Megakaryocyte Development And Function

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The Non-Thrombotic Role of Platelets in Health and Disease Steve W. Kerrigan 2015-11-18 Platelets play a key role in thrombosis and haemostasis. However recent evidence clearly demonstrates that the functional role of platelets extends to many other processes in the body. With an internationally recognised list of contributing authors, The Non-Thrombotic Role of Platelets in Health and Disease, is a unique and definitive source of state-of-the-art knowledge about the additional role of platelets outside thrombosis and haemostasis. The intended audience for The Non-Thrombotic Role of Platelets in Health and Disease includes platelet biologists, microbiologists, immunologists, haematologists, oncologists, respiratory physicians, cardiologists, neurobiologists, tissue engineers, as well as students and fellows in these areas.

Normal Hematopoiesis Enrico Mihich 2012-06-08 “An exciting glance at key issues in contemporary hematopoiesis.” - The Quarterly Review of Biology
Principles of Tissue Engineering Robert Lanza 2000-05-16 The opportunity that tissue engineering provides for medicine is extraordinary. In the United States alone, over half-a-trillion dollars are spent each year to care for patients who suffer from tissue loss or dysfunction. Although numerous books and reviews have been written on tissue engineering, none has been as comprehensive in its defining of the field. Principles of Tissue Engineering combines in one volume the prerequisites for a general understanding of tissue growth and development, the tools and theoretical information needed to design tissues and organs, as well as a presentation of applications of tissue engineering to diseases affecting specific organ systems. The first edition of the book, published in 1997, is the definite reference in the field. Since that time, however, the discipline has grown tremendously, and few experts would have been able to predict the explosion in our knowledge of gene expression, cell growth and differentiation, the variety of stem cells, new polymers and materials that are now available, or even the successful introduction of the first tissue-engineered products into the marketplace. There was a need for a new edition, and this need has been met with a product that defines and captures the sense of excitement, understanding and anticipation that has followed from the evolution of this fascinating and important field. Key Features * Provides vast, detailed analysis of research on all of the major systems of the human body, e.g., skin, muscle, cardiovascular, hematopoietic, and nerves * Essential to anyone working in the field * Educates and directs both the novice and advanced researcher * Provides vast, detailed analysis of research with all of the major systems of the human body, e.g., skin, muscle, cardiovascular, hematopoietic, and nerves * Has new chapters written by leaders in the latest areas of research, such as fetal tissue engineering and the universal cell * Considered the definitive reference in the field * List of contributors reads like a “who’s who” of tissue engineering, and includes Robert Langer, Joseph Vacanti, Charles Vacanti, Robert Nerem, A. Hari Reddi, Gail Naughton, George Whitesides, Doug Lauffenburger, and Eugene Bell, among others
Platelets and Megakaryocytes Jonathan M. Gibbins 2010-11-10 12 The average human body has on the order of 15 circulating platelets. They are crucial for hemostasis, and yet excessive platelet activation is a major cause of morbidity and mortality in Western societies. It is therefore not surprising that platelets have become one of the most extensively investigated biological cell types. We are, however, far from understanding precisely how platelets become activated under physiological and pathophysiological conditions. In addition, there are large gaps in our knowledge of platelet production from their giant precursor cell, the megakaryocyte. Understanding megakaryocyte biology will be crucial for the development of platelet gene targeting. The aim of Platelets and Megakaryocytes is therefore to bring together established and recently developed techniques to provide a comprehensive guide to the study of both the platelet and the megakaryocyte. It consists of five sections split between two volumes. The more functional assays appear in Volume 1, whereas Volume 2 includes signaling techniques, postgenomic methods, and a new bar of key perspectives chapters. Part I of Volume 1, Platelets and Megakaryocytes: Functional Assays, describes many well-established approaches to the study of platelet function, including aggregometry, secretion, arachidonic acid metabolism, procoagulant responses, platelet adhesion under static or flow conditions, flow cytometry, and production of microparticles. Although one would ideally wish to perform experiments with human platelets, studies within the circulation using intravital microscopy require the use of animal models, which are described in Chapter 16, vol. 1.
Thrombopoiesis and Thrombopoietins David Kuter 2012-06-06 David Kuter and a host of leading international researchers summarize in one volume all the knowledge of thrombopoietins (TPO) available today. The distinguished experts review the history of the search to discover TPO, describe the molecular and biological characteristics of this new molecule, and present the results of the preclinical animal experiments that will guide clinical use of this new hormone. Along the way they provide the most recent and comprehensive guide to the biology of megakaryocytes and platelets.

