular tests or how these other data are used in conjunction with molecular tests to make diagnoses (or otherwise contribute to clinical workup). In addition, final chapters look to the future (new technologies, new approaches) of applied molecular pathology and how discovery-based research will yield new and useful biomarkers and tests. Diagnostic Molecular Pathology: A Guide to Applied Molecular Testing contains exercises to test readers on their understanding of how molecular diagnostic tests are utilized and the value of the information that can be obtained in the context of the patient workup. Readers are directed to an ancillary website that contains supplementary materials in the form of exercises where decision trees can be employed to simulate actual clinical decisions. Focuses on the menu of molecular diagnostic tests available in modern molecular pathology or clinical laboratories that can be applied to disease detection, diagnosis, and classification in the clinical workup of a patient Explains how molecular tests are utilized to guide the treatment of patients in personalized medicine (guided therapies) and for prognostication of disease Features an ancillary website with self-testing exercises where decision trees can be employed to simulate actual clinical decisions Highlights new technologies and approaches of applied molecular pathology and how discovery-based research will yield new and useful biomarkers and tests

Successfully fighting cancer starts with understanding how it begins. This thoroughly revised 3rd Edition explores the scientific basis for our current understanding of malignant transformation and the pathogenesis and treatment of cancer. A team of leading experts thoroughly explain the molecular biologic principles that underlie the diagnostic tests and therapeutic interventions now being used in clinical trials and practice. Incorporating cutting-edge advances and the newest research, the book provides thorough descriptions of everything from molecular abnormalities in common cancers to new approaches for cancer therapy. Features sweeping updates throughout, including molecular targets for the development of anti-cancer drugs, gene therapy, and vaccines.. Keeping you on the cutting edge of your specialty. Offers a new, more user-friendly full-color format so the information you need is easier to find. Presents abundant figures-all redrawn in full color-illustrating major concepts for easier comprehension. Features numerous descriptions of the latest clinical strategies-helping you to understand and take advantage of today's state-of-the-art biotechnology advances

Stay current with the latest discoveries in molecular and genomic research. Sweeping revisions throughout include eight brand-new chapters on: Tumor Suppressor Genes; Inflammation and Cancer; Cancer Systems Biology; The Future; Biomarkers Assessing Risk of Cancer; Understanding and Using Information About Cancer Genomes; The Technology of Analyzing Nucleic Acids in Cancer; Molecular Abnormalities in Kidney Cancer; and Molecular Pathology.

This book covers the concepts of molecular medicine and personalized medicine. Subsequent chapters cover the topics of genomics, transcriptomics, epigenomics, and proteomics, as the tools of molecular pathology and foundations of molecular medicine. These chapters are followed by a series of chapters that provide overviews of molecular medicine as applied broadly to neoplastic, genetic, and infectious diseases, as well as a chapter on molecular diagnostics. The volume concludes with a chapter that delves into the promise of molecular medicine in the personalized treatment of patients with complex diseases, along with a discussion of the challenges and obstacles to personalized patient care. The Molecular Basis of Human Cancer, Second Edition, is a valuable resource for oncologists, researchers, and all medical professionals who work with cancer.

Clinical Molecular Medicine

Precision Molecular Pathology of Prostate Cancer

Expert Consult - Online

The Molecular Basis of Cancer E-Book

Principles of Molecular Pathology

Biochemical and Molecular Basis of Pediatric Disease, Fifth Edition has been a well-respected reference in the field for decades. This revision continues the strong focus on understanding the pathogenesis of pediatric disease, emphasizing not only the important role of the clinical laboratory in defining parameters that change with the disease process, but also the molecular basis of many pediatric diseases. Provides a fully-updated resource with more color illustrations Focuses on the biochemical and molecular basis of disease as well as the analytical techniques Defines important differences in the pathophysiology of diseases, comparing childhood with adult

One of the best-selling medical textbooks of all time, Robbins and Cotran Pathologic Basis of Disease is the one book that nearly all medical students purchase, and is also widely used by physicians worldwide. A "who's who" of pathology experts delivers the most dependable, current, and complete coverage of today's essential pathology knowledge. At the same time, masterful editing and a practical organization make mastering every concept remarkably easy. The result remains the ideal source for an optimal understanding of pathology. Offers the most authoritative and comprehensive, yet readable coverage available in any pathology textbook, making it ideal for USMLE or specialty board preparation as well as for course work Delivers a state-of-the-art understanding of the pathologic basis of disease through completely updated coverage, including the latest cellular and molecular biology. Demonstrates every concept visually with over 1,600 full-color photomicrographs and conceptual diagrams - many revised for even better quality. Facilitates learning with an outstanding full-color, high user-friendly design.

This book is suitable for undergraduate medical students, as part of their basic sciences training, but is also relevant to interested under- and postgraduate science and engineering students. There is a special focus on the application of molecular medicine in Africa and in developing countries elsewhere.