Research Awards Index 1986 Molecular Basis of Hematopoiesis Amittha Wickrema 2008-12-26 Although much is known with respect to blood cell formation and function, many new concepts in the areas of the regulation of hematopoietic stem cell commitment and the subsequent survival, proliferation, and differentiation of progenitors have been elucidated in the last five years. Our understanding of the microenvironment where stem cells reside and commit to distinct blood types (the niche) has grown significantly in recent years. Furthermore, blood cells have been used as the key model system to study microRNA function and the role of microRNAs in the transformation of normal cells into cancer cells. The current volume Molecular Basis of Hematopoiesis, edited by Amittha Wickrema & Barbara Kee, provides the most recent developments in the area in addition to a chapter on the utilization of basic science knowledge for the treatment of blood diseases. Each chapter in this book has been written and edited by faculty in major academic and research institutions around the world, who are pushing the frontiers of research in this important area.
Handbook of Benign Hematology Martha Pritchett Mims, MD, PhD 2019-12-11 Handbook of Benign Hematology is a practical guide to the diagnosis and management of benign hematologic conditions. The book begins with a chapter on normal hematopoiesis and follows with chapters devoted to groups of blood disorders and syndromes including neutrophil disorders, nonmalignant myeloid disorders, bone marrow failure syndromes, myeloproliferative disorders, anemias, iron metabolism disorders, platelet disorders, hemostasis and coagulation defects, and thrombosis. Each disorder subtype covered features a clinical case, an introduction to the condition, details on diagnosis including applicable criteria and lab work needed, key diagnostic dilemmas, prognosis, treatment options, details on clinical trials and emerging clinical strategies, and bulleted key points to highlight clinical pearls and common pitfalls. The final
reprint, the book includes updated science and treatment recommendations not found in the 2015 release of Williams Hematology, Ninth Edition. Perfect for use at the point of care, Williams Hemostasis and Thrombosis offers the most current evaluation and treatment options for patients with bleeding and thrombotic disorders. Covers the latest advances in hemostasis and thrombosis. *A handy quick-summary appears at the beginning of each chapter* Discusses the physiologic basis for hemostasis and thrombosis Hemopoietic System Thomas C. Jones 2012-12-06 The International Life Sciences Institute (ILSI) was established in 1978 to stimulate and support scientific research and educational programs related to nutrition, toxicology, and food safety, and to encourage cooperation in these programs among scientists in universities, industry, and government agencies to assist in the resolution of health and safety issues. To supplement and enhance these efforts, ILSI has made a major commitment to supporting programs to harmonize toxicologic testing, to advance a more uniform interpretation of bioassay results worldwide, to promote a common understanding of lesion classifications, and to encourage wide discussion of these topics among scientists. The Monographs on the Pathology of Laboratory Animals are designed to facilitate communication among those involved in the safety testing of foods, drugs, and chemicals. The complete set will cover all organ systems and is intended for use by pathologists, toxicologists, and others concerned with evaluating toxicity and carcinogenicity studies. The international nature of the project — as reflected in the composition of the editorial board and the diversity of the authors and editors — strengthens our expectations that understanding and cooperation will be improved worldwide through the series. Alex Malaspina, President International Life Sciences Institute Preface This book, on the hemopoietic system, is the eighth volume of a set prepared under the sponsorship of the International Life Sciences Institute (ILSI). Molecular Biology of the