This succinct yet comprehensive up-to-date current and emerging concepts in molecular pathology of bladder cancer. Divided into two distinct sections, the first part focuses on the general principles of molecular findings in bladder cancer, while the second part focuses on the molecular changes associated with specific histologic subtypes. The volume also addresses such topics as molecular alterations in non-invasive and invasive disease, including bladder cancer variants as appropriate, emerging molecular classifiers of bladder cancer, and molecular associations to outcome and treatment. Written by experts in the field, Precision Molecular Pathology of Bladder Cancer is a valuable resource for those in the urologic community, including urologic pathologists, urologists, urologic oncologists and radiation oncologists, who treat and manage bladder cancer.

Basic Methods in Molecular Biology

An Introduction to the Molecular Basis of Health and Disease

Molecular Medicine for Clinicians

Tourette Syndrome

Molecular Diagnostics

Cellular and Molecular Pathobiology of Cardiovascular Disease focuses on the pathophysiology of common cardiovascular disease in the context of its underlying mechanisms and molecular biology. This book has been developed from the editors' experiences teaching an advanced cardiovascular pathology course for PhD trainees in the biomedical sciences, and trainees in cardiology, pathology, public health, and veterinary medicine. No other single text-reference combines clinical cardiology and cardiovascular pathology with enough molecular content for graduate students in both biomedical research and clinical departments. The text is complemented and supported by a rich variety of photomicrographs, diagrams of molecular relationships, and tables. It is uniquely suited to wide audiences of postdoctoral fellows in areas from pathology to physiology, genetics, pharmacology, and more, as well as medical residents in pathology, laboratory medicine, internal medicine, cardiovascular surgery, and cardiology. Explains how to identify cardiovascular pathologies and compare with normal physiology to aid research Gives concise explanations of key issues and background reading suggestions Covers molecular bases of diseases for better understanding of molecular events that precede or accompany the development of pathology

As with other books in the Molecular Pathology Library Series, Molecular Pathology of Lung Cancer bridges the gap between the molecular specialist and the clinical practitioner, including the surgical pathologist who now has a key role in decisions regarding molecular targeted therapy for lung cancer. Molecular Pathology of Lung Cancer provides the latest information and current insights into the molecular basis for lung cancer, including precursor and preinvasive lesions, molecular diagnosis, molecular targeted therapy, molecular prognosis, molecular radiology and related fields for lung cancer generally and for the specific cell types. As many fundamental concepts about lung cancer have undergone revision in only the past few years, this book will likely be the first to comprehensively cover the new molecular pathology of lung cancer. It provides a foundation in this field for pathologists, medical oncologists, radiation oncologists, thoracic surgeons, thoracic radiologists and their trainees, physician assistants, and nursing staff.

The Molecular and Clinical Pathology of Neurodegenerative Disease brings together in one volume our current understanding of the molecular basis of neurodegeneration in humans, targeted at neuroscientists and graduate students in neuroscience, and the biomedical and biological sciences. Bringing together up-to-date molecular biology data with clinical evidence, this book sheds a light on common molecular mechanisms that underlie many different neurodegenerative diseases and addresses the molecular pathologies in each. The combined research and clinical background of the authors provides a unique perspective in relating clinical experiences with the molecular understanding needed to examine these diseases and is a must-read for anyone who wants to learn more about neurodegeneration. Provides an up-to-date summary of neurodegeneration at a molecular, cellular, and tissue level for the most common human disorders Describes the clinical background and underlying molecular processes for Alzheimer ' s disease, Parkinson ' s, Prion, Motor Neuron, Huntington ' s, and Multiple Sclerosis Highlights the state-of-the-art treatment options for each disorder

Details examples of relevant cutting edge experimental systems, including genome editing and human pluripotent stem cell-derived neuronal models

Tourette syndrome (TS) is finally recognized as a common neurodevelopmental disorder, and has gained increasingly high social awareness and scientific interest worldwide. Knowledge of its clinical presentation, mechanisms of disease, and available treatment approaches has increased remarkably over the last decade. Likewise, the way clinicians, teachers, social care workers and families face the problem manifests in patients with TS is rapidly evolving. Tourette Syndrome, edited by Davide Martino and James F. Leckman, offers a unique opportunity to capture this interesting momentum through a comprehensive up-to-date review of Tourette Syndrome covers all the main aspects related to TS, analyzing the complexity of its clinical presentation, the novel viewpoints of causes and mechanisms, the best way to assess TS patients, and the multifaceted and multidisciplinary treatment options. The multidisciplinary and up-to-date content is the main asset of this volume, which represents a useful source of consultation for a wide audience of professionals, all of whom will have access to what is known so far on TS within their particular area of expertise, at the same time being able to expand and update their knowledge in other areas. Medical and PhD students, as well as post-doctoral scientists, will be able to use the volume as a valuable learning source. Also, questions for future research are clearly presented in the volume, providing a summary of the viewpoint of the contributing authors upon where research on TS should be heading. Finally, clinicians and other health professionals will have access at a glance to the main patients' associations and organizations dedicated to TS worldwide, which can facilitate the direct contact with patients.