Cell Bruce Alberts 2004 Dacie and Lewis Practical Haematology E-Book Dacie Barbara J. Bain 2016-08-11 For more than 65 years, this best-selling text by Drs. Barbara J. Bain, I. Lewis Bates, and Mike A. Laffan has been the worldwide standard in laboratory hematology. The 12th Edition of Dacie and Lewis Practical Haematology continues the tradition of excellence with thorough coverage of all of the techniques used in the investigation of patients with blood disorders, including the latest technologies as well as traditional manual methods of measurement. You’ll find expert discussions of the principles of each test, possible causes of error, and the interpretation and clinical significance of the findings. A unique section on haematology in under-resourced laboratories. Ideal as a laboratory reference or as a comprehensive exam study tool. Each templated, easy-to-follow chapter has been completely updated, featuring new information on haematological diagnosis, molecular testing, blood transfusion — and much more. Complete coverage of the latest advances in the field. An expanded section on coagulation now covers testing for new anticoagulants and includes clinical applications. Platelets and Megakaryocytes Jonathan M. Gibbins 2010-10-28 12 The average human body has in the order of 10 circulating platelets. They are crucial for hemostasis, and yet excessive platelet activation is a major cause of m- hidity and mortality in western societies. It is therefore not surprising that platelets have become one of the most extensively investigated biological cell types. We are, however, far from understanding precisely how platelets become activated under physiological and pathophysiological conditions. In addition, there are large gaps in our knowledge of platelet production from their giant precursor cell, the megakaryocyte. Understanding megakaryocyte biology will be crucial for the development of platelet gene targeting. The aim of Platelets and Megakaryocytes is therefore to bring together established and recently developed techniques to provide a comprehensive guide to the study of both the platelet and the megakaryocyte. It consists of five s- tions split between two volumes. The more functional assays appear in Volume 1, whereas Volume 2 includes signaling techniques, postgenomic methods, and a n-ber of key perspectives chapters. Part I of Volume 1, Platelets and Megakaryocytes: Functional Assays, describes many well established approaches to the study of platelet function, including aggregometry, secretion, arachidonic acid metabolism, procoagulant responses, pla- let adhesion under static or flow conditions, flow cytometry, and production of microparticles. Although one would ideally wish to perform experiments with human platelets, studies within the circulation using intravital microscopy require the use of animal models, which are described in Chapter 16, vol. 1. Platelets Alan D. Michelson 2011-08-29 PLATELETS is the definitive current source of state-of-the-art knowledge about platelets and covers the entire field of platelet biology, pathophysiology, and clinical medicine. Recently there has been a rapid expansion of knowledge in both basic biology and the clinical approach to platelet-related diseases including thrombosis and hemorhage. Novel platelet function tests, drugs, blood bank storage methods, and gene therapies have been incorporated into patient care or are in development. This book draws all this information into a single, comprehensive and authoritative resource. First edition won Best Book in Medical Science Award from the Association of American Publishers. Contains fourteen new chapters on topics such as platelet genomics and proteomics, inhibition of platelet function by the endothelium, clinical tests of platelet function, real time in vivo imaging of platelets, and inherited thrombocytopenias. A comprehensive full-color reference comprising over 70 chapters, 1400 pages, and 16,000 references. Oxygen Transport to Tissue X1, Oliver Thews 2018-09-03 The book contains the refereed contributions from the 45th Annual Meeting of the International Society on Oxygen Transport to Tissue (ISOTT) 2017. This volume relates to the three key aspects of oxygen transport: microcirculation and vascular medicine; O2 deficiency and its impact on molecular processes in cells and tissues; cellular metabolism and mitochondrial function; multimodal functional imaging; mathematical modeling; the clinical relevance of oxygen supply as well as therapeutic interventions (e.g. in oncology or critical care medicine). The annual meetings of ISOTT bring together scientists from diverse fields (medicine, physiology, mathematics, biology, chemistry, physics, engineering, etc.) in a unique international forum. The book includes sections on brain oxygenation and function, NIRS oxygenation measurements, tumor oxygenation, cell metabolism, tissue oxygenation and treatment, methodical aspects of O2 measurements and physiological aspects of oxygen diffusion. Chapters 3, 24, 49 and 51 of this book are open access under a CC BY 4.0 license. Vascular Development Derek J. Chadwick 2007-08-20 The formation of blood vessels is an essential aspect of embryogenesis and regeneration. It is a central feature of numerous post-embryonic processes, including tissue and organ growth and regeneration. It is also one of the pathological bases of tumor formation and certain inflammatory conditions. In recent years, comprehension of the molecular genetics of blood vessel formation has progressed enormously and studies in vertebrate models systems, especially the mouse and the zebrafish, have identified a common set of molecules and processes that are conserved throughout vertebrate embryogenesis while, in addition, highlighting aspects that may differ between different animal groups. The discovery in the past decade of the crucial role of new blood vessel formation for the development of cancers has generated great interest in angiogenesis (the formation of new blood vessels from pre-existing ones), with its major implications for potential cancer-control strategies. In addition, there are numerous situations where therapeutic treatments either require or would be assisted by vasculogenesis (the de novo formation of blood vessels). In particular, post-stroke therapies could include treatments that stimulate neovascularization of the affected tissues. The development of such treatments, however, requires thoroughly understanding the developmental properties of endothelial cells and the basic biology of blood vessel formation. While there are many books on angiogenesis, this unique book focuses on exactly this basic biology and explores blood vessel formation in connection with tissue development in a range of animal models. It includes detailed discussions of relevant cell biology, genetics and embryogenesis of blood vessel formation and presents insights into the cross-talk between developing blood vessels and other tissues. With contributions from vascular biologists, cell biologists and developmental biologists, a comprehensive and highly interdisciplinary volume is the outcome. Neonatal Hematology Pedro A. de Alarcón 2021-01-31 Neonatal hematology is a fast-growing field, and the majority of sick neonates will develop hematological problems. The book covers all aspects of the disease, from the pathogenesis, diagnosis and management of hematologic problems in the neonate. Guidance is practical, including blood test interpretation, advice on transfusions and reference ranges for hematological values. Chapters have been thoroughly revised according to the latest advances in the field for this updated third edition. Topics discussed include erythrocyte disorders, platelet disorders, leukocyte disorders, immunologic disorders and hemostatic disorders. Coverage of oncological issues has been expanded to two separate chapters on leukemia and solid tumors, making information more easily accessible. Approaches to
identifying the cause of anemia in a neonate are explained, with detailed algorithms provided to aid clinicians in practice. Covering an important hematopoietic niche with an ever increasing amount of specialized knowledge, this book is a valuable resource for hematologists, neonatologists and pediatricians.