Molecular Plant Pathology

Molecular Pathology of Liver Diseases

The Molecular Basis of Human Disease

Molecular Neurology

Molecular Pathology of Neoplastic Gastrointestinal Diseases

Anthony Killeen, MD, PhD, offers a comprehensive introduction to molecular pathology that encompasses both applied and theoretical knowledge. Writing in a very readable style, the author reviews the basic concepts of human molecular biology, explains the principles of the most commonly used analytical methods, and discusses the molecular principles that underlie both inherited diseases and acquired genetic abnormalities that lead to cancer. Using common viral infections as examples, the book applies these molecular methods to the detection of microbial pathogens. The growing importance of pharmacogenetics and identity testing in the clinical laboratory is also highlighted.

This volume focuses on our current understanding of the molecular underpinnings of prostate cancer and their potential application for precision medicine approaches. The emergence and applications of new technologies has allowed for a rapid expansion of our understanding of the molecular basis of prostate cancer and has revealed a remarkable genetic heterogeneity that may underlie the clinically variable behavior of the disease. The book consists of five sections which provide insight about the following (1) General principles; (2) Molecular signatures of primary prostate cancer; (3) Molecular signatures of advanced prostate cancer; (4) Key molecular pathways in prostate cancer development and progression; (5) and Precision medicine approach. Diagnosis, treatment, prognosis. Precision Molecular Pathology of Prostate Cancer is an important resource for the practicing oncologist, urologist, and pathologist, and will also be useful for researchers in the prostate cancer community.

Covering all aspects of molecular pathology as it relates to the transformation and pathogenesis of cancer, this award-winning volume in the Diagnostic Pathology series is an expert resource for pathologists at all levels of experience and training, both as a quick reference and as an efficient review to improve knowledge and skills. This easily accessible, point-of-care reference features templated, bulleted content that is generously illustrated with charts, graphs, tables, and color photomicrographs of histology with special stains. It offers a practical, clinical approach to examining how molecular mutations affect common medical diseases and identifies the relevant and appropriate molecular tests to perform for a complete work-up in the era of molecular-targeted therapies. Provides updated information on molecular mutations in different tumors, including solid tumors and hematopoietic neoplasms, and new targeted therapies geared toward these molecular alterations Discusses now widely used immunotherapy treatments, including how immunotherapy has revolutionized the treatment of many neoplasms such as breast and lung carcinomas and lymphoma Features more than 2,000 annotated images throughout, including H&E stains, immunostains, and FISH images Covers timely topics such as: Recent advances in cancer immunotherapy, specifically in the molecular basis of immunotherapy Newly discovered targeted therapies, including multiple lung carcinoma therapies now considered for patients based on existing mutations to specific genes (KRAS, ALK, BRAF, and ROS)

The new or interesting myeloid and lymphoid gene panels due to increased knowledge from next generation sequencing studies of new mutations and the resulting newly defined molecular targets Increased usage of next generation sequencing techniques Changes to hematopoietic tumor details based on revised WHO guidelines Recipient of a 2016 BMA Award: Highly Commended, Pathology (previous edition)

Principles and Applications of Molecular Diagnostics serves as a comprehensive guide for clinical laboratory professionals applying molecular technology to clinical diagnosis. The first half of the book covers principles and analytical concepts in molecular diagnostics such as genomes and variants, nucleic acids isolation and amplification methods, and measurement techniques, circulating tumor cells, and plasma DNA. The second half presents clinical applications of molecular diagnostics in genetic disease, infectious disease, hematopoietic malignancies, solid tumors, prenatal diagnosis, pharmacogenetics, and identity testing. A thorough yet succinct guide to using molecular testing technology, Principles and Applications of Molecular Diagnostics is an essential resource for laboratory professionals, biologists, chemists, pharmaceutical and biotech researchers, and manufacturers of molecular diagnostics kits and instruments.

Explains the principles and tools of molecular biology Describes standard and state-of-the-art molecular techniques for obtaining qualitative and quantitative results Provides a detailed description of current molecular applications used to solve diagnostics tasks

Molecular Diagnostics in Dermatology and Dermatopathology

Cellular and Molecular Pathobiology of Cardiovascular Disease

Genetic and Molecular Basis of Plant Pathogenesis

Molecular Pathology and the Dynamics of Disease

Diagnostic Molecular Pathology

Proceedings of the Third Jenner International Glycoimmunology meeting held in Il Ciocco, Tuscany, Italy, October 11-14, 1994

Molecular Diagnostics in Dermatology and Dermatopathology presents the basics of molecular biology and molecular diagnostic methods most commonly used in the clinical laboratory, with an emphasis on the concepts and testing most relevant to dermatological diseases. Topics include the integration of newer diagnostic and prognostic techniques with 'traditional' histologic approaches, and discussions of regulatory, ethical, legal, economic issues and 'newer' technologies. This important diagnostic tool outlines the clinically relevant uses (i. e.: diagnostic, staging and/or prognostic) applications of these techniques in the field of dermatology. Molecular studies that investigate the pathogenesis of skin diseases will be excluded, unless they also have a direct diagnostic utility. The book will be of interest to practicing pathologists, dermatology and pathology residents, dermatologists, and dermatopathologists.

Mitochondrial Disorders: Biochemical and Molecular Basis of Disease