Platelet Heterogeneity John Martin 2012-12-06 Battle is a practical and sometimes lacking way of solving man’s problems. It relies on the strength of the combatants and ignores the truth of the dispute. Discussion face to face can dissolve attitudes which have incorrectly determined judgements. The most striking example of this that I know is a Battle in Ireland in the eleventh century, where the king of Leinster fought a Viking prince. The Icelanders had raided Ireland for several generations in search of women, which they lacked since most of the population of Iceland were men who had arrived there by rowing long-boats from Norway. The prince was leading such a raid for the first time. Standing in the prow of the leading boat he saw Irish cavalry galloping along the beach to meet them. As they approached the shore the Irish king rode out of the band to challenge single combat. The Icelanders jumped into the surf to meet him. As they raised their swords each realized that the other’s face was like his own. When the Irish king spoke the other recognized the language. It had been spoken in Iceland by his grandmother who had been captured and taken there from Ireland. Swords were dropped and replaced by drinking horns. It was soon established that they were cousins. The battle gave way to a life-time of close co-operation.

Hematopathology and Coagulation Amer Wahed 2017-05-27 This book provides questions and answers to test readers’ knowledge of hematopathology and coagulation, for use when preparing for the American Board of Pathology exams.

Molecular and Cellular Biology of Platelet Formation Harald Schulze 2017-02-07 This book gives a comprehensive insight into platelet biogenesis, platelet signal transduction, involvement of platelets in disease, the use of diverse animal models for platelet research and future perspectives in regard to platelet production and gene therapy. Being written by international experts, the book is a concise state-of-the-art work in the field of platelet biogenesis, biology and research. It represents an indispensable tool for research scientists in hematology, vascular biology, hematopoiesis and hemostasis, as well as for clinicians in the field of hematology and transfusion medicine.


Hematopoietic Stem Cell Development Isabelle Godin 2010-05-27 This book collects articles on the biology of hematopoietic stem cells during embryonic development, reporting on fly, fish, avian and mammalian models. The text invites a comparative overview of hematopoietic stem cell generation in the different classes, emphasizing conserved trends in development. The book reviews current knowledge on human hematopoietic development and discusses recent breakthroughs of relevance to both researchers and clinicians.

Developmental Stages in Human Embryos Ronan O’Rahilly 1987

Thrombosis and Hemorrhage Joseph Loscalzo 2003 Now in its Third Edition, this authoritative text continues to provide a comprehensive and systematic review of the biology, pathobiology, and clinical disorders of the hemostatic system. Its unique organization of the basic sciences coupled with clinical sections yields a user-friendly integrated text, and a reference tool that meets the needs of diverse investigators and clinicians of contemporary medicine for understanding the hemostatic system. New chapter topics covered in this edition include angiogenesis and vasculogenesis; hemorrhagic complications of antithrombotic therapy; interactions of coagulation and fibrinolytic proteins with the vessel wall; and less common thrombotic disorders.

Megalakocyte Development and Function Richard Frank Levine 1986

Homeostasis Fernanda Lasokowitsch Castanho 2019-01-30 The human body is composed of several systems and organs, consisting of millions of cells that need relatively stable conditions to function and contribute to the survival of the body as a whole. The maintenance of stable conditions for the cells against the variations of the external environment is an essential function of the body and is called homeostasis. As a consequence of the loss of homeostasis, a disease is manifested. This book aims to provide the reader with an up-to-date view of the self-regulatory mechanisms that are activated to achieve homeostasis, the pathways that are altered during the disease process, and how medicine can intervene to restore balance in critical patients.

Muscle Cell and Tissue Kunihiro Sakuma 2018-10-10 In order to complete tissue regeneration, various cells (neuronal, skeletal and smooth) interact coordinately with each other. This book, Muscle Cell and Tissue - Current Status of Research Field, deals with current progress and perspectives in a variety of topics on the skeletal and smooth muscle, stem cells, regeneration, disease or therapeutics. Novel applications for cell and tissue engineering including cell therapy, tissue models and disease pathology modeling are introduced. This book also deals with the differentiation/de-differentiation process of vascular smooth muscle cells in health and disease. Furthermore, natural products to reverse metabolic syndromes are descriptively reviewed. These chapters can be interesting for graduate students, teachers, physicians, executives and researchers in the field of molecular biology and regenerative medicine.

Hematology E-Book Leslie E. Silverstein 2012-11-05 Hematology, 6th Edition encompasses all of the latest scientific knowledge and clinical solutions in the field, equipping you with the expert answers you need to offer your patients the best possible outcomes. Ronald Hoffman, MD, Edward J. Benz, Jr., MD, Leslie E. Silverstein, MD, and other world-class contributors present the expert, evidence-based guidance you need to make optimal use of the newest diagnostic and therapeutic options. Consult this title on your favorite e-reader with intuitive search tools and adjustable font sizes. Elsevier eBooks provide instant portable access to your entire library, no matter what device you’re using or where you’re located. Make confident, effective clinical decisions by consulting the world’s most trusted hematology reference. Access the complete contents online at www.expertconsult.com, with a downloadable image collection, regular updates, case studies, patient information sheets, and more. Apply all the latest knowledge on regulation of gene expression, transcription splicing, and RNA metabolism; pediatric transfusion therapy; principles of cell-based gene therapy; allogeneic hematopoietic stem cell transplantation for acute myeloid leukemia and myelodysplastic syndrome in adults; hematology in aging; and much more, thanks to 27 brand-new chapters plus updating throughout. Consult this fully revised and updated print and e-book package to connect you to a community of dedicated physicians, scientists in platelet biogenesis, platelet signal transduction, involvement of platelets in disease, the use of diverse animal models for platelet research and future perspectives in regard to platelet production and gene therapy.
Pluripotent Stem Cells

Minoru Tomizawa 2016-07-20

Pluripotent stem cells have distinct characteristics: self-renewal and the potential to differentiate into various somatic cells. In recent years, substantial advances have been made from basic science to clinical applications. The vast amount knowledge available makes obtaining concise yet sufficient information difficult, hence the purpose of this book. In this book, embryonic stem cells, induced pluripotent stem cells, and mesenchymal stem cells are discussed. The book is divided into five sections: pluripotency, culture methods, toxicology, disease models, and regenerative medicine. The topics covered range from new concepts to current technologies. Readers are expected to gain useful information from expert contributors.

Consultative Hemostasis and Thrombosis E-Book

Craig S. Kitchens 2013-02-20

A unique clinical focus makes Consultative Hemostasis and Thrombosis, 3rd Edition your go-to guide for quick, practical answers on managing the full range of bleeding and clotting disorders. Emphasizing real-world problems and solutions, Dr. Craig S. Kitchens, Dr. Barbara A. Konkle, and Dr. Craig M. Kessler provide all the clinical guidance you need to make optimal decisions on behalf of your patients and promote the best possible outcomes. Consult this title on your favorite e-reader with intuitive search tools and adjustable font sizes. Elsevier eBooks provide instant portable access to your entire library, no matter what device you’re using or where you’re located. Efficiently look up concise descriptions of each condition, its associated symptoms, laboratory findings, diagnosis, differential diagnosis, and treatment. Get the latest information on hot topics such as Disseminated Intravascular Coagulation, Thrombophilia, Clinical and Laboratory Assessment and Management, Thrombotic-Thrombocytopenic Purpura, and Heparin-Induced Thrombocytopenia. Apply today’s newest therapies, including those that are quickly becoming standard in this fast-changing field. Meet the needs of specific patient groups with a new chapter on Bleeding and the Management of Hemorrhagic Disorders in Pregnancy and an extensively updated chapter on Thrombosis and Cancer. Zero in on key information with a new user-friendly design, and all-new full-color format, abundant laboratory protocols, and at-a-glance tables and charts throughout.

Biology of the Lymphokines

Stanley Cohen 2013-09-17

Biology of the Lymphokines discusses the scope and diversity of lymphokine research. This book focuses on the studies on lymphokines, such as those involving cellular source, chemical nature, purification strategies, and bioassay limitations. The mechanism of lymphokine action, lymphokines in vivo, and value of lymphokine quantitations are also covered. This text describes the repertoire of lymphokines produced by various lymphoblastoid cell lines and its significance for coping with the problem of large scale lymphokine production. The anti-viral and general immunoregulatory properties of interferons and rationale developed for integrating interferons with the family of lymphokines are likewise deliberated. This publication is a good source for students and researchers conducting work on lymphokines.